



National Institute of Justice

Law Enforcement and Corrections Standards and Testing Program

Guide for the Selection of Personal Protective Equipment for Emergency First Responders (Percutaneous Protection—Garments)

NIJ Guide 102–00

**Volume IIb
November 2002**

**U.S. Department of Justice
Office of Justice Programs**
810 Seventh Street N.W.
Washington, DC 20531

John Ashcroft
Attorney General

Deborah J. Daniels
Assistant Attorney General

Sarah V. Hart
Director, National Institute of Justice

For grant and funding information, contact:
Department of Justice Response Center
800-421-6770

Office of Justice Programs
World Wide Web Site
<http://www.ojp.usdoj.gov>

National Institute of Justice
World Wide Web Site
<http://www.ojp.usdoj.gov/nij>

U.S. Department of Justice
Office of Justice Programs
National Institute of Justice

Guide for the Selection of Personal Protection Equipment for Emergency First Responders (Percutaneous Protection— Garments)

NIJ Guide 102- 00, Volume IIb

Dr. Alim A. Fatah¹
John A. Barrett²
Richard D. Arcilesi, Jr.²
Charlotte H. Lattin²
Charles G. Janney²
Edward A. Blackman²

Coordination by:
Office of Law Enforcement Standards
National Institute of Standards and Technology
Gaithersburg, MD 20899-8102

Prepared for:
National Institute of Justice
Office of Science and Technology
Washington, DC 20531

November 2002

This document was prepared under CBIAC contract number
SPO-900-94-D-0002 and Interagency Agreement M92361 between NIST
and the Department of Defense Technical Information Center (DTIC).

NCJ 191520

¹National Institute of Standards and Technology, Office of Law Enforcement Standards.

²Battelle Memorial Institute.



National Institute of Justice

Sarah V. Hart
Director

This guide was prepared for the National Institute of Justice, U.S. Department of Justice, by the Office of Law Enforcement Standards of the National Institute of Standards and Technology under Interagency Agreement 94-IJ-R-004, Project No. 99-060-CBW. It was also prepared under CBIAC contract No. SPO-900-94-D-0002 and Interagency Agreement M92361 between NIST and the Department of Defense Technical Information Center (DTIC).

The authors wish to thank Ms. Kathleen Higgins of the National Institute of Standards and Technology, Mr. Bill Haskell of SBCCOM, Ms. Priscilla S. Golden of General Physics, LTC Don Buley of the Joint Program Office of Biological Defense, Ms. Nicole Trudel of Camber Corporation, Dr. Stephen Morse of Centers for Disease Control, and Mr. Todd Brethauer of the Technical Support Working Group for their significant contributions to this effort. We would also like to acknowledge the Interagency Board for Equipment Standardization and Interoperability, which consists of Government and first responder representatives.

FOREWORD

NIJ is the research, development, and evaluation agency of the U.S. Department of Justice and is solely dedicated to researching crime control and justice issues. NIJ provides objective, independent, nonpartisan, evidence-based knowledge and tools to meet the challenges of crime and justice, particularly at the State and local levels.

The NIJ Director is appointed by the President and confirmed by the Senate. The Director establishes the Institute's objectives and is guided by the priorities of the Office of Justice Programs, the U.S. Department of Justice, and the needs of the field. The Institute actively solicits the views of criminal justice and other professionals and researchers to inform its search for the knowledge and tools to guide policy and practice.

In partnership with others, NIJ's mission is to prevent and reduce crime, improve law enforcement and the administration of justice, and promote public safety. By applying the disciplines of the social and physical sciences, NIJ:

- C Researches the nature and impact of crime and delinquency.
- C Develops applied technologies, standards, and tools for criminal justice practitioners.
- C Evaluates existing programs and responses to crime.
- C Tests innovative concepts and program models in the field.
- C Assists policymakers, program partners, and justice agencies.
- C Disseminates knowledge to many audiences.

As part of its standard development activities, NIJ serves as the executive agent for the Interagency Board for Equipment Standardization and Interoperability (IAB). The IAB has developed a set of priorities for standards for equipment to be used by first responders to critical incidents, including terrorist incidents relating to chemical, biological, nuclear, radiological, and explosive weapons. In particular, the development of chemical and biological defense equipment guides for the emergency first responder community is a high priority of NIJ.

The Office of Law Enforcement Standards (OLES) of the National Institute of Standards and Technology (NIST) furnishes technical support to NIJ in the development of standards. OLES subjects existing equipment to laboratory testing and evaluation and conducts research leading to the development of national standards, user guides, and technical reports.

This document covers research conducted by OLES under the sponsorship of NIJ. Other NIJ documents developed by OLES cover protective clothing and equipment, communications systems, emergency equipment, investigative aids, security systems, vehicles, weapons, analytical techniques, and standard reference materials used by the forensic community.

Technical comments and suggestions concerning this guide are invited from all interested parties. They may be addressed to the Office of Law Enforcement Standards, National Institute of Standards and Technology, 100 Bureau Drive, Stop 8102, Gaithersburg, MD 20899-8102.

Sarah V. Hart, Director
National Institute of Justice

CONTENTS

FOREWORD.....	iii
COMMONLY USED SYMBOLS AND ABBREVIATIONS	vi
ABOUT THIS GUIDE	ix
1. INTRODUCTION.....	1
2. IDENTIFICATION OF PERSONAL PROTECTION EQUIPMENT.....	3
2.1 Identification of New Equipment.....	3
2.2 Vendor Contact.....	3
3. DATA FIELDS	5
3.1 General Category.....	5
3.2 Operational Parameters Category.....	7
3.3 Physical Parameters Category.....	8
3.4 Logistical Parameters Category.....	9
3.5 Special Requirements Category.....	11
APPENDIX A—REFERENCES	A-1
APPENDIX B—INDEX BY PERCUTANEOUS PROTECTIVE EQUIPMENT (GARMENTS) IDENTIFICATION NUMBER.....	B-1
APPENDIX C—INDEX BY PERCUTANEOUS PROTECTIVE EQUIPMENT (GARMENTS) NAME.....	C-1
APPENDIX D—INDEX BY PERCUTANEOUS PROTECTIVE EQUIPMENT (GARMENTS) MANUFACTURER.....	D-1
APPENDIX E—PERCUTANEOUS PROTECTIVE EQUIPMENT (GARMENTS) DATA SHEETS.....	E-1

COMMONLY USED SYMBOLS AND ABBREVIATIONS

A	ampere	h	hour	oz.	ounce
ac	alternating current	hf	high frequency	No.	number
AM	amplitude modulation	Hz	hertz	o.d.	outside diameter
cd	candela	i.d.	inside diameter	Ω	ohm
cm	centimeter	in	inch	p.	page
CP	chemically pure	IR	infrared	Pa	pascal
c/s	cycle per second	J	joule	pe	probable error
d	day	L	lambert	pp.	pages
dB	decibel	L	liter	ppm	parts per million
dc	direct current	lb	pound	qt	quart
$^{\circ}$ C	degree Celsius	lbf	pound-force	rad	radian
$^{\circ}$ F	degree Fahrenheit	lbf*in	pound-force inch	rf	radio frequency
dia	diameter	lm	lumen	rh	relative humidity
emf	electromotive force	ln	logarithm (base e)	s	second
eq	equation	log	logarithm (base 10)	SD	standard deviation
F	farad	M	molar	sec.	Section
fc	footcandle	m	meter	SWR	standing wave ratio
fig.	Figure	μ	micron	uhf	ultrahigh frequency
FM	frequency modulation	min	minute	UV	ultraviolet
ft	foot	mm	millimeter	V	volt
ft/s	foot per second	mph	miles per hour	vhf	very high frequency
g	acceleration	m/s	meter per second	W	watt
g	gram	mo	month	λ	wavelength
gal	gallon	N	newton	wk	week
gr	grain	N*m	newton meter	wt	weight
H	henry	nm	nanometer	yr	year

area=unit² (e.g., ft², in², etc.); volume=unit³ (e.g., ft³, m³, etc.)

ACRONYMS SPECIFIC TO THIS DOCUMENT

ASTM	American Society for Testing and Materials	NIOSH	National Institute for Occupational Safety and Health
BW	Biological Warfare	NIST	National Institute of Standards and Technology
CB	Chemical and Biological	NIJ	National Institute of Justice
CBW	Chemical Biological Warfare	NATO	North Atlantic Treaty Organization
CPU	Collective Protective Undergarment	NBC	Nuclear, Biological, and Chemical
CW	Chemical Warfare	OSHA	Occupational Safety and Health Administration
DOD	Department of Defense	PAPR	Powered Air Purifying Respirator
DTAPS	Disposable Toxicological Agent Protective Suit	PF	Protection Factor
DPG	Dugway Proving Grounds	PICS	Personal Ice Cooling System
DRES	Defense Research Establishment Suffield	POL	Petroleum, Oils, and Lubricants
ECBE	Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD	PPE	Personal Protection Equipment
EOD	Explosive Ordnance Disposal	PPV	Positive Pressure Ventilation
EPA	Environmental Protection Agency	PVC	Polyvinyl chloride
ERDEC	U.S. Army Edgewood Research, Development and Engineering Center	SBCCOM	U.S. Army Soldier and Biological Chemical Command
FBI	Federal Bureau of Investigation	SCBA	Self-Contained Breathing Apparatus
FR	Fire Resistant	SCFM	Standard Cubic Feet per Minute
HAZMAT	Hazardous Materials	STB	Super Tropical Bleach
IDLH	Immediately Dangerous to Life and Health	TAP	Toxicological Agent Protective
IAB	Interagency Board	TICs	Toxic Industrial Chemicals
ITAR	International Traffic and Arms Regulations	TIMs	Toxic Industrial Materials
NFPA	National Fire Protection Association	TSWG	Technical Support Working Group

PREFIXES (See ASTM E380)

d	deci (10^{-1})	da	deka (10)
c	centi (10^{-2})	h	hecto (10^2)
m	milli (10^{-3})	k	kilo (10^3)
μ	micro (10^{-6})	M	mega (10^6)
n	nano (10^{-9})	G	giga (10^9)
p	pico (10^{-12})	T	tera (10^{12})

COMMON CONVERSIONS

0.30480 m = 1 ft	4.448222 N = 1 lbf
25.4 mm = 1 in	1.355818 J = 1 ft·lbf
0.4535924 kg = 1 lb	0.1129848 N m = 1 lbf·in
0.06479891 g = 1 gr	14.59390 N/m = 1 lbf/ft
0.9463529 L = 1 qt	6894.757 Pa = 1 lbf/in ²
3600000 J = 1 kW·hr	1.609344 km/h = 1 mph
psi = mm of Hg x (1.9339 x 10 ⁻²)	
mm of Hg = psi x 51.71	

$$\text{Temperature: } T_{\text{°C}} = (T_{\text{°F}} - 32) \times 5/9$$

$$\text{Temperature: } T_{\text{°F}} = (T_{\text{°C}} \times 9/5) + 32$$

ABOUT THIS GUIDE

The National Institute of Justice is the focal point for providing support to State and local law enforcement agencies in the development of counterterrorism technology and standards, including technology needs for chemical and biological defense. In recognizing the needs of State and local emergency first responders, the Office of Law Enforcement Standards (OLEs) at the National Institute of Standards and Technology (NIST), supported by the National Institute of Justice (NIJ), the Technical Support Working Group (TSWG), the U.S. Army Soldier and Biological Chemical Command, and the Interagency Board for Equipment Standardization and Interoperability (IAB), is developing chemical and biological defense equipment guides. The guides will focus on chemical and biological equipment in areas of detection, personal protection, decontamination, and communication. This document focuses specifically on assisting the emergency first responder community in the evaluation and purchase of personal protective equipment.

The long range plans are to: (1) subject existing personal protective equipment to laboratory testing and evaluation against a specified protocol, and (2) conduct research leading to the development of multiple series of documents, including national standards, user guides, and technical reports. It is anticipated that the testing, evaluation, and research processes will take several years to complete; therefore, the National Institute of Justice has developed this initial guide for the emergency first responder community in order to facilitate their evaluation and purchase of personal protective equipment.

In conjunction with this program, additional guides, as well as other documents, are being issued in the areas of chemical agent and toxic industrial material detection equipment, biological agent detection equipment, decontamination equipment, and communication equipment.

This Volume, IIB, of the *Guide for the Selection of Personal Protective Equipment for Emergency First Responders*, which focuses on percutaneous (skin) protection other than apparel—herein referred to as garments (specifically suits, coveralls, and ensembles). It contains the information data sheets that were used to support the personal protective equipment evaluation detailed in Volume I. The compilation of data in Volume IIB is the result of the merger of several data acquisition methods used independently by NIST and TSWG.

The information contained in this guide has been obtained through literature searches and market surveys. The vendors were contacted multiple times during the preparation of this guide to ensure data accuracy. In addition, the information is supplemented with test data obtained from other sources (e.g., Department of Defense), if available. It should also be noted that the purpose of this guide is not to provide recommendations but rather to serve as a means to provide information to the reader to compare and contrast commercially available personal protective equipment. *Reference herein to any specific commercial products, processes, or services by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government. The information and statements contained in this guide shall not be used for the purposes of advertising, nor to imply the endorsement or recommendation of the United States Government.*

With respect to information provided in this guide, neither the United States Government nor any of its employees make any warranty, expressed or implied, including but not limited to the warranties of merchantability and fitness for a particular purpose. Further, neither the United States Government nor any of its employees assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed.

Technical comments, suggestions, and product updates are encouraged from interested parties. They may be addressed to the Office of Law Enforcement Standards, National Institute of Standards and Technology, 100 Bureau Drive, Stop 8102, Gaithersburg, MD 20899–8102. It is anticipated that this guide will be updated periodically.

Questions relating to the specific devices included in this document should be addressed directly to the proponent agencies or the equipment manufacturers. Contact information for each equipment item included in this guide can be found in this volume (Vol. IIb).

GUIDE FOR THE SELECTION OF PERSONAL PROTECTIVE EQUIPMENT FOR EMERGENCY FIRST RESPONDERS (PERCUTANEOUS PROTECTION—GARMENTS)

This guide includes information intended to be useful to the emergency first responder community in the selection of personal protective equipment (PPE) that includes chemical and biological protective clothing and respiratory equipment for different applications. This Volume, IIb, of the *Guide for the Selection of Personal Protective Equipment for Emergency First Responders*, includes details on the 180 personal protective equipment items that are referenced in Volume I.

1. INTRODUCTION

The *Guide for the Selection of Personal Protection Equipment for Emergency First Responders* includes information intended to be useful to the emergency first responder community in the selection of PPE (percutaneous and respiratory). Due to the large number of PPE items identified for the guide, the guide is separated into four volumes. Volume I serves as the selection tool for all PPE, while Volume IIa serves as a repository for the respiratory protective data sheets, Volume IIb serves as a repository for the percutaneous protective equipment (garments) data sheets, and Volume IIc serves as a repository for the percutaneous protective equipment (apparel) data sheets.

2. IDENTIFICATION OF PERSONAL PROTECTION EQUIPMENT

An extensive market survey was conducted to identify commercially available personal protective equipment. This market survey encompassed the assessment of past market surveys, identification of new equipment, and interaction with numerous equipment vendors.

2.1 Identification of New Equipment

A variety of sources were utilized to identify commercially available personal protective equipment, including a Commerce Business Daily (CBD) Announcement, literature searches, database searches, Internet searches, technical conferences, and technical contacts. These sources resulted in the identification of 180 personal protective equipment items (garments).

2.2 Vendor Contact

Vendors were contacted three separate times in order to obtain additional product information, as well as to finalize their specific equipment data for inclusion in the guide. An initial contact occurred in the last quarter of 1999, when the manufacturers and vendors were asked to supply detailed information about their products. Each vendor received a facsimile or an electronic mail message that contained the definitions for the data fields. They were asked to supply information on vendor specific personal equipment items corresponding to the data field definitions.

The second contact occurred during the March/April 2000 time period in order to finalize the equipment data sheets and the information contained in the guide. This contact was conducted by facsimile and electronic mail. The vendors were given two weeks to review the information.

The third contact was made during February 2001. Each vendor received a facsimile or an electronic mail message that contained the data sheets for their specific equipment item(s), the selection factors that were developed to assist with the selection and purchase of the most appropriate equipment, and the results of the evaluation of the personal protective equipment against the selection factors. The vendors were asked to review the data sheets and tables for completeness and accuracy of the incorporated data. The vendors were given three weeks to review the information.

3. DATA FIELDS

Appendix E serves as a compendium of commercially available personal protective equipment. Each of the 180 identified personal protective equipment items is detailed within appendix E. Forty-nine data fields, as defined in this section, were used for providing information relating to the personal protective equipment. It is important to note that these data fields were developed using input from the emergency responder community.

The data fields are organized into the following five categories:

- General.
- Operational Parameters.
- Physical Parameters.
- Logistical.
- Special Requirements.

The remainder of this section defines each of the 49 data fields by category.

3.1 General Category

The General category includes the following data fields:

1. Name.
2. ID #.
3. Technology.
4. Stock Number.
5. Protection Type.
6. Equipment Category.
7. Availability.
8. Current User.
9. Manufacturer.
10. Manufacturer Type.
11. Developer.
12. Source.
13. Certification.

Each of these data fields is defined in more detail in the remainder of this section.

3.1.1 Name

The Name data field is used to identify the name of the equipment.

3.1.2 ID #

The ID # data field is for identification purposes only.

3.1.3 Technology

The Technology data field identifies the material or process by which a piece or suite of equipment supplies protection from chemical (CW agents and TIMs), biological agents, and nuclear particulates. Percutaneous protection is generally afforded by material technologies (such as carbon sphere materials, selectively-permeable or semi-permeable materials) or finish/treatment or coating add-ons (such as a water-repellant coating, an electrostatic finish, or a reactive coating).

3.1.4 Stock Number

The Stock Number data field includes the stock identification or national stock number, if the item has one.

3.1.5 Protection Type

The Protection Type data field identifies whether the equipment provides percutaneous (skin) and/or respiratory protection.

3.1.6 Equipment Category

The Equipment Category data field identifies if the equipment is SCBA, PAPR, tethered air, canister, etc.

3.1.7 Availability

The Availability data field refers to how readily available a piece of equipment is (e.g., how long it takes to receive equipment upon purchasing) or availability status of the equipment (e.g., commercial availability).

3.1.8 Current User

The Current User data field is used to identify organizations that are currently using the piece of equipment.

3.1.9 Manufacturer

The Manufacturer data field identifies the company that manufactured the piece of equipment (to include the name, address, telephone number, and point-of-contact).

3.1.10 Manufacturer Type

The Manufacturer Type data field indicates whether the manufacturer is domestic or foreign.

3.1.11 Developer

The Developer data field identifies the organization that developed the item. This may be relevant when the developer is the government and the responsible technical agency may need to be identified.

3.1.12 Source

The Source data field indicates where the equipment information was obtained. Potential sources include past market surveys and Internet web sites.

3.1.13 Certification

The Certification data field identifies the agency certifying the system for use (i.e., OSHA, NIOSH, NFPA, etc.), if any.

3.2 Operational Parameters Category

The Operational Parameters Category includes the following five data fields:

1. Chemical Warfare (CW) Agents Protection.
2. Biological Warfare (BW) Agents Protection.
3. Toxic Industrial Material (TIMs) Protection.
4. Duration of Protection.
5. Recommended Use(s).

Each of these data fields is defined in more detail in the remainder of this section.

3.2.1 Chemical Warfare (CW) Agents Protection

The Chemical Warfare Agents Protection data field indicates the type of chemical warfare (CW) agent. The most common types of classic CW agents are the nerve and blister agents. Nerve agents include GA (Tabun), GB (Sarin), GD (Soman), GF, and VX. Blister agents include H and HD (Sulfur Mustards), HN (Nitrogen Mustard), and L (Lewisite).

3.2.2 Biological Warfare (BW) Agents Protection

The Biological Warfare (BW) Agents Protection data field indicates the type of biological warfare (BW) agent. Classical BW agent types include bacteria (Anthrax), rickettsia (Typhus), toxins (Botulinum Toxin), and viruses (Q Fever).

3.2.3 Toxic Industrial Material (TIMs) Protection

The Toxic Industrial Material (TIMs) Protection data field indicates the type of toxic industrial material (TIM) agent. TIMs are used in a variety of settings such as manufacturing facilities, maintenance areas, and storage areas. TIMs are further characterized by using a high, medium,

or low hazard index. Examples of TIMs are ammonia, carbon monoxide, chlorine, hydrogen cyanide, phosgene, and mineral acids (i.e., hydrochloric acid, sulfuric acid, nitric acid, etc.).

3.2.4 Duration of Protection

The Duration of Protection data field indicates the amount of time the equipment provides adequate protection. Since duration varies depending on the concentration of agent, type of agent, and environmental conditions, duration will be given with respect to specific conditions.

3.2.5 Recommended Use(s)

The Recommended Use(s) data field identifies the areas where the equipment is most likely to be used per vendor or manufacturer recommendation (e.g., tactical operations, crisis management, etc.).

3.3 Physical Parameters Category

The Physical Parameters Category includes the following data fields:

1. Sizes Available.
2. Weight.
3. Package Size and Volume.
4. Power Requirements.
5. Material Type (Percutaneous).
6. Construction Type (Percutaneous).
7. Color.

Each of these data fields is defined in more detail in the remainder of this section.

3.3.1 Size Available

The Size Available data field provides available sizes for an item, to include both male and female when appropriate.

3.3.2 Weight

The Weight data field indicates the total weight of the equipment/system.

3.3.3 Package Size and Volume

The Package Size and Volume data field provides the external dimensions of the system when packaged (for storage and transportability).

3.3.4 Power Requirements

The Power Requirements data field indicates the type of power (ac, dc, etc.) required to operate the equipment. This category applies primarily to respiratory, respiratory support equipment, and heating/cooling systems.

3.3.5 Material Type (Percutaneous)

The Material Type data field refers to the material content of the suit and the level of impermeability (i.e., impermeable, selectively permeable, or permeable). Note if the protective clothing is fire retardant or contains thermoplastic material (could potentially burn the wearer).

3.3.6 Construction Type (Percutaneous)

The Construction Type data field indicates how seams are sealed. This data field applies primarily to percutaneous equipment.

3.3.7 Color

The Color data field indicates if equipment has camouflage capability (signature reduction). Color can help identify job type.

3.4 Logistical Parameters Category

The Logistical Parameters category includes the following data fields:

1. Ease of Use.
2. Consumables.
3. Maintenance Requirements.
4. Shelf Life.
5. Transportability.
6. Operational Limitations.
7. Environmental Conditions.
8. Unit Cost.
9. Maintenance Cost.
10. Warranty.
11. Don/Doff Information.
12. Use/Reuse.
13. Launderability (Percutaneous).
14. Accessories.

Each of these data fields is defined in more detail in the remainder of this section.

3.4.1 Ease of Use

Ease of Use is the mobility and flexibility of an individual while wearing the equipment as well as the compatibility of the equipment with other equipment.

3.4.2 Consumables

Consumables are the supplies used during operation and storage. Examples of consumables are batteries, canisters, hoses, etc.

3.4.3 Maintenance Requirements

Maintenance Requirements are the services and parts required to keep the system at its peak operational readiness (e.g., preventative maintenance) and the frequency of required maintenance (e.g., after use, quarterly, annually, etc.)

3.4.4 Shelf Life

Shelf Life is the length of time a piece of equipment can be stored before it needs to be replaced. Shelf life information should include the recommended storage procedure and any factors that decrease shelf life (e.g., UV, and critical temperature).

3.4.5 Transportability

Transportability is the ability of the equipment to be transported, including any support equipment (e.g., respiratory equipment and heating/cooling systems).

3.4.6 Operational Limitations

Operational Limitations refer to the length of time responders can safely work at various temperatures (i.e., 50 °F, 70 °F, and 90 °F) and the availability/compatibility of cooling systems to help manage heat stress.

3.4.7 Environmental Conditions

Environmental Conditions indicate whether the equipment is designed for use in all common outdoor weather conditions and climates (e.g., rain, snow, extreme temperatures, and humidity) or only under relatively controlled conditions.

3.4.8 Unit Cost

Unit Cost is the cost of a complete system, including support equipment and operating costs (i.e., consumables).

3.4.9 Maintenance Cost

Maintenance Cost is the cost required to maintain the system at its operational readiness. This cost will be based on equipment usage rates.

3.4.10 Warranty

The Warranty is the length of time a piece of equipment is guaranteed by the manufacturer, including the terms of the warranty (parts and labor).

3.4.11 Don/Doff Information

The Don/Doff Information indicates whether the system requires assistance for donning and/or doffing and the average time for this activity.

3.4.12 Use/Reuse

Use/Reuse indicates the need for any part of the equipment to be discarded after use or its ability to be reused. The data field includes the procedures used to decontaminate and/or dispose of used equipment.

3.4.13 Launderability (Percutaneous)

Launderability includes the laundering procedures that are safe for the item, including the number of times the suit can be laundered and remain efficacious. Also, launderability includes any special procedures needed for specific components.

3.4.14 Accessories

Accessories include those items that are provided with the basic equipment.

3.5 Special Requirements Category

The Special Requirements Category includes the following data fields:

1. Training Requirements.
2. Training Available.
3. Manuals Available.
4. Surveillance Testing Requirements.
5. Support Equipment.
6. Testing Information.
7. Applicable Regulations.
8. Health Hazards.
9. Communications Interface Capability.
10. EOD Compatibility.

Each of these data fields is defined in more detail in the remainder of this section.

3.5.1 Training Requirements

The Training Requirements data field refers to the amount of instruction time the operator needs to become proficient in using a piece of equipment.

3.5.2 Training Available

The Training Available data field refers to training available from the manufacturer. This includes any initial training and recertification training that is available.

3.5.3 Manuals Available

The Manuals Available data field indicates the types of manuals available from the manufacturer (e.g., user manuals, training documentation, etc.).

3.5.4 Surveillance Testing Requirements

The Surveillance Testing Requirements data field specifies the testing required to keep a piece of equipment at its operational readiness (e.g., inspecting respiratory masks or suits for holes or tears).

3.5.5 Support Equipment

The Support Equipment data field refers to any additional equipment required to operate the primary unit.

3.5.6 Testing Information

The Testing Information data field includes any test data obtained from the manufacturer and other sources regarding any part of the equipment (e.g., validation testing including materials and ensemble testing such as abrasion, tear, wear, burst, and permeation testing).

3.5.7 Applicable Regulations

The Applicable Regulations data field includes any government and/or safety regulations that may apply to the possession, use, or storage of any part of the system.

3.5.8 Health Hazards

The Health Hazards data field identifies all materials that possess a potential health hazard.

3.5.9 Communications Interface Capability

The Communications Interface Capability data field refers to the ability of the personal protective equipment to interface with a communications system (network capability, hardwire capability, RF communication, etc.).

3.5.10 EOD Compatibility

The EOD Compatibility data field is the ability of the equipment to be used with EOD systems (i.e., suits). For example, a CB protective suit and respirator are required to be worn with an EOD suit in a CB environment.

APPENDIX A—REFERENCES

APPENDIX A—REFERENCES

1. Armando S. Bevelacqua and Richard H. Stilp, *Terrorism Handbook for Operational Responders*, Emergency Film Group, Edgartown, MA, January 1998.
2. Robert E. Hunt, Timothy Hayes, and Warren B. Carroll, *Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident*, Battelle, Columbus, OH, September 1999.
3. A.K. Stuempfle, D.J. Howells, S.J. Armour, and C.A. Boulet, *International Task Force 25: Hazard from Industrial Chemicals Final Report*, Edgewood Research Development and Engineering Center, Aberdeen Proving Ground, MD, AD-B236562, ERDEC-SP-061, April 1998.
4. *Responding to A Biological or Chemical Threat: A Practical Guide*, U.S. Department of State, Bureau of Diplomatic Security, Washington, DC, 1996.
5. *2000 Emergency Response Guidebook, A Guidebook for First Responders During the Initial Phase of a Dangerous Goods/Hazardous Materials Incident*, U.S. Department of Transportation, Research and Special Programs Administration, Tempest Publishing, Alexandria, VA, January 2000.
6. *Potential Military Chemical/Biological Agents and Compounds*, FM 3-9, AFR 355-7, NAVFAC P-467, Army Chemical School, Ft. McClellan, AL, December 12, 1990.
7. *Guidelines for Incident Commander's Use of Firefighter Protective Ensemble (FFPE) with Self Contained Breathing Apparatus (SCBA) for Rescue Operations During a Terrorist Chemical Agent Incident*, U.S. Army Soldier and Biological Chemical Command (SBCCOM) Domestic Preparedness Chemical Team, Aberdeen Proving Ground, MD, April 30, 1999.
8. Richard B. Belmonte, *Tests of Level A Suits—Protection Against Chemical and Biological Warfare Agents and Simulants: Executive Summary*, Soldier and Biological Chemical Command (SBCCOM), SCBRD-EN, Aberdeen Proving Ground, MD, June 1998.
9. Robert S. Lindsay, *Test Results of Level B Suits to Challenge by Chemical and Biological Warfare Agents and Simulants: Summary Report*, Soldier and Biological Chemical Command (SBCCOM), AMSSB-REN, Aberdeen Proving Ground, MD, April 1999.

**APPENDIX B—INDEX BY PERCUTANEOUS PROTECTIVE
EQUIPMENT (GARMENTS) IDENTIFICATION NUMBER**

Index by Percutaneous Protective Equipment (Garments) Identification Number

ID # Percutaneous PPE (Garments) Name	Manufacturer	Page E- #
1 STEPO Chemical Protective Suit	Chemfab Corporation	1
2 Tychem [®] 10000 Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	4
3 Tychem [®] 10000 Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	7
4 Tychem [®] 10000 Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	10
5 Tychem [®] 10000 Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	13
6 Tychem [®] 10000 EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	16
7 Tychem [®] 10000 EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	19
8 Tychem [®] 10000 EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	22
9 Tychem [®] 10000 EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	25
10 Tychem [®] BR Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	28
11 Tychem [®] BR Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	31
12 Tychem [®] BR Commander Level A Fully Encapsulating	DuPont Tyvek [®] Protective Apparel	34
13 Tychem [®] BR Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	37
14 Tychem [®] BR EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	40
15 Tychem [®] BR EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	43
16 Tychem [®] BR EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	46
17 Tychem [®] BR EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	49
18 Tychem [®] TK Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	52
19 Tychem [®] TK Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	55
20 Tychem [®] TK Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	58

ID #	Percutaneous PPE (Garments) Name	Manufacturer	Page E- #
21	Tychem® TK Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	61
22	Tychem® TK EX Commander Brigade Level A Ensemble, NFPA 1991 certified	DuPont Tyvek® Protective Apparel	64
23	Tychem® TK EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	67
24	Tychem® TK EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	70
25	Tychem® TK EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	73
26	Tychem® TK EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	76
27	Tychem® 10000 Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	79
28	Tychem® 10000 Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	82
29	Tychem® 10000 Deluxe Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	85
30	Tyvek® Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	88
31	Tychem® QC Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	91
32	Tychem® SL Utility Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	94
33	Tychem® SL Utility Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	97
34	Tychem® SL Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	100
35	Tychem® SL Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	103
36	Tychem® QC Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	106
37	Tychem® BR Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	109
38	Tychem® BR Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	112
39	Tychem® BR Deluxe Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	115
40	Tychem® TK Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	118

<i>ID #</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page E- #</i>
41	Tychem [®] TK Level B Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	121
42	Tychem [®] TK Deluxe Level B Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	124
43	Disposable Toxicological Agent Protective Suit (DTAP)/Level A	GEOMET Technologies, Inc.	127
44	Disposable Toxicological Agent Protective Suit (DTAP)/Level B	GEOMET Technologies, Inc.	130
45	EUROLITE NBC-Protection Suit	Goetzloff GmbH	133
46	Chemtursion [®] Suit: Model 13 Level A (SCBA)	ILC Dover, Inc.	136
47	Chemtursion [®] Suit: Model 35 Level A Laboratory Suit	ILC Dover, Inc.	139
48	Chemtursion [®] Suit: Ready 1 Model 91 Level A Limited Use	ILC Dover, Inc.	142
49	Chemtursion [®] Suit: Model 84 Level A Total Encapsulating Suit	ILC Dover, Inc.	145
50	IPE (Individual Protection Equipment)	Irvin Aerospace Canada Ltd.	148
51	Kappler Responder [®] Total Encapsulating Level A Suit (Gas-Tight)	Kappler Safety Group	151
52	Kappler Responder [®] Total Encapsulating Level A Suit	Kappler Safety Group	155
53	Kappler Total Encapsulating Level A suit	Kappler Safety Group	159
54	Kappler Responder [®] Plus Total Encapsulating Level A suit	Kappler Safety Group	163
55	Kappler Responder [®] Total Encapsulating Level A Suit, NFPA 1991 (Vapor Protective)	Kappler Safety Group	167
56	Kappler Total Encapsulating Level B Suit	Kappler Safety Group	171
57	Kappler CPF 3 Total Encapsulating Level B Suit	Kappler Safety Group	175
58	Kappler Responder [®] Total Encapsulating Level B Suit (Liquid Protective)	Kappler Safety Group	179
59	Kappler CPF 4 Total Encapsulating Level B Suit	Kappler Safety Group	183
60	Kappler CPF 4 Total Encapsulating Level B Suit	Kappler Safety Group	187
61	Kappler Responder [®] Total Encapsulating Level B Suit (liquid protective)	Kappler Safety Group	191

<i>ID #</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page E- #</i>
62	Kappler Responder [®] CSM OSHA Level A	Kappler Safety Group	195
63	Kappler Responder [®] CSM OSHA Level B	Kappler Safety Group	198
64	Lakeland Tychem [®] 10000 NFPA Certified Level A Ensemble	Lakeland Industries, Inc.	201
65	Lakeland Tychem [®] 10000 Level A Ensemble	Lakeland Industries, Inc.	204
66	Lakeland Tychem [®] 10000 Economy Level A Encapsulated Suit	Lakeland Industries, Inc.	207
67	Lakeland Tychem [®] 10000 Economy Level A Encapsulated Suit	Lakeland Industries, Inc.	210
68	Lakeland Tychem [®] 10000 Level A Suit	Lakeland Industries, Inc.	213
69	Lakeland Tychem [®] 9400 Level B Encapsulated Suit	Lakeland Industries, Inc.	216
70	Lakeland Tychem [®] 9400 Level B Encapsulated Suit	Lakeland Industries, Inc.	219
71	Lakeland Tychem [®] SL Level B Encapsulated Suit	Lakeland Industries, Inc.	222
72	Lakeland Tychem [®] 10000 Level B Encapsulated Suit	Lakeland Industries, Inc.	225
73	Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	228
74	C-Cover S-89 One Piece NBC Protective Overgarment	New Pac Safety AB	231
75	C-Cover S/89N	New Pac Safety AB	234
76	C-Cover Dress S-97 NBC Protective Overgarment	New Pac Safety AB	237
77	Saratoga HAMMER Suit	Tex-Shield, Inc.	240
78	Saratoga Joint Service Lightweight Integrated Suit (JSLIST)	Tex-Shield, Inc.	243
79	Trelchem [®] High Performance Suit (HPS) Level A	Trelleborg Industries	246
80	Trelchem [®] TLU (Limited Use) Level A	Trelleborg Industries	249
81	Trelchem [®] Vapor Barrier Suit (VPI) Level A	Trelleborg Industries	252
82	Trelchem [®] Vapor Barrier Suit (VPS) Level A	Trelleborg Industries	255
83	Disposable Toxicological Agent Protective Suit (DTAPS)/Level C1	GEOMET Technologies, Inc.	258
84	Disposable Toxicological Agent Protective Suit (DTAPS)/Level C2	GEOMET Technologies, Inc.	261

<i>ID # Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page E- #</i>
85 Demilitarization Protective Ensembles (DPEs)	Vinyl Technology, Inc.	264
86 "Hot" Operation: Air-Fed Garments	Vinyl Technology, Inc.	267
87 CCA_DuPont Tyvek® F Coveralls	CCA and DuPont Europe	269
88 Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	272
89 Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	275
90 Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	278
91 Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	281
92 Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	284
93 Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	287
94 Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	290
95 Tyvek® Coverall	DuPont Tyvek® Protective Apparel	293
96 Tyvek® Coverall	DuPont Tyvek® Protective Apparel	296
97 Tyvek® Coverall	DuPont Tyvek® Protective Apparel	299
98 Tyvek® Coverall	DuPont Tyvek® Protective Apparel	302
99 Tyvek® Coverall	DuPont Tyvek® Protective Apparel	305
100 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	308
101 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	311
102 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	314
103 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	317
104 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	320
105 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	323
106 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	326
107 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	329
108 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	332
109 Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	335
110 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	338
111 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	341
112 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	344
113 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	347
114 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	350
115 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	353
116 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	356
117 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	359
118 Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	362

<i>ID # Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page E- #</i>
119 Tychem [®] SL Coverall	DuPont Tyvek [®] Protective Apparel	365
120 Tychem [®] QC Coverall	DuPont Tyvek [®] Protective Apparel	368
121 Tychem [®] QC Coverall	DuPont Tyvek [®] Protective Apparel	371
122 Tychem [®] QC Coverall	DuPont Tyvek [®] Protective Apparel	374
123 Tychem [®] QC Coverall	DuPont Tyvek [®] Protective Apparel	377
124 Tychem [®] QC Coverall	DuPont Tyvek [®] Protective Apparel	380
125 Tychem [®] BR Coverall	DuPont Tyvek [®] Protective Apparel	383
126 Tychem [®] BR Coverall	DuPont Tyvek [®] Protective Apparel	386
127 Tychem [®] BR Coverall	DuPont Tyvek [®] Protective Apparel	389
128 Tychem [®] BR Coverall	DuPont Tyvek [®] Protective Apparel	392
129 Tychem [®] BR Coverall	DuPont Tyvek [®] Protective Apparel	395
130 Tychem [®] BR Coverall	DuPont Tyvek [®] Protective Apparel	398
131 Tychem [®] BR Coverall	DuPont Tyvek [®] Protective Apparel	401
132 Tychem [®] TK Coverall	DuPont Tyvek [®] Protective Apparel	404
133 Tychem [®] TK Coverall	DuPont Tyvek [®] Protective Apparel	407
134 Tychem [®] TK Coverall	DuPont Tyvek [®] Protective Apparel	410
135 Tychem [®] TK Coverall	DuPont Tyvek [®] Protective Apparel	413
136 Tychem [®] TK Coverall	DuPont Tyvek [®] Protective Apparel	416
137 Tychem [®] TK Coverall	DuPont Tyvek [®] Protective Apparel	419
138 Tychem [®] TK Coverall	DuPont Tyvek [®] Protective Apparel	422
139 Kappler Coverall	Kappler Safety Group	425
140 Kappler Coverall	Kappler Safety Group	428
141 Kappler CPF 3 Coverall	Kappler Safety Group	432
142 Kappler Responder [®] Level B Coverall	Kappler Safety Group	436
143 Kappler Responder [®] Level B Coverall	Kappler Safety Group	440
144 Kappler Responder [®] Level B Coverall	Kappler Safety Group	444
145 Kappler Ensemble, EPA Level A	Kappler Safety Group	448
146 Kappler CPF 4 Coverall	Kappler Safety Group	451
147 Kappler CPF 3 Coverall	Kappler Safety Group	455
148 Kappler CPF 4 Coverall	Kappler Safety Group	459
149 Kappler CPF 3 Coverall	Kappler Safety Group	463
150 Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	467
151 Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	470

<i>ID #</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page E- #</i>
152	Lakeland Tychem® 10000 Level B Coverall	Lakeland Industries, Inc.	473
153	Lakeland Tychem® 10000 Level B Coverall	Lakeland Industries, Inc.	476
154	Lakeland Tychem® 10000 Level B Coverall	Lakeland Industries, Inc.	479
155	Lakeland Tychem® 10000 Level B Coverall	Lakeland Industries, Inc.	482
156	Lakeland Tychem® 10000 Level B Coverall	Lakeland Industries, Inc.	485
157	Lakeland Tychem® 10000 Level B Coverall	Lakeland Industries, Inc.	488
158	Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	491
159	Lakeland Tyvek QC Level B Coverall	Lakeland Industries, Inc.	494
160	Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	497
161	Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	500
162	Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	503
163	Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	506
164	Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	509
165	Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	512
166	Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	515
167	Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	518
168	Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	521
169	Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	524
170	Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	527
171	Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	530
172	Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	533
173	Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	536
174	Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	539
175	Chemical Protective Overgarments (CPO)	LANX Fabric Systems	542
176	U.S. Air Force Saratoga CWU-66/P Coverall	Tex-Shield, Inc.	545
177	CB Incident Emergency Escape Kit	EAI Corporation	548
178	SEA Tyvek® “F” Suit Level B	SEA	551
179	NewPac CEMI COVER DRESS C/91	New Pac Safety AB	554
180	NewPac First Responder PPE Kit	New Pac Safety AB	557

**APPENDIX C—INDEX BY PERCUTANEOUS PROTECTIVE
EQUIPMENT (GARMENTS) NAME**

Index by Percutaneous Protective Equipment (Garments) Name

<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
CB Incident Emergency Escape Kit	EAI Corporation	177	548
CCA_DuPont Tyvek® F Coveralls	CCA and DuPont Europe	87	269
C-Cover Dress S-97 NBC Protective Overgarment	New Pac Safety AB	76	237
C-Cover S/89N	New Pac Safety AB	75	234
C-Cover S-89 One Piece NBC Protective Overgarment	New Pac Safety AB	74	231
Chemical Protective Overgarments (CPO)	LANX Fabric Systems	175	542
Chemtursion® Suit: Model 13 Level A (SCBA)	ILC Dover, Inc.	46	136
Chemtursion® Suit: Model 35 Level A Laboratory Suit	ILC Dover, Inc.	47	139
Chemtursion® Suit: Model 84 Level A Total Encapsulating Suit	ILC Dover, Inc.	49	145
Chemtursion® Suit: Ready 1 Model 91 Level A Limited Use	ILC Dover, Inc.	48	142
Demilitarization Protective Ensembles (DPEs)	Vinyl Technology, Inc.	85	264
Disposable Toxicological Agent Protective Suit (DTAP)/Level A	GEOMET Technologies, Inc.	43	127
Disposable Toxicological Agent Protective Suit (DTAP)/Level B	GEOMET Technologies, Inc.	44	130
Disposable Toxicological Agent Protective Suit (DTAPS)/Level C1	GEOMET Technologies, Inc.	83	258
Disposable Toxicological Agent Protective Suit (DTAPS)/Level C2	GEOMET Technologies, Inc.	84	261
EUROLITE NBC-Protection Suit	Goetzloff GmbH	45	133
"Hot" Operation: Air-Fed Garments	Vinyl Technology, Inc.	86	267
IPE (Individual Protection Equipment)	Irvin Aerospace Canada Ltd.	50	148
Kappler Coverall	Kappler Safety Group	139	425
Kappler Coverall	Kappler Safety Group	140	428
Kappler CPF 3 Coverall	Kappler Safety Group	141	432
Kappler CPF 3 Coverall	Kappler Safety Group	147	455
Kappler CPF 3 Coverall	Kappler Safety Group	149	463
Kappler CPF 3 Total Encapsulating Level B Suit	Kappler Safety Group	57	175
Kappler CPF 4 Coverall	Kappler Safety Group	146	451
Kappler CPF 4 Coverall	Kappler Safety Group	148	459

<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
Kappler CPF 4 Total Encapsulating Level B Suit	Kappler Safety Group	59	183
Kappler CPF 4 Total Encapsulating Level B Suit	Kappler Safety Group	60	187
Kappler Ensemble, EPA Level A	Kappler Safety Group	145	448
Kappler Responder [®] CSM OSHA Level A	Kappler Safety Group	62	195
Kappler Responder [®] CSM OSHA Level B	Kappler Safety Group	63	198
Kappler Responder [®] Level B Coverall	Kappler Safety Group	142	436
Kappler Responder [®] Level B Coverall	Kappler Safety Group	143	440
Kappler Responder [®] Level B Coverall	Kappler Safety Group	144	444
Kappler Responder [®] Plus Total Encapsulating Level A suit	Kappler Safety Group	54	163
Kappler Responder [®] Total Encapsulating Level A Suit	Kappler Safety Group	52	155
Kappler Responder [®] Total Encapsulating Level A Suit (Gas-tight)	Kappler Safety Group	51	151
Kappler Responder [®] Total Encapsulating Level A Suit, NFPA 1991 (Vapor Protective)	Kappler Safety Group	55	167
Kappler Responder [®] Total Encapsulating Level B Suit (Liquid Protective)	Kappler Safety Group	58	179
Kappler Responder [®] Total Encapsulating Level B Suit (liquid protective)	Kappler Safety Group	61	191
Kappler Total Encapsulating Level A suit	Kappler Safety Group	53	159
Kappler Total Encapsulating Level B Suit	Kappler Safety Group	56	171
Lakeland Tychem [®] 10000 Economy Level A Encapsulated Suit	Lakeland Industries, Inc.	66	207
Lakeland Tychem [®] 10000 Economy Level A Encapsulated Suit	Lakeland Industries, Inc.	67	210
Lakeland Tychem [®] 10000 Level A Ensemble	Lakeland Industries, Inc.	65	204
Lakeland Tychem [®] 10000 Level A Suit	Lakeland Industries, Inc.	68	213
Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	73	228
Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	150	467
Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	151	470
Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	152	473
Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	153	476
Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	154	479
Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	155	482
Lakeland Tychem [®] 10000 Level B Coverall	Lakeland Industries, Inc.	156	485

<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
Lakeland Tychem® 10000 Level B Coverall	Lakeland Industries, Inc.	157	488
Lakeland Tychem® 10000 Level B Encapsulated Suit	Lakeland Industries, Inc.	72	225
Lakeland Tychem® 10000 NFPA Certified Level A Ensemble	Lakeland Industries, Inc.	64	201
Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	170	527
Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	171	530
Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	172	533
Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	173	536
Lakeland Tychem® 9400 Level B Coverall	Lakeland Industries, Inc.	174	539
Lakeland Tychem® 9400 Level B Encapsulated Suit	Lakeland Industries, Inc.	69	216
Lakeland Tychem® 9400 Level B Encapsulated Suit	Lakeland Industries, Inc.	70	219
Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	164	509
Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	165	512
Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	166	515
Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	167	518
Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	168	521
Lakeland Tychem® SL Level B Coverall	Lakeland Industries, Inc.	169	524
Lakeland Tychem® SL Level B Encapsulated Suit	Lakeland Industries, Inc.	71	222
Lakeland Tyvek QC Level B Coverall	Lakeland Industries, Inc.	159	494
Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	158	491
Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	160	497
Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	161	500
Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	162	503
Lakeland Tyvek® QC Level B Coverall	Lakeland Industries, Inc.	163	506
Saratoga HAMMER Suit	Tex-Shield, Inc.	77	240
Saratoga Joint Service Lightweight Integrated Suit (JSLIST)	Tex-Shield, Inc.	78	243
STEPO Chemical Protective Suit	Chemfab Corporation	1	1
Trellchem® High Performance Suit (HPS) Level A	Trelleborg Industries	79	246
Trellchem® TLU (Limited Use) Level A	Trelleborg Industries	80	249
Trellchem® Vapor Barrier Suit (VPI) Level A	Trelleborg Industries	81	252

<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
Trellechem® Vapor Barrier Suit (VPS) Level A	Trelleborg Industries	82	255
Tychem® 10000 Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	2	4
Tychem® 10000 Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	3	7
Tychem® 10000 Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	4	10
Tychem® 10000 Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	5	13
Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	88	272
Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	89	275
Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	90	278
Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	91	281
Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	92	284
Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	93	287
Tychem® 10000 Coverall	DuPont Tyvek® Protective Apparel	94	290
Tychem® 10000 Deluxe Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	29	85
Tychem® 10000 EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	6	16
Tychem® 10000 EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	7	19
Tychem® 10000 EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	8	22
Tychem® 10000 EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	9	25
Tychem® 10000 Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	27	79
Tychem® 10000 Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	28	82
Tychem® BR Commander Level A Fully Encapsulating	DuPont Tyvek® Protective Apparel	12	34

<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
Tychem® BR Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	10	28
Tychem® BR Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	11	31
Tychem® BR Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	13	37
Tychem® BR Coverall	DuPont Tyvek® Protective Apparel	125	383
Tychem® BR Coverall	DuPont Tyvek® Protective Apparel	126	386
Tychem® BR Coverall	DuPont Tyvek® Protective Apparel	127	389
Tychem® BR Coverall	DuPont Tyvek® Protective Apparel	128	392
Tychem® BR Coverall	DuPont Tyvek® Protective Apparel	129	395
Tychem® BR Coverall	DuPont Tyvek® Protective Apparel	130	398
Tychem® BR Coverall	DuPont Tyvek® Protective Apparel	131	401
Tychem® BR Deluxe Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	39	115
Tychem® BR EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	14	40
Tychem® BR EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	15	43
Tychem® BR EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	16	46
Tychem® BR EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	17	49
Tychem® BR Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	37	109
Tychem® BR Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	38	112
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	104	320
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	100	308
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	101	311

<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	102	314
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	103	317
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	105	323
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	106	326
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	107	329
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	108	332
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	109	335
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	120	368
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	121	371
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	122	374
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	123	377
Tychem® QC Coverall	DuPont Tyvek® Protective Apparel	124	380
Tychem® QC Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	31	91
Tychem® QC Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	36	106
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	110	338
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	111	341
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	112	344
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	113	347
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	114	350
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	115	353
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	116	356

<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	117	359
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	118	362
Tychem® SL Coverall	DuPont Tyvek® Protective Apparel	119	365
Tychem® SL Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	34	100
Tychem® SL Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	35	103
Tychem® SL Utility Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	32	94
Tychem® SL Utility Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	33	97
Tychem® TK Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	18	52
Tychem® TK Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	19	55
Tychem® TK Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	20	58
Tychem® TK Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	21	61
Tychem® TK Coverall	DuPont Tyvek® Protective Apparel	132	404
Tychem® TK Coverall	DuPont Tyvek® Protective Apparel	133	407
Tychem® TK Coverall	DuPont Tyvek® Protective Apparel	134	410
Tychem® TK Coverall	DuPont Tyvek® Protective Apparel	135	413
Tychem® TK Coverall	DuPont Tyvek® Protective Apparel	136	416
Tychem® TK Coverall	DuPont Tyvek® Protective Apparel	137	419
Tychem® TK Coverall	DuPont Tyvek® Protective Apparel	138	422
Tychem® TK Deluxe Level B Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	42	124
Tychem® TK EX Commander Brigade Level A Ensemble, NFPA 1991 certified	DuPont Tyvek® Protective Apparel	22	64
Tychem® TK EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek® Protective Apparel	23	67

<i>Percutaneous PPE (Garments) Name</i>	<i>Manufacturer</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
Tychem [®] TK EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	24	70
Tychem [®] TK EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	25	73
Tychem [®] TK EX Commander Level A Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	26	76
Tychem [®] TK Level B Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	40	118
Tychem [®] TK Level B Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	41	121
Tyvek [®] Coverall	DuPont Tyvek [®] Protective Apparel	95	293
Tyvek [®] Coverall	DuPont Tyvek [®] Protective Apparel	96	296
Tyvek [®] Coverall	DuPont Tyvek [®] Protective Apparel	97	299
Tyvek [®] Coverall	DuPont Tyvek [®] Protective Apparel	98	302
Tyvek [®] Coverall	DuPont Tyvek [®] Protective Apparel	99	305
Tyvek [®] Level B Fully Encapsulating Suit	DuPont Tyvek [®] Protective Apparel	30	88
US Air Force Saratoga CWU-66/P Coverall	Tex-Shield, Inc.	176	545
SEA Tyvek [®] “F” Suit Level B	SEA	178	551
NewPac CEMI COVER DRESS C/91	New Pac Safety AB	179	554
NewPac First Responder PPE Kit	New Pac Safety AB	180	557

**APPENDIX D—INDEX BY PERCUTANEOUS PROTECTIVE
EQUIPMENT (GARMENTS) MANUFACTURER**

Index by Percutaneous Protective Equipment (Garments) Manufacturer

<i>Manufacturer</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>Page</i>
		<i>ID # E- #</i>
CCA and DuPont Europe	CCA_DuPont Tyvek® F Coveralls	87 269
Chemfab Corporation	STEPO Chemical Protective Suit	1 1
DuPont Tyvek® Protective Apparel	Tychem® 10000 Commander Level A Fully Encapsulating Suit	2 4
DuPont Tyvek® Protective Apparel	Tychem® 10000 Commander Level A Fully Encapsulating Suit	3 7
DuPont Tyvek® Protective Apparel	Tychem® 10000 Commander Level A Fully Encapsulating Suit	4 10
DuPont Tyvek® Protective Apparel	Tychem® 10000 Commander Level A Fully Encapsulating Suit	5 13
DuPont Tyvek® Protective Apparel	Tychem® 10000 Coverall	88 272
DuPont Tyvek® Protective Apparel	Tychem® 10000 Coverall	89 275
DuPont Tyvek® Protective Apparel	Tychem® 10000 Coverall	90 278
DuPont Tyvek® Protective Apparel	Tychem® 10000 Coverall	91 281
DuPont Tyvek® Protective Apparel	Tychem® 10000 Coverall	92 284
DuPont Tyvek® Protective Apparel	Tychem® 10000 Coverall	93 287
DuPont Tyvek® Protective Apparel	Tychem® 10000 Coverall	94 290
DuPont Tyvek® Protective Apparel	Tychem® 10000 Deluxe Level B Fully Encapsulating Suit	29 85
DuPont Tyvek® Protective Apparel	Tychem® 10000 EX Commander Level A Fully Encapsulating Suit	6 16
DuPont Tyvek® Protective Apparel	Tychem® 10000 EX Commander Level A Fully Encapsulating Suit	7 19
DuPont Tyvek® Protective Apparel	Tychem® 10000 EX Commander Level A Fully Encapsulating Suit	8 22
DuPont Tyvek® Protective Apparel	Tychem® 10000 EX Commander Level A Fully Encapsulating Suit	9 25
DuPont Tyvek® Protective Apparel	Tychem® 10000 Level B Fully Encapsulating Suit	27 79
DuPont Tyvek® Protective Apparel	Tychem® 10000 Level B Fully Encapsulating Suit	28 82
DuPont Tyvek® Protective Apparel	Tychem® BR Commander Level A Fully Encapsulating	12 34
DuPont Tyvek® Protective Apparel	Tychem® BR Commander Level A Fully Encapsulating Suit	10 28
DuPont Tyvek® Protective Apparel	Tychem® BR Commander Level A Fully Encapsulating Suit	11 31
DuPont Tyvek® Protective Apparel	Tychem® BR Commander Level A Fully Encapsulating Suit	13 37

<i>Manufacturer</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>ID #</i>	<i>Page E- #</i>
DuPont Tyvek® Protective Apparel	Tychem® BR Coverall	125	383
DuPont Tyvek® Protective Apparel	Tychem® BR Coverall	126	386
DuPont Tyvek® Protective Apparel	Tychem® BR Coverall	127	389
DuPont Tyvek® Protective Apparel	Tychem® BR Coverall	128	392
DuPont Tyvek® Protective Apparel	Tychem® BR Coverall	129	395
DuPont Tyvek® Protective Apparel	Tychem® BR Coverall	130	398
DuPont Tyvek® Protective Apparel	Tychem® BR Coverall	131	401
DuPont Tyvek® Protective Apparel	Tychem® BR Deluxe Level B Fully Encapsulating Suit	39	115
DuPont Tyvek® Protective Apparel	Tychem® BR EX Commander Level A Fully Encapsulating Suit	14	40
DuPont Tyvek® Protective Apparel	Tychem® BR EX Commander Level A Fully Encapsulating Suit	15	43
DuPont Tyvek® Protective Apparel	Tychem® BR EX Commander Level A Fully Encapsulating Suit	16	46
DuPont Tyvek® Protective Apparel	Tychem® BR EX Commander Level A Fully Encapsulating Suit	17	49
DuPont Tyvek® Protective Apparel	Tychem® BR Level B Fully Encapsulating Suit	37	109
DuPont Tyvek® Protective Apparel	Tychem® BR Level B Fully Encapsulating Suit	38	112
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	104	320
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	100	308
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	101	311
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	102	314
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	103	317
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	105	323
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	106	326
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	107	329
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	108	332
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	109	335
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	120	368
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	121	371
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	122	374
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	123	377
DuPont Tyvek® Protective Apparel	Tychem® QC Coverall	124	380

<i>Manufacturer</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>ID #</i>	<i>Page E- #</i>
DuPont Tyvek® Protective Apparel	Tychem® QC Level B Fully Encapsulating Suit	31	91
DuPont Tyvek® Protective Apparel	Tychem® QC Level B Fully Encapsulating Suit	36	106
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	110	338
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	111	341
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	112	344
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	113	347
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	114	350
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	115	353
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	116	356
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	117	359
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	118	362
DuPont Tyvek® Protective Apparel	Tychem® SL Coverall	119	365
DuPont Tyvek® Protective Apparel	Tychem® SL Level B Fully Encapsulating Suit	34	100
DuPont Tyvek® Protective Apparel	Tychem® SL Level B Fully Encapsulating Suit	35	103
DuPont Tyvek® Protective Apparel	Tychem® SL Utility Level B Fully Encapsulating Suit	32	94
DuPont Tyvek® Protective Apparel	Tychem® SL Utility Level B Fully Encapsulating Suit	33	97
DuPont Tyvek® Protective Apparel	Tychem® TK Commander Level A Fully Encapsulating Suit	18	52
DuPont Tyvek® Protective Apparel	Tychem® TK Commander Level A Fully Encapsulating Suit	19	55
DuPont Tyvek® Protective Apparel	Tychem® TK Commander Level A Fully Encapsulating Suit	20	58
DuPont Tyvek® Protective Apparel	Tychem® TK Commander Level A Fully Encapsulating Suit	21	61
DuPont Tyvek® Protective Apparel	Tychem® TK Coverall	132	404
DuPont Tyvek® Protective Apparel	Tychem® TK Coverall	133	407
DuPont Tyvek® Protective Apparel	Tychem® TK Coverall	134	410
DuPont Tyvek® Protective Apparel	Tychem® TK Coverall	135	413
DuPont Tyvek® Protective Apparel	Tychem® TK Coverall	136	416
DuPont Tyvek® Protective Apparel	Tychem® TK Coverall	137	419
DuPont Tyvek® Protective Apparel	Tychem® TK Coverall	138	422
DuPont Tyvek® Protective Apparel	Tychem® TK Deluxe Level B Fully Encapsulating Suit	42	124

<i>Manufacturer</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>ID #</i>	<i>Page E- #</i>
DuPont Tyvek® Protective Apparel	Tychem® TK EX Commander Brigade Level A Ensemble, NFPA 1991 certified	22	64
DuPont Tyvek® Protective Apparel	Tychem® TK EX Commander Level A Fully Encapsulating Suit	23	67
DuPont Tyvek® Protective Apparel	Tychem® TK EX Commander Level A Fully Encapsulating Suit	24	70
DuPont Tyvek® Protective Apparel	Tychem® TK EX Commander Level A Fully Encapsulating Suit	25	73
DuPont Tyvek® Protective Apparel	Tychem® TK EX Commander Level A Fully Encapsulating Suit	26	76
DuPont Tyvek® Protective Apparel	Tychem® TK Level B Fully Encapsulating Suit	40	118
DuPont Tyvek® Protective Apparel	Tychem® TK Level B Fully Encapsulating Suit	41	121
DuPont Tyvek® Protective Apparel	Tyvek® Coverall	95	293
DuPont Tyvek® Protective Apparel	Tyvek® Coverall	96	296
DuPont Tyvek® Protective Apparel	Tyvek® Coverall	97	299
DuPont Tyvek® Protective Apparel	Tyvek® Coverall	98	302
DuPont Tyvek® Protective Apparel	Tyvek® Coverall	99	305
DuPont Tyvek® Protective Apparel	Tyvek® Level B Fully Encapsulating Suit	30	88
EAI Corporation	CB Incident Emergency Escape Kit	177	548
GEOMET Technologies, Inc.	Disposable Toxicological Agent Protective Suit (DTAP)/Level A	43	127
GEOMET Technologies, Inc.	Disposable Toxicological Agent Protective Suit (DTAP)/Level B	44	130
GEOMET Technologies, Inc.	Disposable Toxicological Agent Protective Suit (DTAPS)/Level C1	83	258
GEOMET Technologies, Inc.	Disposable Toxicological Agent Protective Suit (DTAPS)/Level C2	84	261
Goetzloff GmbH	EUROLITE NBC-Protection Suit	45	133
ILC Dover, Inc.	Chemtursion® Suit: Model 13 Level A (SCBA)	46	136
ILC Dover, Inc.	Chemtursion® Suit: Model 35 Level A Laboratory Suit	47	139
ILC Dover, Inc.	Chemtursion® Suit: Model 84 Level A Total Encapsulating Suit	49	145
ILC Dover, Inc.	Chemtursion® Suit: Ready 1 Model 91 Level A Limited Use	48	142
Irvin Aerospace Canada Ltd.	IPE (Individual Protection Equipment)	50	148

<i>Manufacturer</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>ID #</i>	<i>Page E- #</i>
Kappler Safety Group	Kappler Coverall	139	425
Kappler Safety Group	Kappler Coverall	140	428
Kappler Safety Group	Kappler CPF 3 Coverall	141	432
Kappler Safety Group	Kappler CPF 3 Coverall	147	455
Kappler Safety Group	Kappler CPF 3 Coverall	149	463
Kappler Safety Group	Kappler CPF 3 Total Encapsulating Level B Suit	57	175
Kappler Safety Group	Kappler CPF 4 Coverall	146	451
Kappler Safety Group	Kappler CPF 4 Coverall	148	459
Kappler Safety Group	Kappler CPF 4 Total Encapsulating Level B Suit	59	183
Kappler Safety Group	Kappler CPF 4 Total Encapsulating Level B Suit	60	187
Kappler Safety Group	Kappler Ensemble, EPA Level A	145	448
Kappler Safety Group	Kappler Responder [®] CSM OSHA Level A	62	195
Kappler Safety Group	Kappler Responder [®] CSM OSHA Level B	63	198
Kappler Safety Group	Kappler Responder [®] Level B Coverall	142	436
Kappler Safety Group	Kappler Responder [®] Level B Coverall	143	440
Kappler Safety Group	Kappler Responder [®] Level B Coverall	144	444
Kappler Safety Group	Kappler Responder [®] Plus Total Encapsulating Level A suit	54	163
Kappler Safety Group	Kappler Responder [®] Total Encapsulating Level A Suit	52	155
Kappler Safety Group	Kappler Responder [®] Total Encapsulating Level A Suit (Gas-Tight)	51	151
Kappler Safety Group	Kappler Responder [®] Total Encapsulating Level A Suit, NFPA 1991 (Vapor Protective)	55	167
Kappler Safety Group	Kappler Responder [®] Total Encapsulating Level B Suit (Liquid Protective)	58	179
Kappler Safety Group	Kappler Responder [®] Total Encapsulating Level B Suit (Liquid Protective)	61	191
Kappler Safety Group	Kappler Total Encapsulating Level A Suit	53	159
Kappler Safety Group	Kappler Total Encapsulating Level B Suit	56	171

<i>Manufacturer</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>ID #</i>	<i>Page E- #</i>
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Economy Level A Encapsulated Suit	66	207
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Economy Level A Encapsulated Suit	67	210
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level A Ensemble	65	204
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level A Suit	68	213
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	73	228
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	150	467
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	151	470
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	152	473
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	153	476
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	154	479
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	155	482
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	156	485
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Coverall	157	488
Lakeland Industries, Inc.	Lakeland Tychem® 10000 Level B Encapsulated Suit	72	225
Lakeland Industries, Inc.	Lakeland Tychem® 10000 NFPA Certified Level A Ensemble	64	201
Lakeland Industries, Inc.	Lakeland Tychem® 9400 Level B Coverall	170	527
Lakeland Industries, Inc.	Lakeland Tychem® 9400 Level B Coverall	171	530
Lakeland Industries, Inc.	Lakeland Tychem® 9400 Level B Coverall	172	533
Lakeland Industries, Inc.	Lakeland Tychem® 9400 Level B Coverall	173	536
Lakeland Industries, Inc.	Lakeland Tychem® 9400 Level B Coverall	174	539
Lakeland Industries, Inc.	Lakeland Tychem® 9400 Level B Encapsulated Suit	69	216
Lakeland Industries, Inc.	Lakeland Tychem® 9400 Level B Encapsulated Suit	70	219

<i>Manufacturer</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>ID #</i>	<i>Page E- #</i>
Lakeland Industries, Inc.	Lakeland Tychem [®] SL Level B Coverall	164	509
Lakeland Industries, Inc.	Lakeland Tychem [®] SL Level B Coverall	165	512
Lakeland Industries, Inc.	Lakeland Tychem [®] SL Level B Coverall	166	515
Lakeland Industries, Inc.	Lakeland Tychem [®] SL Level B Coverall	167	518
Lakeland Industries, Inc.	Lakeland Tychem [®] SL Level B Coverall	168	521
Lakeland Industries, Inc.	Lakeland Tychem [®] SL Level B Coverall	169	524
Lakeland Industries, Inc.	Lakeland Tychem [®] SL Level B Encapsulated Suit	71	222
Lakeland Industries, Inc.	Lakeland Tyvek QC Level B Coverall	159	494
Lakeland Industries, Inc.	Lakeland Tyvek [®] QC Level B Coverall	158	491
Lakeland Industries, Inc.	Lakeland Tyvek [®] QC Level B Coverall	160	497
Lakeland Industries, Inc.	Lakeland Tyvek [®] QC Level B Coverall	161	500
Lakeland Industries, Inc.	Lakeland Tyvek [®] QC Level B Coverall	162	503
Lakeland Industries, Inc.	Lakeland Tyvek [®] QC Level B Coverall	163	506
LANX Fabric Systems	Chemical Protective Overgarments (CPO)	175	542
New Pac Safety AB	C-Cover Dress S-97 NBC Protective Overgarment	76	237
New Pac Safety AB	C-Cover S/89N	75	234
New Pac Safety AB	C-Cover S-89 One Piece NBC Protective Overgarment	74	231
Tex-Shield, Inc.	Saratoga HAMMER Suit	77	240
Tex-Shield, Inc.	Saratoga Joint Service Lightweight Integrated Suit (JSLIST)	78	243
Tex-Shield, Inc.	US Air Force Saratoga CWU-66/P Coverall	176	545
Trelleborg Industries	Trellchem [®] High Performance Suit (HPS) Level A	79	246
Trelleborg Industries	Trellchem [®] TLU (Limited Use) Level A	80	249
Trelleborg Industries	Trellchem [®] Vapor Barrier Suit (VPI) Level A	81	252
Trelleborg Industries	Trellchem [®] Vapor Barrier Suit (VPS) Level A	82	255
Vinyl Technology, Inc.	"Hot" Operation: Air-Fed Garments	86	267

<i>Manufacturer</i>	<i>Percutaneous PPE (Garments) Name</i>	<i>Page</i>	
		<i>ID #</i>	<i>E- #</i>
Vinyl Technology, Inc.	Demilitarization Protective Ensembles (DPEs)	85	264
SEA	SEA Tyvek® “F” Suit Level B	178	551
New Pac Safety AB	NewPac CEMI COVER DRESS C/91	179	554
New Pac Safety AB	NewPac First Responder PPE Kit	180	557

**APPENDIX E—PERCUTANEOUS PROTECTIVE EQUIPMENT
(GARMENTS) DATA SHEETS**

Personal Protective Equipment (Percutaneous—Garments)

General

Name

ID# 1

STEPO Chemical Protective Suit (Totally Encapsulating)



Technology

Impermeable; primary material: fluoropolymer/aramid fiber multi-laminate; reinforcement patches: fluoropolymer/glass fiber multi-laminate; visor: FEP with PVC overlay; glove: Neoprene/butyl

Stock Number

Small (S): 8415-01-452-6772
Medium (M): 8415-01-452-8631
Large (L): 8415-01-454-1627
X-large (XL): 8415-01-452-8629

Protection Type

Level A, Percutaneous

Equipment Category

Totally encapsulating suit is compatible with variety of SCBAs (open and closed circuit), a personal ice cooling system (PICS) and communications equipment

Availability

Fielding in process (December 1999 through July 2002). Army EOD units, technical escort units and chemical storage sites will be fielded equipment

Current User(s)

EOD Units, Technical Escort Units, and Chemical Activities

Manufacturer

Chemfab Corporation
701 Daniel Webster Highway
Merrimack, NH 03054
603-424-9000 (Tel)
POC: Mark Weber (Program Manager)

Manufacturer Type

Domestic

Developer

GEOMET Technologies, Inc., Germantown, MD and Natick Research Development and Engineering Center (NRDEC), Kansas Street, Natick, MA

Source

GEOMET Technologies, Inc.

Certification

Type Classified by U.S. Army, 1997

Operational Parameters

Chemical Warfare (CW)

Nerve: GB and VX; blister: HD and L

Agents Protected Against

Biological Warfare (BW) Agents Protected Against	No testing conducted against BW agents. However, the suit is designed to protect against CW agents and industrial chemicals, therefore it is a safe assumption that the suit, when worn with a supplied air respirator, will provide exceptional protection against BW agents.
Toxic Industrial Materials (TIMs) Protected Against	Suit tested against industrial chemicals listed in NFPA 1991, 1994 edition (ASTM F1001). Suit also will provide protection from phosgene, hydrazine, caustic soda, diesel fuel, kerosene, JP-4, and DS2.
Duration of Protection	Four (4) h mission duration. May be reused five times after exposure to CW agent vapor and decontamination. If exposed to CW agent liquid must be decontaminated for disposal. Otherwise, may be reused as long as visual inspection and pressure test criteria is met.
Recommended Use(s)	For use in unknown, highly toxic, oxygen deficient and IDLH environments where the highest level of respiratory and percutaneous protection is required
<u>Physical Parameters</u>	
Sizes Available	4 sizes: S, M, L, and XL
Weight	14 lb
Package Size and Volume	24 in x 24 in x 12 in
Power Requirements	None
Material Type	Impermeable; primary material: fluoropolymer/aramid fiber multi-laminate; reinforcement patches: fluoropolymer/glass fiber multi-laminate; visor: FEP with PVC overlay; glove: neoprene/butyl
Construction Type	Heat sealed seams with heat sealed fluoropolymer over tape
Color	Light gray exterior and beige interior
<u>Logistical Parameters</u>	
Ease of Use	Totally encapsulating suit is compatible with variety of SCBAs (open and closed circuit), a personal ice cooling system (PICS) and communications equipment
Consumables	Paraffin wax to lubricate zipper. Cleaning/sanitizing supplies.
Maintenance Requirements	Cleaning/sanitizing, visual inspection, zipper lubrication, and pressure test
Shelf Life	None determined
Transportability	Hard case (polyethylene) holds two suits or soft carry bag (holds one suit). Pressure test kit and patch kit also in molded plastic cases.
Operational Limitations	Approved for use from -20 °F to +125 °F. Local SOP will determine any other restrictions. Moderately durable.
Environmental Conditions	Contaminated suits must be decontaminated and disposed of in accordance with established procedures, regulations and laws
Unit Cost	Suit: 1 to 10, \$5K; 11 to 45, \$4.7K; 46 to 200, \$4.2K; 201 to 500, \$4.2K; Pressure Test Kit: \$1.5K; Patch Kit: \$399 (all prices subject to change)

Maintenance Cost	Five man hours per year use and eight man hours per year for quarterly test and inspection (based on information in TM 10–8415–231–12&P Maintenance Allocation Chart)
Warranty	1 yr
Don/Doff Information	One assistant required for donning. System can be doffed by user, however, an assistant would be beneficial.
Use/Reuse	Reusable. Exception: when exposed to CW agent liquid suit must be decontaminated for disposal.
Launderability	Decon in accordance with DA PAM 385–61 and AR 385–61. Do not use DS2 for decontamination if suit is to be reused. May be reused five times after exposure to CW agent vapor and decontamination. If exposed to CW agent liquid must be decontaminated for disposal. Not machine washable. Launder in tubs using nonphosphate soap and warm water.
Accessories	Laminate glove liner, neoprene socks, and coolant pass-through
<u>Special Requirements</u>	
Training Requirements	Minimum of 8 h for operation. Additional 8 h for maintenance
Training Available	Yes
Manuals Available	Technical Manual TM 10–8415–231–12&P developed under government contract to support operation and maintenance of suit
Surveillance Testing Requirements	Visual Inspection and pressure test, IAW TM 10–8415–231–12&P
Support Equipment	Pressure test kit and patch kit available to maintain suit. Breathing Apparatus and Personal Ice Cooling System is required to put system into operation. Suit is compatible with 4 h, closed circuit rebreather, open-circuit SCBA, and SCBA with tethered air supply hose. Suit is also compatible with communications equipment.
Testing Information	NFPA data available from manufacture. CW agent data available from NRDEC (see attachment for data summary)
Applicable Regulations	EPA and Army Regulations. Safety precautions are identified in TM 10–8415–231–12&P.
Health Hazards	MSDS sheet available for suit material. The patching procedure is a heat-sealing process that may create fumes. Patching should be done in a ventilated area.
Communications Interface Capability	Yes. Compatible with radio systems utilizing ear microphone/speakers, throat microphones, and other microphones and speakers that integrate with respiratory protective face masks.
EOD Compatibility	Yes. Specifically designed for EOD units and toxic munitions handlers.

General

Name
ID# 2

Tychem® 10000 Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100FAB (front entry)
100RAB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, fully encapsulating, Barrier®/Butyl dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$782

Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, s. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 3

Tychem® 10000 Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100FAV (front entry)
100RAV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, fully encapsulating, Barrier®/Viton dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$8.2K
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials

Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 4

Tychem® 10000 Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100FB (front entry)
100RB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, fully encapsulating, Barrier®/Butyl dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$782
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 5

Tychem® 10000 Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100FV (front entry)
100RV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, fully encapsulating, Barrier®/Viton dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$818
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 6

Tychem® 10000 EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100XFAB (front entry)
100XRAB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® Pana-Vu view face shield, fully encapsulating, Barrier®/Butyl dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$973
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Laundryability	Not applicable. Not intended for re-use after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 7

Tychem® 10000 EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100XFAV (front entry)
100XRAV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® Pana-Vu view face shield, fully encapsulating, Barrier®/Viton dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L).
For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$1K
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel .
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 8

Tychem[®] 10000 EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100XFB (front entry)
100XRB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon[®] Pana-Vu view face shield, fully encapsulating, Barrier[®]/Butyl dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$973
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Laundryability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel .
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 9

Tychem® 10000 EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100XFV (front entry)
100XRV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® Pana-Vu view face shield, fully encapsulating, Barrier®/Viton dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$1K
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel .
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 10

Tychem[®] BR Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95FAB (front entry)
95RAB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon[®] face shield, fully encapsulating, Barrier[®]/Butyl dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$573
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 11

Tychem® BR Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95FAV (front entry)
95RAV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, fully encapsulating, Barrier®/Viton dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$600
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 12

Tychem[®] BR Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95FB (front entry)
95RB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon[®] face shield, fully encapsulating, Barrier[®]/Butyl dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$573
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.1 oz/yd ² Thickness (ASTM D1777–64) 17 mils Mullen burst (ASTM D3786–87) 110 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 107/71 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 47/27 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 13

Tychem® BR Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95FV (front entry)
95RV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, fully encapsulating, Barrier®/Viton dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$600
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 14

Tychem® BR EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95XFAB (front entry)
95XRAB (rear entry)

Protection Type
Equipment Category

Level A, Percutaneous
Level A, fully encapsulating, PVC/Teflon® Pana-Vu view face shield, fully encapsulating, Barrier®/Butyl dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800–558–9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand service at 800–558–9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$764
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 15

Tychem® BR EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95XFAV (front entry)
95XRVA (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® Pana-Vu face shield, fully encapsulating, Barrier®/Viton dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$764
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Laundryability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 16

Tychem® BR EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95XFB (front entry)
95XRB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® Pana-Vu view face shield, fully encapsulating, Barrier®/Butyl dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$764
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 17

Tychem® BR EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95XFV (front entry)
95XRV (rear entry)

Protection Type
Equipment Category

Level A, Percutaneous
Level A, fully encapsulating, PVC/Teflon® Pana-Vu view face shield, fully encapsulating, Barrier®/Viton dual glove system, expanded back for SCBA

Availability
Current User(s)

Commercially available
U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

Chemical Warfare (CW)
Agents Protected Against

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW)
Agents Protected Against

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against

A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m²
GB, HD, and VX: Greater than 12 h at 100 g/m² (total coverage)
L: Greater than 2 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Hot zone entry, crisis management, remediation, and gross decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

11 lb/ctn and 1 unit/ctn

Package Size and Volume

22 in L x 22 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow or olive drab

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.

Consumables

None

Maintenance Requirements

Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$782
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 18

Tychem® TK Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKFAB (front entry)
TKRAB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, Barrier®/Butyl dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GB, HD, VX, and L: Greater than 12 h at 100 g/m² (total coverage)
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Hot zone entry, crisis management, remediation, and gross decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

11 lb/ctn and 1 unit/ctn

Package Size and Volume

22 in L x 22 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.

Consumables

None

Maintenance Requirements

Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$1K
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 19

Tychem[®] TK Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKFAV (front entry)
TKRAV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon[®] face shield, fully encapsulating, Barrier[®]/Viton dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$818
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 20

Tychem® TK Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKFB (front entry)
TKRB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, fully encapsulating, Barrier®/Butyl dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$782
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 21

Tychem[®] TK Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKFV (front entry)
TKRV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon[®] face shield, fully encapsulating, Barrier[®]/Viton dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$818
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Laundryability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem[®] TK EX Commander Brigade Level A Ensemble, NFPA 1991 certified

ID# 22



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKXF91 (front entry)
TKXR91 (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, ensemble, NFPA 1991 certified, with aluminized fiberglass overcover, expanded back for SCBA, (Pana-Vu face shield)

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

NFPA 1991-2000 edition certified

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	16 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$2.1K
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 to 3 min. Average doffing time is less than 1 min.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 23

Tychem® TK EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKXFAB (front entry)
TKXRAB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® Pana-Vu view face shield, fully encapsulating, Barrier®/Butyl dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$973
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Laundryability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 24

Tychem® TK EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKXFAV (front entry)
TKXRVA (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon® face shield, fully encapsulating, Barrier®/Viton dual glove system, flat back for external air supply

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$1K
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, eye/face, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 25

Tychem[®] TK EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKXFB (front entry)
TKXRB (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon[®] Pana-Vu view face shield, fully encapsulating, Barrier[®]/Butyl dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$973
Maintenance Cost	Minimum labor cost for routine suit inspection

Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Laundryability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 26

Tychem[®] TK EX Commander Level A Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TKXFV (front entry)
TKXRV (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, fully encapsulating, PVC/Teflon[®] Pana-Vu view face shield, fully encapsulating, Barrier[®]/Viton dual glove system, expanded back for SCBA

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Will meet the requirements of NFPA 1992-2000 edition

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Hot zone entry, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	11 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond Max seam—sewn and taped both inside and out. This seam construction combines outstanding strength with excellent chemical/vapor protection.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection and pressure test (ASTM F1052), upon receipt and every 6 mo thereafter. Visual inspection prior to use.
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$1K
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears), and pressure testing (ASTM F1052) every 6 mo
Support Equipment	Appropriate respiratory, foot, eye/face, and head protection. Pressure test kit.
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 27

Tychem[®] 10000 Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100132 (front entry)
100133 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, flat back for external air supply, PVC face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, and gross decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

5 lb/ctn and 1 unit/ctn

Package Size and Volume

15 3/4 in L x 15 3/4 in W x 14 1/4 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.

Consumables

None

Maintenance Requirements

Visual inspection prior to use.

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$219

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 28

Tychem[®] 10000 Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100135 (front entry)
100635 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, expanded back for SCBA, and PVC face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, and remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

5 lb/ctn and 1 unit/ctn

Package Size and Volume

15 3/4 in L x 15 3/4 in W x 14 1/4 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$258
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 29

Tychem® 10000 Deluxe Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics. Pictured is stock # 100135.

Stock Number

100136 (front entry)
100636 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, expanded back for SCBA, and PVC/Teflon® face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Not specified
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	8 lb/ctn and 1 unit/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$290
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 30

Tyvek® Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

14132 (front entry)
14133 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, flat back for external air supply, and polyester face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel .

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel . No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

4 lb/ctn and 4 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$145/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided the garment is not contaminated with hazardous or toxic materials.
Launderability	Not applicable. Not intended for reuse after exposure to hazardous materials.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776-85) 1.2 oz/yd ² Thickness (ASTM D1777-64) 5.3 mils Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6 Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1 Tongue tear, lb (ASTM D2261 (MD/CD) Barrier data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 31

Tychem[®] QC Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

37132 (front entry)
37133 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, flat back for external air supply, polyester face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon), medical triage, and remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

2 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

Yellow, grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$68/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 32

Tychem[®] SL Utility Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

41132 (front entry)
41133 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, flat back for external air supply, and PVC face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

5 lb/ctn and 1 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$85

Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 33

Tychem[®] SL Utility Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

41135 (front entry)
41635 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, expanded back for SCBA, and PVC face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against	A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time VX: Greater than 12 h at 10 g/m ² GB and L: Greater than 6 h at 10 g/m ² D: Greater than 3 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, and decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	5 lb/ctn and 1 unit/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	White
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$90
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 34

Tychem[®] SL Level B Fully Encapsulating Suit



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number 42132 (front entry)
42133 (rear entry)

Protection Type Level B, Percutaneous

Equipment Category Level B, fully encapsulating, flat back for external air supply, and PVC face shield

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against** Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against** Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

2 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$99/carton

Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 35

Tychem[®] SL Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

42135 (front entry)
42635 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, expanded back for SCBA, and PVC face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

3 lb/ctn and 1 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$59

Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 36

Tychem[®] QC Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

63132 (front entry)
63133 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, flat back for external air supply, and polyester face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against	Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel . No test data available for CW agents.
Recommended Use(s)	Crisis management (post decon), medical triage, and remediation
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	5 lb/ctn and 1 unit/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow, grey
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$71

Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 37

Tychem[®] BR Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95132 (front entry)
95133 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, flat back for external air supply, and PVC face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m²
GB, HD, and VX: Greater than 12 h at 100 g/m² (total coverage)
L: Greater than 2 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, and gross decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

5 lb/ctn and 1 unit/ctn

Package Size and Volume

15 3/4 in L x 15 3/4 in W x 14 1/4 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow or olive drab

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$144
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 38

Tychem[®] BR Level B Fully Encapsulating Suit



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number 95135 (front entry)
95635 (rear entry)

Protection Type Level B, Percutaneous

Equipment Category Level B, fully encapsulating, expanded back for SCBA, and PVC face shield

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification Not applicable

Operational Parameters

Chemical Warfare (CW) Agents Protected Against Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against Not specified

Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	5 lb/ctn and 1 unit/ctn
Package Size and Volume	15 3/4 in L x 15 3/4 in W x 14 1/4 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$177

Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 39

Tychem® BR Deluxe Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95136 (front entry)
95636 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, expanded back for SCBA, and PVC/Teflon® face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against	Not specified
Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	6 lb/ctn and 1 units/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$210
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 40

Tychem[®] TK Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TK132 (front entry)
TK133 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, flat back for external air supply, and PVC face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against Toxic Industrial Materials (TIMs) Protected Against	Not specified Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, and gross decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	5 lb/ctn and 1 unit/ctn
Package Size and Volume	15 3/4 in L x 15 3/4 in W x 14 1/4 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Fittings available for most commercially available pass-throughs.
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost	\$219
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	Suit bag included. Pass-throughs available. Must be ordered separately.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 41

Tychem® TK Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TK135 (front entry)
TK635 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, expanded back for SCBA, and PVC face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, and gross decontamination
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	5 lb/ctn and 1 unit/ctn
Package Size and Volume	15 3/4 in L x 15 3/4 in W x 14 1/4 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$258
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials

Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 42

Tychem[®] TK Deluxe Level B Fully Encapsulating Suit



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TK136 (front entry)
TK636 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, expanded back for SCBA, and PVC/Teflon[®] face shield

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

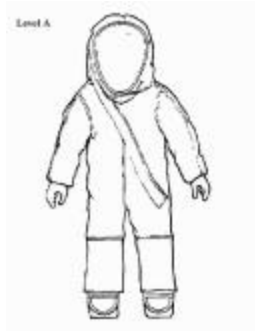
Biological Warfare (BW) Agents Protected Against	Not specified
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, and gross decontamination
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	8 lb/ctn and 1 units/ctn
Package Size and Volume	22 in L x 22 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$290
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	Instructions for Don/Doff are included with each suit. Assistance required for donning and doffing. Average donning time 2 min and 2 s. Average doffing time is 33 s.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Technical data package and permeation guide with each suit
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lb Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lb Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 43

Disposable Toxicological Agent Protective Suit (DTAP)/Level A



Technology DuPont Barricade, an impermeable nonwoven multi-laminate material

Stock Number GEOMET P/N 38277

Protection Type Level A, Percutaneous, and respiratory

Equipment Category Level A toxicological agent protective suit, disposable

Availability 1 July 2001

Current User(s) Not applicable

Manufacturer GEOMET Technologies, Inc.
20251 Century Blvd., Suite 300
Germantown, MD 20874
POC: Jef Harris
301-428-9898 (Tel)
301-428-9482 (Fax)

Manufacturer Type Domestic

Developer GEOMET Technologies, Inc., Germantown, MD, under contract with the Office of Special Technology

Source www.nbcprotect.com

Certification Projected to be certified under NFPA 1994 and approved by the U.S. Army Material Command Chemical Agent Safety and Health Policy Action Committee (CASHPAC) for military use

Operational Parameters

Chemical Warfare (CW) Agents Protected Against Material swatches tested against GA, GB, GD, GF, t-HD, HN, L, and VX

Biological Warfare (BW) Agents Protected Against Material is protective against bacteria, protozoans, rickettsia, toxins, and viruses. Biopenetration resistance testing in accordance with ASTM F 1671, Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Blood-Borne Pathogens Using Phi-X174 Bacteriophage Penetration as a Test System.

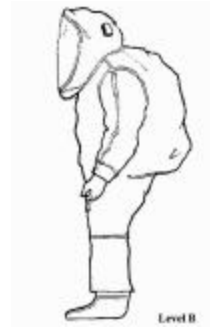
Toxic Industrial Materials (TIMs) Protected Against	Material is protective against the 21 chemicals listed in ASTM F 1001 and numerous other TIMs. For specific chemicals, refer to DuPont's Permeation Guide for Tychem Fabrics and the DuPont Tyvek Fax-on-Demand Data Service (800-558-9329).
Duration of Protection	Over 8 h for most chemicals
Recommended Use(s)	Military, Federal, State and local first responders to CB incidents, including IDLH and confined space entry and mitigation operations
<u>Physical Parameters</u>	
Sizes Available	S, M, L, XL, XXL, and XXXL
Weight	Approximately 5 lb 6 oz for size small up to 6 lb for size XXXL
Package Size and Volume	From 24 in x 20 in x 9 in (2.5 ft ³) for size small to 29 in x 23 in x 10 in (to 3.86 ft ³) for size XXXL
Power Requirements	None; optional cooling system requires three size D alkaline batteries, which will last up to 4 h
Material Type	5 mil Tychem DP, which is an impermeable nonwoven multi-laminant material
Construction Type	Sewn and seams heat sealed with overtape
Color	Olive drab green
<u>Logistical Parameters</u>	
Ease of Use	Level A DTAP suit features fully integrated sub-systems. Restrictions on mobility and flexibility include those normally associated with wearing an SCBA.
Consumables	None; if using optional cooling system, three size D alkaline batteries and ice are consumable items
Maintenance Requirements	None
Shelf Life	5 yr—Store at room temperature
Transportability	Suit will be sealed in a plastic bag
Operational Limitations	Operations are limited by the air capacity of the SCBA. Operations can be extended up to 4 h by using a rebreather with the optional cooling system to manage heat stress.
Environmental Conditions	The equipment is designed to operate under all common environmental conditions and climates; use is primarily limited by the SCBA operational parameters
Unit Cost	\$494 to \$513
Maintenance Cost	None
Warranty	1 yr (parts and labor)

Don/Doff Information	“Buddy” required for donning. System can be doffed by the user.
Use/Reuse	Level A suit is disposable. However, if not contaminated during emergency operations, suit can be downgraded for use as a training suit. Suits must be disposed after any liquid or vapor chemical exposure.
Launderability	Hand wash with mild detergent and biocide after each training use; suit can be laundered and reused as a training suit only.
Accessories	Gloves, integral booties, visor, and antifog compound. Cooling system is available as an option.
<u>Special Requirements</u>	
Training Requirements	2 h for operation
Training Available	Yes
Manuals Available	Commercial operating manual
Surveillance Testing Requirements	None
Support Equipment	Biocide, chemical protective boots, and self-contained breathing apparatus (or rebreather). Level A DTAPS is compatible with all commercial SCBAs and rebreathers (closed circuit systems). Cooling system is available as an option, which requires ice or a freezer to freeze ice bottles. Also, the Communications-Applied Technology intrinsically-safe DWIS radio system is available as an option.
Testing Information	U.S. Army methyl salicylate (MeS) man-in-simulant test (MIST, TOP 10–2–022); passed ASTM Spray Test (ASTM F 1359–97); passed NFPA 1991, Overall Ensemble Inward Leakage Test [sulfur hexafluoride (SF6) test]; ASTM D 3786 Mullen burst = 190 psi; ASTM D 5034 Breaking strength–Grab (md/cd) = 99/95 lb; ASTM D 1117 Tearing strength–Trapezoid (md/cd) = 25/24 lb; ASTM D 751 = 45 lbf; ASTM D 2582 = 11 lbf; ASTM D 747 = 0.50 in-lbf
Applicable Regulations	29 CFR 1910.120
Health Hazards	All materials are considered non-hazardous. MSDS on Tychem DP material available upon request. Contaminated suits should be treated as hazardous waste and must be disposed of in accordance with established procedures, regulations, and laws. Contaminated garments should be landfilled, but can be incinerated.
Communications Interface Capability	Level A DTAPS is compatible with various commercial radio systems, such as the optional intrinsically-safe DWIS radio system
EOD Compatibility	Not to be used with fused munitions or in explosive or flammable atmospheres

General

Name
ID# 44

Disposable Toxicological Agent Protective Suit (DTAP)/Level B



Technology DuPont Barricade, an impermeable nonwoven multi-laminate material

Stock Number GEOMET P/N 38278

Protection Type Level B, Percutaneous, and respiratory

Equipment Category Level B toxicological agent protective suit, disposable

Availability 1 July 2001

Current User(s) Not applicable

Manufacturer GEOMET Technologies, Inc.
20251 Century Blvd., Suite 300
Germantown, MD 20874
POC: Jef Harris
301-428-9898 (Tel)
301-428-9482 (Fax)

Manufacturer Type Domestic

Developer GEOMET Technologies, Inc., Germantown, MD, under contract with the Office of Special Technology

Source www.nbcprotect.com

Certification Projected to be certified under NFPA 1994

Operational Parameters

Chemical Warfare (CW) Agents Protected Against Material swatches tested against GA, GB, GD, GF, t-HD, HN, L, and VX

Biological Warfare (BW) Agents Protected Against Material is protective against bacteria, protozoans, rickettsia, toxins, and viruses. Biopenetration resistance testing in accordance with ASTM F 1671, Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Blood-Borne Pathogens Using Phi-X174 Bacteriophage Penetration as a Test System.

Toxic Industrial Materials (TIMs) Protected Against Material is protective against the 21 chemicals listed in ASTM F 1001 and numerous other TIMs. For specific chemicals, refer to DuPont's Permeation Guide for Tychem Fabrics and the DuPont Tyvek Fax-on-Demand Data Service (800-558-9329).

Duration of Protection	Over 8 h for most chemicals
Recommended Use(s)	Military, Federal, State and local first responders to CB incidents, including IDLH and nonconfined space entry and mitigation operations where less skin protection is required than Level A

Physical Parameters

Sizes Available	S, M, L, XL, XXL, and XXXL
Weight	Approximately 5 lb 6 oz for size small up to 6 lb for size XXXL
Package Size and Volume	From 24 in x 20 in x 9 in (2.5 ft ³) for size small to 29 in x 23 in x 10 in (to 3.86 ft ³) for size XXXL
Power Requirements	None; optional cooling system requires three size D alkaline batteries, which will last up to 4 h
Material Type	3 mil Tychem LV, which is an impermeable nonwoven multi-laminant material
Construction Type	Sewn and seams heat sealed with overtape
Color	Olive drab green

Logistical Parameters

Ease of Use	Level B DTAP suit features fully integrated sub-systems. Restrictions on mobility and flexibility include those normally associated with wearing an SCBA.
Consumables	None; if using optional cooling system, three size D alkaline batteries and ice are consumable items
Maintenance Requirements	None
Shelf Life	5 yr—Store at room temperature
Transportability	Suit will be sealed in a plastic bag
Operational Limitations	Operations are limited by the air capacity of the SCBA. Operations can be extended up to 4 h by using a rebreather with the optional cooling system to manage heat stress.
Environmental Conditions	The equipment is designed to operate under all common environmental conditions and climates; use is primarily limited by the SCBA operational parameters
Unit Cost	\$225 to \$300
Maintenance Cost	None
Warranty	1 yr (parts and labor)
Don/DoFF Information	“Buddy” required for donning. System can be doffed by the user.

Use/Reuse	Level B suit is disposable. However, if not contaminated during emergency operations, suit can be downgraded for use as a training suit. Suits must be disposed after any liquid or vapor chemical exposure.
Launderability	Hand wash with mild detergent and biocide after each training use; suit can be laundered and reused as a training suit only
Accessories	Gloves, integral booties, visor, and antifog compound. Cooling system is available as an option.
<u>Special Requirements</u>	
Training Requirements	2 h for operation
Training Available	Yes
Manuals Available	Commercial operating manual
Surveillance Testing Requirements	None
Support Equipment	Biocide, chemical protective boots, and self-contained breathing apparatus (or rebreather). Level B DTAPS is compatible with all commercial SCBAs and rebreathers (closed circuit systems). Cooling system is available as an option, which requires ice or a freezer to freeze ice bottles. Also, the C-AT intrinsically-safe DWIS radio system is available as an option.
Testing Information	U.S. Army methyl salicylate (MeS) man-in-simulant test (MIST, TOP 10–2–022); passed ASTM Spray Test (ASTM F 1359–97); passed NFPA 1991, Overall Ensemble Inward Leakage Test [sulfur hexafluoride (SF6) test]; ASTM D 751 = 35 lbf; ASTM D 258= 7 lbf; ASTM D 747 = 0.50 in-lbf
Applicable Regulations	29 CFR 1910.120
Health Hazards	All materials are considered nonhazardous. MSDS on Tychem LV material available upon request. Contaminated suits should be treated as hazardous waste and must be disposed of in accordance with established procedures, regulations, and laws. Contaminated garments should be landfilled, but can be incinerated.
Communications Interface Capability	Level B DTAPS is compatible with various commercial radio systems, such as the optional intrinsically-safe DWIS radio system
EOD Compatibility	Not to be used with fused munitions or in explosive or flammable atmospheres

General

Name
ID# 45

EUROLITE NBC-Protection Suit

Picture Not Available

Technology

Rolamit-NBC Barrierfilm, a 7-layer polyolefin film laminated in staggered angles with three layers on either side with a middle barrier of EVOH; impermeable; self-extinguishing

Stock Number

Stock number of MoD Austria: 4240-0-775-8701

Protection Type

Percutaneous

Equipment Category

Suit

Availability

In production since 1993

Current User(s)

Various special warfare forces in US. For Navy: Mr. Tim Gill, NBC officer, COMNAVSPECWARCOM, San Diego, tel 619 437 3940; Austrian Army; Swiss Civil Defense; Austrian Telecom; Austrian Ministry of Interior

Manufacturer

Goetzloff GmbH
Schirmerstrasse 28, A-4060
Leonding-Linz, Austria
POC: Mr. Lewis B. Sykes (U.S. Liaison)
703-504-0260 (Tel)
e-mail: LBS1328@aol.com

Manufacturer Type

Foreign

Developer

Goetzloff GmbH

Source

Goetzloff GmbH

Certification

Ministry of Defense, Austria

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Classical nerve and blister agents; test documents can be supplied on request

**Biological Warfare (BW)
Agents Protected Against**

Classical BW agents; test documents can be supplied on request

**Toxic Industrial Materials
(TIMs) Protected Against**

TIMs tested according ASTM F 1001

Duration of Protection

Depends on the situation; e.g., in excess of 24 h against Mustard in worst-case scenarios

Recommended Use(s)

Tactical and crisis management

Physical Parameters

Sizes Available	S, M, L, XL
Weight	650 grams (23 ounces)
Package Size and Volume	7.1 in x 7.1 in x 2 in
Power Requirements	None
Material Type	Rolamit-NBC Barrierfilm, a 7-layer polyolefin film laminated in staggered angles with three layers on either side with a middle barrier of EVOH; impermeable; self-extinguishing
Construction Type	Yes; heat sealed
Color	Standard color is military green, other colors on request
<u>Logistical Parameters</u>	
Ease of Use	User has complete freedom of movement; glove has three fingers
Consumables	None
Maintenance Requirements	None
Shelf Life	Indefinite when stored in original wrapper
Transportability	Not applicable
Operational Limitations	Not specified
Environmental Conditions	Designed to be worn under common environmental conditions found in the field
Unit Cost	\$37/two-piece uniform in lots of 10000 uniforms
Maintenance Cost	None
Warranty	20 yr in unconditioned store
Don/Doff Information	No assistance required for donning or doffing
Use/Reuse	Reusable
Launderability	Can be laundered multiple times with standard detergents and maintain their effectiveness; standard decon procedures can be used
Accessories	None
<u>Special Requirements</u>	
Training Requirements	About 5 min or less for instructor to don and explain features of uniform
Training Available	None required
Manuals Available	None required
Surveillance Testing Requirements	Visual inspection before and after each use

Support Equipment	None
Testing Information	Test data can be obtained on request
Applicable Regulations	Our products are tested by TNO, which certifies NATO standard for our products
Health Hazards	None; incineration results in no toxic residues
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name
ID# 46

Chemturion[®] Suit: Model 13 Level A



Technology

Cloropel[®], an enhanced CPE with improved performance characteristics. Impermeable chlorinated polyethylene. Contains thermoplastic materials, self-extinguishing.

Stock Number

Model 13 SCBA, reusable

Protection Type

Level A, Percutaneous and respiratory (SCBA)

Equipment Category

Level A, suit

Availability

In production since 1980

Current User(s)

Fyr Fyter Sales and Service
608 S. Broad Street
Mobile, AL 36603

Manufacturer

ILC Dover, Inc.
1 Moonwalker Road
Frederica, DE 19946-2080
POC: Rhonda Haller
800-631-9567 (Tel)
302-335-1320 (Fax)

Manufacturer Type

Domestic

Developer

ILC Dover, Inc.

Source

Internet: www.ilcdover.com
E-mail: haller@ilcdover.com

Certification

Not applicable for reusable Level A suits

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, and VX

**Biological Warfare (BW)
Agents Protected Against**

Provides PF of 100000. Suit is air and gas tight, and operates at a positive pressure. A different model (same suit material) is used at Atlanta CDC and Ft. Detrick.

Toxic Industrial Materials (TIMs) Protected Against

Tested against ASTM F1001 list of chemicals and against jet fuels

Duration of Protection

Depends on the chemical challenge

Recommended Use(s)

Valuable for remote HAZMAT spill cleanup. Designed to be worn with a wide range of self-contained breathing systems.

Physical Parameters

Sizes Available	Three sizes: M (5' 3" to 5' 9"), L (5' 7" to 6' 1"), and XL (6' 0" to 6' 5")
Weight	5 lb
Package Size and Volume	22 in x 6 in x 26 in
Power Requirements	Not applicable
Material Type	Impermeable chlorinated polyethylene. Contains thermoplastic materials, self-extinguishing.
Construction Type	RF heat sealed seams
Color	Light blue

Logistical Parameters

Ease of Use	Unrestricted movement, range of motion, and field of view. Lightweight design lessens fatigue.
Consumables	None
Maintenance Requirements	None
Shelf Life	>5 yr
Transportability	Transportable via air, ground, or sea
Operational Limitations	Not specified
Environmental Conditions	Operational: 0 °F to 125 °F. Storage: 0 °F to 165 °F. Resistant and operable in salt fog, high/low humidity, and rain.
Unit Cost	\$1.4K to \$1.6K
Maintenance Cost	\$0
Warranty	90 d on defects in materials and workmanship
Don/Doff Information	Self-donning and doffing
Use/Reuse	Reusable (unlimited)
Launderability	No limit to machine or hand washing. Use mild soap solution.
Accessories	Wrist rings and visor splash shields

Special Requirements

Training Requirements	Very low—follow instructions in user's manual
Training Available	None required
Manuals Available	User's manual included with each suit
Surveillance Testing Requirements	After initial use, perform a pressure test before each use
Support Equipment	Breathing air, gloves, and boots

Testing Information	Available upon request
Applicable Regulations	Not applicable
Health Hazards	None
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name
ID# 47

Chemturion® Suit: Model 35 Level A Laboratory Suit



Technology

Cloropel®, an enhanced CPE with improved performance characteristics. High volume airflow, made possible by multiple exhaust valves, supplies added cooling. Hood contains press-polished optical grade 40 mil vinyl in the visual areas. Internal easement permits head movement for 300° of vision.

Stock Number

Model 35 Laboratory Suit, reusable

Protection Type

Level A, Percutaneous and respiratory

Equipment Category

Level A totally encapsulating biological/chemical protective suit. Suit entry is from the front.

Availability

Not specified

Current User(s)

Not specified

Manufacturer

ILC Dover, Inc.
1 Moonwalker Road
Frederica, DE 19946-2080
POC: Rhonda Haller
800-631-9567 (Tel)
302-335-1320 (Fax)

Manufacturer Type

Domestic

Developer

ILC Dover, Inc

Source

Internet: www.ilcdover.com
E-mail: haller@ilcdover.com

Certification

Not applicable for reusable Level A suits

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, and VX

**Biological Warfare (BW)
Agents Protected Against**

Provides PF of 100000. Suit is air and gas tight, and operates at a positive pressure. Used at Atlanta CDC and Ft. Detrick, as well as pharmaceutical companies.

**Toxic Industrial Materials
(TIMs) Protected Against**

Tested against ASTM F1001 list of chemicals and against jet fuels

Duration of Protection

Depends on the chemical challenge

Recommended Use(s)

Ideal for laboratory and clean use. High visibility hood allows for enhanced vision. Offers >100000 protection factor rating.

Physical Parameters

Sizes Available	The suit is available in four sizes to fit 5' 0" to 66". A belt is added to support optional equipment and to allow for a more conformal fit.
Weight	4 lb
Package Size and Volume	22 in x 6 in x 26 in
Power Requirements	Not applicable
Material Type	Cloropel® (chlorinated polyethylene) an enhanced CPE, 20 mil material. Visor is 40 mil vinyl.
Construction Type	RF heat-sealed seams. Suit is designed to minimize seams and permit user mobility without excessive suit shifting. The seams are dielectrically heat-sealed. The suit incorporates molded wrist cuffs with mating rubber wrist rings for attachment of your own chemical protective gloves. The suit legs terminate in integral booties worn inside your own chemical protective boots. Outer extruded closure in conjunction with inner restraint zipper. Outer extruded closure utilizes two parallel sealing lips, providing an effective penetration barrier.
Color	Blue
<u>Logistical Parameters</u>	
Ease of Use	Unrestricted movement, range of motion, and field of view. Lightweight design lessens fatigue. Internal easement permits head movement for 300° of vision.
Consumables	None
Maintenance Requirements	None
Shelf Life	>5 yr
Transportability	Transportable via air, ground, or sea
Operational Limitations	Not specified
Environmental Conditions	Operational: 0 °F to 125 °F. Storage: 0 °F to 165 F. Resistant and operable in salt fog, high/low humidity, and rain.
Unit Cost	\$2K
Maintenance Cost	\$0
Warranty	90 d on defects in materials and workmanship
Don/Doff Information	Self-donning and doffing
Use/Reuse	Reusable (unlimited)
Launderability	No limit to machine or hand washing. Use mild soap solution.
Accessories	Optional liquid cooling system (ILC COOL VEST* Model 19) is available to be worn under the garment. High purity filters and suit air conditioners are available. Wrist rings and visor splash shields.
<u>Special Requirements</u>	
Training Requirements	Very low—follow instructions in user's manual
Training Available	None required
Manuals Available	User's manual included with each suit

Surveillance Testing Requirements	After initial use, perform a pressure test before each use
Support Equipment	Breathing air, gloves, and boots
Testing Information	Available upon request
Applicable Regulations	Not applicable
Health Hazards	None
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name

Chemturion[®] Suit: Ready 1 Model 91 Level A Chemical Protective Suit

ID# 48



Technology

Multiple-fil and tough substrate composite material—high-barrier fabric. Impermeable, specialty laminate. Ready 1 material may emit low order of toxicity when burning.

Stock Number

Ready 1 Model 91, limited use

Protection Type

Level A, Percutaneous and respiratory, and limited use

Equipment Category

Level A, limited use chemical protective suit

Availability

In production since 1994

Current User(s)

Safety Kleen Corporation, 385 Turner Way, Aston, PA 19014; and Onyx Industrial Services, 6161 Executive Boulevard, Huber Heights, OH.

Manufacturer

ILC Dover, Inc.
1 Moonwalker Road
Frederica, DE 19946-2080
POC: Rhonda Haller
800-631-9567 (Tel)
302-335-1320 (Fax)

Manufacturer Type

Domestic

Developer

ILC Dover, Inc.

Source

Internet: www.ilcdover.com
E-mail: haller@ilcdover.com

Certification

Not applicable for OSHA and NIOSH. None for NFPA.

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB

**Biological Warfare (BW)
Agents Protected Against**

Designed to be gas and air tight and to operate at positive pressure

**Toxic Industrial Materials
(TIMs) Protected Against**

Tested against over 200 chemicals and jet fuels. Achieved breakthrough times greater than 480 min for over 95 % of chemicals.

Duration of Protection

Greater than 480 min for >95 % of chemicals

Recommended Use(s)

Chemical emergency

Physical Parameters

Sizes Available	Four sizes: M (5' 3" to 5' 9"), L (5' 7" to 6' 1"), XL (6' 0" to 6' 5"), and XXL (6' 2" to 6' 8")
Weight	4 lb
Package Size and Volume	22 in x 6 in x 26 in
Power Requirements	Not applicable
Material Type	Impermeable, specialty laminate. Ready 1 material may emit low order of toxicity when burning. Multiple-fil and tough substrate composite material that is flexible, chemically resistant and economical.
Construction Type	Put together with sewn and heat-sealed seams that lock in protection while having superb physical strength. The rear zipper is protected by a cover flap that provides an extra protection barrier.
Color	Light blue
<u>Logistical Parameters</u>	
Ease of Use	Unrestricted movement, range of motion, and field of view. Lightweight design lessens fatigue. Lightweight and tapered to give a fit that doesn't keep getting in the way. The rear zipper is protected by a cover flap that provides an extra protection barrier. Oversized sleeves allow maneuverability inside the suit.
Consumables	Not specified
Maintenance Requirements	Not specified
Shelf Life	>5 yr
Transportability	Transportable via air, ground, or sea
Operational Limitations	Not specified
Environmental Conditions	Operational: 0 °F to °125 F. Storage: 0 °F to 165 °F. Resistant and operable in salt fog, high/low humidity, and rain.
Unit Cost	\$525
Maintenance Cost	\$0
Warranty	90 d on defects in materials and workmanship
Don/Doff Information	Requires assistance of one person to don and doff
Use/Reuse	Designed for up to five uses
Launderability	Hand clean with mild soap solution
Accessories	Wrist rings and gloves
<u>Special Requirements</u>	
Training Requirements	Very low—follow instructions in user's manual
Training Available	None required
Manuals Available	User's manual included with each suit

Surveillance Testing Requirements	After initial use, perform a pressure test before each use
Support Equipment	Breathing air, gloves, and boots
Testing Information	When tested in accordance with ASTM F739 it showed no permeation breakthrough after 8 h of exposure to the ASTM F1001 list of 21 chemicals and gases
Applicable Regulations	Not applicable
Health Hazards	None
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name
ID# 49

Chemturion[®] Suit: Model 84 Level A Total Encapsulating Suit



Technology

Cloropel[®], an enhanced chemically resistant CPE with improved performance characteristics. Hood/visor has chemical resistant, polyester splash visor.

Stock Number

Model 84 (SCBA and SCBA/Airline Models), reusable

Protection Type

Level A, Percutaneous and respiratory

Equipment Category

Level A, totally encapsulating chemical protective suit. It is used in conjunction with an internal SCBA to provide breathing air and positive internal pressure. Front suit entry.

Availability

In production since 1980

Current User(s)

Fyr Fyter Sales and Service
608 S. Broad Street
Mobile, AL 36603

Manufacturer

ILC Dover, Inc.
1 Moonwalker Road
Frederica, DE 19946-2080
POC: Rhonda Haller
800-631-9567 (Tel)
302-335-1320 (Fax)

Manufacturer Type

Domestic

Developer

ILC Dover, Inc.

Source

Internet: www.ilcdover.com
E-mail: haller@ilcdover.com

Certification

Not applicable for Reusable Level A suits

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, VX

**Biological Warfare (BW)
Agents Protected Against**

Provides PF of 100000. Suit is air and gas tight, and operates at a positive pressure. A different model (same suit material) is used at Atlanta CDC and Ft. Detrick.

Toxic Industrial Materials (TIMs) Protected Against

Tested against ASTM F1001 list of chemicals and against jet fuels

Duration of Protection

Depends on the chemical challenge

Recommended Use(s)

Valuable for remote HAZMAT spill cleanup. Designed to be worn with a wide range of self-contained breathing systems.

Physical Parameters

Sizes Available	Three sizes: M (5' 3" to 5' 9"), L (5' 7" to 6' 1"), and XL (6' 0" to 6' 5")
Weight	5 lb
Package Size and Volume	22 in x 6 in x 26 in
Power Requirements	Not applicable
Material Type	Impermeable chlorinated polyethylene. Contains thermoplastic materials, self-extinguishing.
Construction Type	Seams are dielectrically heat-sealed. The suit incorporates molded wrist cuffs with mating rubber wrist rings for attachment of your own chemical protective gloves. The suit legs terminate in integral booties worn inside your own chemical protective boots. Integral splashguards keep materials from entering the top of the boots.
Color	Light blue

Logistical Parameters

Ease of Use	Unrestricted movement, range of motion, and field of view (full 180° of vision). Lightweight design lessens fatigue.
Consumables	None
Maintenance Requirements	None
Shelf Life	>5 yr
Transportability	Transportable via air, ground, or sea
Operational Limitations	Not specified
Environmental Conditions	Operational: 0 °F to 125 °F. Storage: 0 °F to 165 °F. Resistant and operable in salt fog, high/low humidity, and rain.
Unit Cost	\$1.5K to \$1.9K
Maintenance Cost	\$0
Warranty	90 d on defects in materials and workmanship
Don/Doff Information	Self-donning and doffing
Use/Reuse	Reusable (unlimited)
Launderability	No limit to machine or hand washing. Use mild soap solution.
Accessories	The ILC Cool Vest* Model 19 liquid cooling system for use under the suit. HAZMAT Bags store the protective gear. Antifog visors help prevent fogging. Replacement wrist rings and splash visors.

Special Requirements

Training Requirements	Very low—follow instructions in user's manual
Training Available	None required
Manuals Available	User's manual included with each suit. A data package is provided with each suit that contains information regarding operation maintenance, testing and material compatibility. (Document #0000-72900).

Surveillance Testing Requirements	After initial use, perform a pressure test before each use
Support Equipment	Breathing air, gloves, and boots
Testing Information	Available upon request
Applicable Regulations	Not applicable
Health Hazards	None
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name
ID# 50

IPE (Individual Protection Equipment)

Picture Not Available

Technology

Charcoal impregnated inner. Liquid chemical resistant outer fabric. Permeable fabric.

Stock Number

Various depending on configuration

Protection Type

Percutaneous

Equipment Category

Suit

Availability

In production 2000

Current User(s)

Earlier version used by Canadian Department of National Defense

Manufacturer

Irvin Aerospace Canada Ltd.
P.O. Box 280
479 Central Avenue
Fort Erie, ON L2A 5M9
POC: Doug Eaton
905-871-6510 (Tel)
905-871-6534 (Fax)

Manufacturer Type

Foreign

Developer

Irvin Aerospace Canada Ltd., with support of Canadian Department of National Defense

Source

Irvin Aerospace Canada Ltd.
POC: Doug Eaton
905 871-6510 (Tel)
POC: Neil Pitts
Inside Sales Manager NBC
905 871-6510 (Tel)
905 871-6534 (Fax)
905 993-1975 (Cell)
Npitts@irvincanada.com

Certification

Canadian Department of National Defense

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

All known military chemical agents

**Biological Warfare (BW)
Agents Protected Against**

None

**Toxic Industrial Materials
(TIMs) Protected Against**

Under study

Duration of Protection

24 h (in most cases)

Recommended Use(s)	Not specified
<u>Physical Parameters</u>	
Sizes Available	XXS to XXL (minimum seven sizes)
Weight	1 lb
Package Size and Volume	14 in x 14 in x 8 in
Power Requirements	Not applicable
Material Type	Charcoal impregnated inner. Liquid chemical resistant outer fabric.
Construction Type	Sewn
Color	Per customer requirements
<u>Logistical Parameters</u>	
Ease of Use	Fully compatible with combat gear
Consumables	Not applicable
Maintenance Requirements	Not applicable
Shelf Life	10 yr minimum
Transportability	Fully transportable
Operational Limitations	Full military qualification
Environmental Conditions	All common military environmental conditions
Unit Cost	Approximately \$800 depending upon configuration. Volume dependant.
Maintenance Cost	Not applicable
Warranty	1 y
Don/Doff Information	None required
Use/Reuse	Reusable
Launderability	Laundering: clean in soapy water. Decon: operator dependent.
Accessories	Carrier bag, NBC boots, NBC gloves, and NBC gas mask
<u>Special Requirements</u>	
Training Requirements	1 h
Training Available	Yes, operator and trainer courses available
Manuals Available	User/maintenance/repair
Surveillance Testing Requirements	Visual inspection
Support Equipment	None

Testing Information	Available from Irvin Aerospace Canada Ltd.
Applicable Regulations	Not applicable
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Fully compatible with combat gear

General

Name
ID# 51

Kappler Responder[®] Total Encapsulating Level A (Gas-Tight) Suit



Technology Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number 41350 (front entry)

Protection Type Level A, Percutaneous (gas-tight)

Equipment Category Level A, total encapsulating (gas-tight) suit with PVC faceshield, flat back, and exhaust valves

Availability In stock

Current User(s) Fire departments, HAZMAT response teams, and law enforcement

Manufacturer Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type Domestic

Developer Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source www.kappler.com

Certification OSHA 1910.132 and OSHA 1910.120

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against** HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against** Not applicable

Toxic Industrial Materials (TIMs) Protected Against POC Kappler for permeation guides

Duration of Protection	POC Kappler for permeation guides
Recommended Use(s)	Emergency HAZMAT teams, chemical handling, chemical warfare protection and when protection is needed against potential flash fire and/or NFPA certified garments are required
<u>Physical Parameters</u>	
Sizes Available	S, M, L, XL, 2X, and 3X
Weight	9 lb/4.1 kg, one per case
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material
Construction Type	Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.
Color	Blue
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF [®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder [®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “Training Use Only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards. CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, causing the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

POC customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling which results from conditions beyond the control of the manufacturer.

**Don/Doff Information
Use/Reuse**

See Level A instruction manual for instructions on donning and doffing
See Level A instruction manual for suggestions on decontamination

**Launderability
Accessories**

See Level A instruction manual for suggestions on decontamination
Additional accessories that may be purchased include pressure test kit, chemtape, kooljacket, Tingley HAZMAT boot, and decon shower

Special Requirements

Training Requirements

Some instruction required

**Training Available
Manuals Available**

Level A instruction manual, training video, and Suit Smart CD
Level A instruction manual

Surveillance Testing Requirements	Visual inspection and in the case of Level A garments pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse
Support Equipment	Appropriate respiratory equipment
Testing Information	See attached permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 52

Kappler Responder® Total Encapsulating Level A Suit



Technology Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number 41550 (front entry)
41551 (rear entry)

Protection Type Level A, Percutaneous

Equipment Category Level A, total encapsulating suit, expanded back, and front/rear entry

Availability In stock

Current User(s) Fire departments, HAZMAT response teams, and law enforcement

Manufacturer Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type Domestic

Developer Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source www.kappler.com

Certification OSHA 1910.132 and OSHA 1910.120

Operational Parameters

Chemical Warfare (CW) Agents Protected Against HD, GB, GD, L, and VX

Biological Warfare (BW) Agents Protected Against Not applicable

Toxic Industrial Materials (TIMs) Protected Against POC Kappler for permeation guides

Duration of Protection POC Kappler for permeation guides

Recommended Use(s)

Emergency HAZMAT teams, chemical handling, chemical warfare protection and when protection is needed against potential flash fire and/or NFPA certified garments are required

Physical Parameters**Sizes Available**

S, M, L, XL, 2X, and 3X

Weight

Average packaging weight is 9 lb

Package Size and Volume

Not specified

Power Requirements

Not applicable

Material Type

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Construction Type

Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.

Color

Blue

Logistical Parameters**Ease of Use**

Some instruction required

Consumables

Not applicable

Maintenance Requirements

Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.

Shelf Life

Under proper storage conditions, there is no evidence to indicate that the System CPF[®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder[®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability

Not applicable

Operational Limitations

There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards. CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

POC customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of the product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See Level A instruction manual for instructions on donning and doffing

Use/Reuse

See Level A instruction manual for suggestions on decontamination

Laundryability

See Level A instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include pressure test kit, chemtape, kooljacket, Tingley HAZMAT boot, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available	Level A instruction manual, training video, and Suit Smart CD
Manuals Available	Level A Instruction Manual
Surveillance Testing Requirements	Visual inspection and in the case of Level A garments, pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 53

Kappler Total Encapsulating Level A Suit



Technology

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number

41580 (front entry)
41581 (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, total encapsulating suit, expanded back, exhaust valves; HAZMAT version includes double taped seams, FEP overlay lens, and 4H/Butyl glove combination

Availability

In stock

Current User(s)

Fire departments, HAZMAT response teams, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com

Source

Certification

None

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial Materials
(TIMs) Protected Against**

POC Kappler for permeation guides

Duration of Protection

POC Kappler for permeation guides

Recommended Use(s) Emergency HAZMAT teams, chemical handling, chemical warfare protection and when protection is needed against potential flash fire and/or NFPA certified garments are required

Physical Parameters

Sizes Available S, M, L, XL, 2X, and 3X

Weight Average packaging weight is 9 lb

Package Size and Volume Not specified

Power Requirements Not applicable

Material Type Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Construction Type Seams are double taped—produced when a sewn seam is covered with a strip of compatible material on both the inside and the outside of the suit. The strip is attached by heat-sealing as with film laminated fabrics.

Color Blue

Logistical Parameters

Ease of Use Some instruction required

Consumables Not applicable

Maintenance Requirements Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.

Shelf Life Under proper storage conditions, there is no evidence to indicate that the System CPF[®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder[®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability Not applicable

Operational Limitations There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards. CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

POC customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See Level A instruction manual for instructions on donning and doffing

Use/Reuse

See Level A instruction manual for suggestions on decontamination

Laundryability

See Level A instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include pressure test kit, chemtape, kooljacket, Tingley HAZMAT boot, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available	Level A instruction manual, training video, and Suit Smart CD
Manuals Available	Level A instruction manual
Surveillance Testing Requirements	Visual inspection and in the case of Level A garments, pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 54

Kappler Responder® Plus Total Encapsulating Level A Suit



Technology

Multiple barrier films laminated to both sides of tough composite substrate material. View window made of 40 mil press polished PVC with overlay of 5 mil FEP Teflon permanently attached over visor.

Stock Number

43580 (front entry)
43581 (rear entry)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, total encapsulating suit, expanded back, and exhaust valves

Availability

In stock

Current User(s)

REC's Customers:
EPA; Department of State Consequence Management and Diplomatic Security Division; State of NY; NYC Police; City of Mobile, AL; Department of Justice Center for Domestic Preparedness; FBI; Wisconsin Office of Emergency Management; DOD; and Indiana Office of State Fire Marshall; Jefferson County, MO.

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976
www.kappler.com

Source

Certification

None

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

Toxic Industrial Materials (TIMs) Protected Against Carbon disulfide, sulfuric acid, ammonia, chlorine, hydrogen chloride, and ethylene oxide

Duration of Protection >480 min

Recommended Use(s) Broad range of chemical protection

Physical Parameters

Sizes Available S, M, L, XL, 2X, and 3X

Weight 9 lb/4.1 kg, one per case

Package Size and Volume Not specified

Power Requirements Not applicable

Material Type Multiple barrier film laminated to both sides of a tough composite substrate material. View window made of 40 mil press polished PVC with overlay of 5 mil FEP Teflon permanently attached over visor.

Construction Type Seams are double taped—produced when a sewn seam is covered with a strip of compatible material on both the inside and the outside of the suit. The strip is attached by heat-sealing as with film laminated fabric.

Color High visibility orange

Logistical Parameters

Ease of Use Suit accommodates a 1 h breathing apparatus, most respirator masks, and the use of a hard hat

Consumables Not applicable

Maintenance Requirements Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.

Shelf Life Under proper storage conditions, there is no evidence to indicate that the System CPF[®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder[®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability Not applicable

Operational Limitations Temperature service range: -85 °F to 200 °F

Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.
Unit Cost	POC customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See Level A instruction manual for instructions on donning and doffing
Use/Reuse	It is completely up to the discretion of the person wearing the suit. Kappler considers CPF 4 a limited use suit and reuse is based on both an evaluation of the physical state of the garment and also the level and type of chemical exposure.
Launderability	See instruction manual for instructions on donning and doffing
Accessories	Butyl gloves (with inner gloves), exhaust valves
<u>Special Requirements</u>	
Training Requirements	Some instruction required

Training Available	Training video, Suit Smart CD
Manuals Available	Instruction manual available
Surveillance Testing Requirements	Visual inspection and in the case of Level A garments, pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse
Support Equipment	Appropriate respiratory equipment
Testing Information	First fabric to pass ASTM 1001 Test Battery with no permeation breakthrough after 8 h
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 55

Kappler Responder[®] Total Encapsulating Level A Suit, NFPA 1991



Technology

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number

41560 (front entry)
Pictured is 41550

Protection Type

Level A, Percutaneous (vapor protective)

Equipment Category

Level A, total encapsulating NFPA 1991 (vapor protective) Responder[®] suit, expanded back, covered exhaust valves, gloves, and sock boots

Availability

In stock

Current User(s)

Fire departments, HAZMAT response teams, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source

www.kappler.com

Certification

NFPA 1991, 2000 Edition (to comply with NFPA 1991 certification), must be worn with an aluminized overcover; 65160, fiberglass. NFPA 1991, 2000 Certified Responder Level A garment.

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial Materials
(TIMs) Protected Against**

POC Kappler for permeation guides

Duration of Protection

POC Kappler for permeation guides

Recommended Use(s)

Emergency HAZMAT teams, chemical handling, chemical warfare protection and when protection is needed against potential flash fire and/or NFPA certified garments are required

Physical Parameters

Sizes Available

S, M, L, XL, 2X, and 3X

Weight

Average packaging weight is 9 lb

Package Size and Volume

Not specified

Power Requirements

Not applicable

Material Type

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Construction Type

Seams are double taped—produced when a sewn seam is covered with a strip of compatible material on both the inside and the outside of the suit. The strip is attached by heat-sealing as with film laminated fabrics.

Color

Blue

Logistical Parameters

Ease of Use

Some instruction required

Consumables

Not applicable

Maintenance Requirements

Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use and a quick re-inspection before each use.

Shelf Life

Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability

Not applicable

Operational Limitations

There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards. CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

POC customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See Level A instruction manual for instructions on donning and doffing

Use/Reuse

See Level A instruction manual for suggestions on decontamination

Launderability

See Level A instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include pressure test kit, chemtape, kooljacket, Tingley HAZMAT boot, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available

Level A instruction manual, training video, and Suit Smart CD

Manuals Available	Level A instruction manual
Surveillance Testing Requirements	Visual inspection and in the case of Level A garments, pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse
Support Equipment	Appropriate respiratory equipment
Testing Information	See attached permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 56

Kappler Total Encapsulating Level B Suit

Picture Not Available

Technology

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical hold-out protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.

Stock Number

3T545

Protection Type

Level B, Percutaneous

Equipment Category

Level B, totally encapsulating flat back suit, rear zipper with storm flap, PVC visor, covered exhaust port opening, attached overboots, and side air inlet

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

OSHA 1910.132 and OSHA 1910.120

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial Materials
(TIMs) Protected Against**

POC Kappler for permeation guides

Duration of Protection

POC Kappler for permeation guides

Recommended Use(s)

Emergency HAZMAT teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups

Physical Parameters

Sizes Available	S–XL, 2X, and 3X
Weight	Average packaging weight is 13 lb
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical hold-out protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.
Construction Type	Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.
Color	Tan

Logistical Parameters

Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF [®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder [®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards. CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

POC customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See instruction manual for instructions on donning and doffing

Use/Reuse

See instruction manual for suggestions on decontamination

Launderability

See instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boots, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available	Training video, Suit Smart CD
Manuals Available	Not applicable
Surveillance Testing Requirements	Visual Inspections upon receipt from manufacturer, after each use and/or annually, and before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 57

Kappler CPF 3 Total Encapsulating Level B Suit



Technology

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical hold-out protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.

Stock Number

3T571

Protection Type

Level B, Percutaneous

Equipment Category

Level B, totally encapsulating expanded back suit, rear zipper with storm flap, PVC visor, two covered exhaust port openings, and sock boots with boot flaps

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, Alabama 35976

Source

www.kappler.com

Certification

OSHA 1910.132 and OSHA 1910.120

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

Toxic Industrial Materials (TIMs) Protected Against

POC Kappler for permeation guides

Duration of Protection

POC Kappler for permeation guides

Recommended Use(s)

Emergency HAZMAT teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups

Physical Parameters

Sizes Available

S–XL, 2X, and 3X

Weight

Average packaging weight is 6 lb

Package Size and Volume

Not specified

Power Requirements

Not applicable

Material Type

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical hold-out protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.

Construction Type

Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.

Color

Tan

Logistical Parameters

Ease of Use

Some instruction required

Consumables

Not applicable

Maintenance Requirements

Suits should be stored in a cool dry area away from direct sunlight

Shelf Life

Under proper storage conditions, there is no evidence to indicate that the System CPF[®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder[®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability

Not applicable

Operational Limitations

There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards. CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

Contact customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See instruction manual for instructions on donning and doffing

Use/Reuse

See instruction manual for suggestions on decontamination

Launderability

See instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boots, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available

Training video, Suit Smart CD

Manuals Available	Not applicable
Surveillance Testing Requirements	Visual Inspections upon receipt from manufacturer, after each use and/or annually, and before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 58

Kappler Responder® Total Encapsulating Level B Suit



Technology Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number 41370 (front entry)

Protection Type Level B, Percutaneous (liquid protective)

Equipment Category Level B, total encapsulating (liquid protective) suit, flat back, exhaust valves, with PVC face shield

Availability In stock

Current User(s) Fire departments, HAZMAT response teams, and law enforcement

Manufacturer Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type Domestic

Developer Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source www.kappler.com

Certification OSHA 1910.132 and OSHA 1910.120

Operational Parameters

Chemical Warfare (CW) Agents Protected Against HD, GB, GD, L, and VX

Biological Warfare (BW) Agents Protected Against Not applicable

Toxic Industrial Materials (TIMs) Protected Against Contact Kappler for permeation guides

Duration of Protection Contact Kappler for permeation guides

Recommended Use(s) Emergency HAZMAT teams, chemical handling, chemical warfare protection and when protection is needed against potential flash fire and/or NFPA certified garments are required

Physical Parameters

Sizes Available S, M, L, XL, 2X, and 3X

Weight One per case

Package Size and Volume Not specified

Power Requirements Not applicable

Material Type Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Construction Type Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.

Color Blue

Logistical Parameters

Ease of Use Some instruction required

Consumables Not applicable

Maintenance Requirements Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.

Shelf Life Under proper storage conditions, there is no evidence to indicate that the System CPF[®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder[®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability Not applicable

Operational Limitations There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards. CAUTION: Do not use for fire protection. Avoid open flame or intense heat.

Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.
Unit Cost	POC customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See Level B instruction manual for instructions on donning and doffing
Use/Reuse	See Level B instruction manual for suggestions on decontamination
Laundryability	See Level B instruction manual for suggestions on decontamination
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boot, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required

Training Available	Level B instruction manual, training video, and Suit Smart CD
Manuals Available	Level B instruction manual
Surveillance Testing Requirements	Visual inspection and in the case of Level A garments, pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 59

Kappler CPF 4 Total Encapsulating Level B Suit



Technology

Multi-film composite barrier film laminated to a high strength 2.3 oz polypropylene substrate

Stock Number

4T373

Protection Type

Level B, Percutaneous

Equipment Category

Level B, total encapsulating flat back, rear zipper with storm flap, PVC visor, covered exhaust port opening, attached overboots of suit material, elastic wrist (no gloves), side air inlet, and visor

Availability

In stock

Current User(s)

REC's Customers:
EPA; Department of State Consequence Management and Diplomatic Security Division; State of NY; NYC Police; City of Mobile, AL; Dept of Justice Center for Domestic Preparedness; FBI; Wisconsin Office of Emergency Management; DOD; and Indiana Office of State Fire Marshall; Jefferson County, MO.

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

OSHA 1910.132 and OSHA 1910.120

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

None

Biological Warfare (BW) Agents Protected Against	Not applicable
Toxic Industrial Materials (TIMs) Protected Against	Carbon disulfide, sulfuric acid, ammonia, chlorine, hydrogen chloride, and ethylene oxide
Duration of Protection	>480 min
Recommended Use(s)	Kappler recommends that CPF 4 be used in chemical applications where the risk of coming in POC with chemical is high splash
<u>Physical Parameters</u>	
Sizes Available	S through 3XL
Weight	22 lb/10 kg, 6 per case
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Multi-layer barrier film laminated to a 2.3 oz polypropylene substrate
Construction Type	Strapped seams, elastic wrist, and zipper with double storm flap with Velcro closure
Color	Green
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF [®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder [®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	Temperature service range: -85 °F to 200 °F

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

POC customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See instruction manual for instructions on donning and doffing

Use/Reuse

It is completely up to the discretion of the person wearing the suit. Kappler considers CPF 4 a limited use suit and reuse is based on both an evaluation of the physical state of the garment and also the level and type of chemical exposure.

Launderability

See instruction manual for instructions on donning and doffing

Accessories

Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boot, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available	Training video available
Manuals Available	Instruction manual available
Surveillance Testing Requirements	Visual inspections upon receipt from manufacturer, after each use, and before the next use
Support Equipment	Appropriate respiratory equipment
Testing Information	ASTM D751 Test Battery
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 60

Kappler CPF 4 Total Encapsulating Level B Suit



Technology

Multi-film composite barrier film laminated to a high strength 2.3 oz polypropylene substrate

Stock Number

4T571

Protection Type

Level B, Percutaneous

Equipment Category

Level B, total encapsulating, rear zipper with double storm flap, expanded back, PVC visor, covered exhaust port opening, attached sock boot with boot storm flap (sock boots to be worn inside regular work boots), and side air inlet

Availability

In stock

Current User(s)

REC's Customers:
EPA; Department of State Consequence Management and Diplomatic Security Division; State of NY; NYC Police; City of Mobile, AL; Department of Justice Center for Domestic Preparedness; FBI; Wisconsin Office of Emergency Management; DOD; and Indiana Office of State Fire Marshall; Jefferson County, MO.

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

OSHA 1910.132 and OSHA 1910.120

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

None

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

Toxic Industrial Materials (TIMs) Protected Against	Carbon disulfide, sulfuric acid, ammonia, chlorine, hydrogen chloride, and ethylene oxide
Duration of Protection	>480 min
Recommended Use(s)	Kappler recommends that CPF 4 be used in chemical applications where the risk of coming in POC with chemical is high splash
<u>Physical Parameters</u>	
Sizes Available	S through 3XL
Weight	31 lb/10 kg, 6 per case
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Multi-layer barrier film laminated to a 2.3 oz polypropylene substrate
Construction Type	Strapped seams, elastic wrist, and zipper with double storm flap with Velcro closure
Color	Green
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF [®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder [®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	Temperature service range: -85 °F to 200 °F

Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in POC with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.
Unit Cost	POC customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See instruction manual for instructions on donning and doffing
Use/Reuse	It is completely up to the discretion of the person wearing the suit. Kappler considers CPF 4 a limited use suit and reuse is based on both an evaluation of the physical state of the garment and also the level and type of chemical exposure.
Launderability	See instruction manual for instructions on donning and doffing
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boot, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required

Training Available	Training video available, Suit Smart CD
Manuals Available	Instruction manual available
Surveillance Testing Requirements	Visual inspections upon receipt from manufacturer, after each use, and before the next use
Support Equipment	Appropriate respiratory equipment
Testing Information	ASTM D751 Test Battery
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler Responder® Total Encapsulating Level B Suit (Liquid Protective)

ID# 61



Technology

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number

41570 (front entry)
41571 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, liquid protective, and expanded back

Availability

In stock

Current User(s)

Fire departments, HAZMAT response teams, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kapper.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

None

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial Materials
(TIMs) Protected Against**

Contact Kappler for permeation guides

Duration of Protection

Contact Kappler for permeation guides

Recommended Use(s)

Emergency HAZMAT teams, chemical handling, chemical warfare protection and when protection is needed against potential flash fire and/or NFPA certified garments are required

Physical Parameters**Sizes Available**

S, M, L, XL, 2X, and 3X

Weight

Average packaging weight is 9 lb

Package Size and Volume

Not specified

Power Requirements

Not applicable

Material Type

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Construction Type

Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.

Color

Blue

Logistical Parameters**Ease of Use**

Some instruction required

Consumables

Not applicable

Maintenance Requirements

Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.

Shelf Life

Under proper storage conditions, there is no evidence to indicate that the System CPF[®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder[®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability

Not applicable

Operational Limitations

There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flex in a 60 ° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

Contact customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling which results from conditions beyond the control of the manufacturer.

Don/Doff Information

See Level B instruction manual for instructions on donning and doffing

Use/Reuse

See Level B instruction manual for suggestions on decontamination

Launderability

See Level B instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boot, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available

Level B instruction manual, training video, and Suit Smart CD

Manuals Available

Level B instruction manual

Surveillance Testing Requirements	Visual inspection and in the case of Level A garments, pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name
ID# 62

Kappler Responder[®] CSM OSHA Level A



Technology

Kappler/Grommet's Level A Responder CSM is a totally encapsulating suit with a large-view 40 mil PVC face shield with a 5 mil Teflon overlay, front entry, expanded back (to accommodate self-contained breathing apparatus (SCBA) and rebreathers), two exhaust valves, 48 in gas-tight PVC zipper, triple storm flap, attached sock boots with boot flap, replaceable MILSPEC butyl gloves, and double-sealed seams. Impermeable. A multi-layer extrusion laminated on one side to a polypropylene nonwoven substrate with another multi-layer film extrusion laminated to the opposite side. Material offers very little thermal protection to the user. Estimated temperature service range for material and seams: -85 °F to 200 °F.

Stock Number

42583 (Level A)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, suit

Availability

June 1994—Initial entry into U.S. Army, DoD units, COE contractors, and Chemical Surety Labs

Current User(s)

U.S. Army Technical Escort Unit
POC: Mr. Sheldon Orr
410-436-8532 (Tel)
Aberdeen Proving Ground, MD 21010-5423.
1ST Ten RAID Teams and USMC CRIBF, MARCORSSYSCOM,
POC: Adam Becker
703-784-5898 (Tel)
Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer

Manufacturer Type

Domestic

Developer

GEOMET Technologies, Inc., and Kappler Safety Group

Source

www.kappler.com
www.nbcprotect.com

Certification	Test data on the material (e.g., ASTM and TIMs) available from both the manufacturer and co-developer
<u>Operational Parameters</u>	
Chemical Warfare (CW) Agents Protected Against	All classical CW agents including HN1, HN2, and HN3
Biological Warfare (BW) Agents Protected Against	Deductive reasoning strongly supports the use of these garments to protect against BW agents in powder form. No aerosol testing has been performed.
Toxic Industrial Materials (TIMs) Protected Against	Material tested for permeation per ASTM F739 against 200 chemicals, liquids, and gases.
Duration of Protection	Varies depending upon the type of hazard
Recommended Use(s)	Not specified
<u>Physical Parameters</u>	
Sizes Available	S, M, L, XL, 2XL, and 3XL. A size smaller than small (XS) can be manufactured for a minimum quantity of 12 units.
Weight	Level A—6 lb
Package Size and Volume	Level A—45.9 in ³ in shipping container (box)
Power Requirements	Not applicable
Material Type	Impermeable. A multi-layer extrusion laminated on one side to a polypropylene nonwoven substrate with another multi-layer film extrusion laminated to the opposite side.
Construction Type	Sealed seams
Color	Tan outside. White inside. Tan seam tape inside and outside.
<u>Logistical Parameters</u>	
Ease of Use	Suit does not restrict mobility. Wearers can bend, twist, and turn without friction. The clothing is compatible with most SCBAs and with rebreathers, especially the Biomarine BioPak 240.
Consumables	Antifog is necessary to keep the face shield from fogging due to the wearer's warm exhalation
Maintenance Requirements	Visual inspection and pressure testing are required before and after use, of every six months when in storage
Shelf Life	Not specified
Transportability	Not applicable
Operational Limitations	Temperature service range: -85 °F to 200 °F
Environmental Conditions	Ambient weather conditions should have little affect on suit material. Estimated temperature service range for material and seams: -85 °F to 200 °F.

Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	Standard warranty is for a period of 90 d; however, extended warranties are negotiable from purchases made by co-developer GEOMET Technologies, Inc.
Don/Doff Information	With instruction manual
Use/Reuse	The physical condition and whether the suit passes the pressure test must be determined before considering reuse
Laundryability	Decontamination procedures should be initiated and supervised by a qualified safety professional as quickly as possible on a suit that has been exposed to toxic chemical substances. Responder CSM suits are for limited-use and as such, are not designed for multiple washing and decontamination.
Accessories	35 mil butyl gloves, a Sanarex carrying bag for Level A, and a plastic, resealable storage bag for Level B coveralls
<u>Special Requirements</u>	
Training Requirements	8 h
Training Available	Training video, Suit Smart CD
Manuals Available	One instruction manual is included with each suit shipped
Surveillance Testing Requirements	Visual inspection and pressure testing are required before and after use, of every 6 mo when in storage
Support Equipment	One pressure test kit and an external air source
Testing Information	Chemical agent testing pertaining to the preproduction fabric roll and post-production suit lot. Test data on the material (e.g., ASTM and TIMs) available from both the manufacturer and co-developer.
Applicable Regulations	None. However, each individual Government user has developed their own internal guidance regarding the storage and use of these garments.
Health Hazards	There is no potential health hazard associated with the possession, use, or storage of Responder CSM limited-use suits
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name
ID# 63

Kappler Responder[®] CSM OSHA Level B



Technology

Kappler/ GEOMET's Level B Responder CSM is a zipper-front coverall with an attached hood, jam fit glove system with MILSPEC butyl gloves, attached sock boots with splash guards, and double-sealed seams. The extended double storm flap works with the hood to accommodate a respirator. Impermeable. A multi-layer extrusion laminated on one side to a polypropylene nonwoven substrate with another multi-layer film extrusion laminated to the opposite side. Material offers very little thermal protection to the user. Estimated temperature service range for material and seams: -85 °F to 200 °F.

Stock Number

42489 (Level B)

Protection Type

Level B/C, Percutaneous

Equipment Category

Level B/C, suit

Availability

June 1994—Initial entry into U.S. Army, DoD units, COE contractors, and Chemical Surety Labs

Current User(s)

U.S. Army Technical Escort Unit
POC: Mr. Sheldon Orr
410-436-8532 (Tel)
Aberdeen Proving Ground, MD 21010-5423.
1ST Ten RAID Teams and USMC CRIBF, MARCORSSYSCOM
POC: Adam Becker
703-784-5898 (Tel)
Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer

Manufacturer Type
Developer

Domestic
GEOMET Technologies, Inc., and Kappler Safety Group

Source

www.kappler.com
www.nbcprotect.com

Certification

Test data on the material (e.g., ASTM and TIMs) available from both the manufacturer and co-developer

Operational Parameters

Chemical Warfare (CW) Agents Protected Against

All classical CW agents including HN1, HN2, and HN3

Biological Warfare (BW) Agents Protected Against

Deductive reasoning strongly supports the use of these garments to protect against BW agents in powder form. No aerosol testing has been performed.

Toxic Industrial Materials (TIMs) Protected Against

Material tested for permeation per ASTM F739 against 200 chemicals, liquids, and gases

Duration of Protection

Varies depending upon the type of hazard

Recommended Use(s)

Not specified

Physical Parameters

Sizes Available

S, M, L, XL, 2XL, and 3XL. A size smaller than small (XS) can be manufactured for a minimum quantity of 12 units.

Weight

Level B—4 lb

Package Size and Volume

Level B—34.5 in³ in shipping container (box)

Power Requirements

Not applicable

Material Type

A multi-layer extrusion laminated on one side to a polypropylene non-woven substrate with another multi-layer film extrusion laminated to the opposite side

Construction Type

Sealed seams

Color

Tan outside. White inside. Tan seam tape inside and outside.

Logistical Parameters

Ease of Use

Suit does not restrict mobility. Wearers can bend, twist, and turn without friction. The clothing is compatible with most SCBAs and with rebreathers, especially the Biomarine BioPak 240.

Consumables

Antifog is necessary to keep the face shield from fogging due to the wearer's warm exhalation

Maintenance Requirements

Visual inspection and pressure testing are required before and after use, or every six months when in storage

Shelf Life

Not specified

Transportability

Not applicable

Operational Limitations

Temperature service range: -85 °F to 200 °F

Environmental Conditions	Ambient weather conditions should have little affect on suit material. Estimated temperature service range for material and seams: -85 °F to 200 °F.
Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	Standard warranty is for a period of 90 d; however, extended warranties are negotiable from purchases made by co-developer GEOMET Technologies, Inc.
Don/Doff Information	With instruction manual
Use/Reuse	The physical condition and whether the suit passes the pressure test must be determined before considering reuse
Launderability	Decontamination procedures should be initiated and supervised by a qualified safety professional as quickly as possible on a suit that has been exposed to toxic chemical substances. Responder CSM suits are for limited-use and as such, are not designed for multiple washing and decontamination.
Accessories	35 mil butyl gloves, a Sanarex carrying bag for Level A, and a plastic, resealable storage bag for Level B coveralls
<u>Special Requirements</u>	
Training Requirements	8 h
Training Available	Training video, Suit Smart CD
Manuals Available	One instruction manual is included with each suit shipped
Surveillance Testing Requirements	Visual inspection and pressure testing are required before and after use, or every 6 mo when in storage
Support Equipment	One pressure test kit and an external air source
Testing Information	Chemical agent testing pertaining to the preproduction fabric roll and post-production suit lot. Test data on the material (e.g., ASTM and TIMs) available from both the manufacturer and co-developer.
Applicable Regulations	None. However, each individual Government user has developed their own internal guidance regarding the storage and use of these garments.
Health Hazards	There is no potential health hazard associated with the possession, use, or storage of Responder CSM limited-use suits
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name
ID# 64

Lakeland Tychem® 10000 NFPA Certified Level A Ensemble



Technology Inner garment is selectively permeable, outer garment is aluminized and made for chemical flash fire protection

Stock Number 12645 (front entry)
12655 (rear entry)

Protection Type Level A, Percutaneous, respiratory (gas-tight suit), and flash fire

Equipment Category Level A, ensemble, with aluminized fiberglass overcover

Availability 4 wk to 5 wk ARO

Current User(s) Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type Domestic

Developer Lakeland Industries

Source www.lakeland.com

Certification NFPA

Operational Parameters

Chemical Warfare (CW) Agents Protected Against Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against Excellent protection against a wide variety of TIMs

Duration of Protection Minimum of 8 h

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	30 lb
Package Size and Volume	20 in L x 16 in W x 16 in H
Power Requirements	None
Material Type	Inner garment is selectively permeable, outer garment is aluminized and made for chemical flash fire protection
Construction Type	Seam sewn and the heat-sealed with tape
Color	Outer garment is silver and inner is lime-green
<u>Logistical Parameters</u>	
Ease of Use	Garment passed all NFPA requirements for mobility and flexibility
Consumables	None—gloves are replaceable if needed
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation other than original bag included with suit
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not specified
Warranty	90 d
Don/DoFF Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	3-layer glove system, a combination of Viton (middle), North Silvershield (inner), and Kevlar (outer), storage bag, and Bata HAZMAT boots included with each ensemble
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears

Support Equipment	Level A pressure test kit
Testing Information	ASTM F1052
Applicable Regulations	NFPA 1991–2000 edition
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name
ID# 65

Lakeland Tychem® 10000 Level A Ensemble



Technology Selectively permeable

Stock Number 11645 (front entry)
11655 (rear entry)

Protection Type Level A, Percutaneous, and respiratory (gas-tight suit)

Equipment Category Level A, ensemble, with aluminized PBI/Kevlar overcover

Availability 4 wk to 5 wk ARO

Current User(s) Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type Domestic

Developer Lakeland Industries

Source www.lakeland.com

Certification NFPA 1991-2000 Edition, ASTM F1052

Operational Parameters

Chemical Warfare (CW) Agents Protected Against Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against Excellent protection against a wide variety of TIMs

Duration of Protection Minimum of 8 h

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	30 lb
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green
<u>Logistical Parameters</u>	
Ease of Use	Not specified
Consumables	None—gloves are replaceable if needed
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation other than original bag included with suit
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	3-layer glove combination of Viton, North Silvershield, and outer Kevlar knit gloves, storage bag, and Bata HAZMAT boots
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual is available, permeation guide is available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment Testing Information	Level A pressure test kit ASTM F1052

Applicable Regulations	NFPA 1991–2000 edition
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name
ID# 66

Lakeland Tychem® 10000 Economy Level A Encapsulated Suit



Technology

Selectively permeable

Stock Number

10620 (front entry) Tychem® 10000
10630 (rear entry) Tychem® 10000
TK620 Tychem® TK
TK630 Tychem® TK

Protection Type

Level A, Percutaneous, and respiratory

Equipment Category

Level A, fully encapsulating, and flat back

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic manufacturer

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

OSHA Level A

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	10 lb
Package Size and Volume	22 in L x 16 in W x 10.5 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems from wearer compared to other Level A CPC
Consumables	None—gloves are replaceable if needed
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation other than original bag included with suit
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/DoFF Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	Butyl gloves, sock boots with boot flaps, and storage bag included
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	Level A pressure test kit

Testing Information	ASTM F1052
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name
ID# 67

Lakeland Tychem® 10000 Economy Level A Encapsulated Suit



Technology

Selectively permeable

Stock Number

10660 (front entry) Tychem® 10000
10670 (rear entry) Tychem® 10000
TK660 Tychem® TK
TK670 Tychem® TK

Protection Type

Level A, Percutaneous, and respiratory

Equipment Category

Level A, fully encapsulating

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic manufacturer

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

OSHA Level A

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial Materials
(TIMs) Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection	Minimum of 8 h
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	10 lb
Package Size and Volume	22 in L x 16 in W x 10.5 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems from wearer compared to other Level A CPC
Consumables	None—gloves are replaceable if needed
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation other than original bag included with suit
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	Butyl gloves, sock boots with boot flaps, and storage bag included
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	Level A pressure test kit

Testing Information	ASTM F1052
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name
ID# 68

Lakeland Tychem® 10000 Level A Suit



Technology

Selectively permeable

Stock Number

10640 (front entry) Tychem® 10000
10650 (rear entry) Tychem® 10000
TK640 Tychem® TK
TK650 Tychem® TK

Protection Type

Level A, Percutaneous, and respiratory (gas-tight suit)

Equipment Category

Level A, encapsulated, and gas-tight suit deluxe

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

OSHA Level A

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	10 lb
Package Size and Volume	22 in L x 16 in W x 10.5 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems from wearer compared to other Level A CPC
Consumables	None—gloves are replaceable if needed
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation other than original bag included with suit
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/DoFF Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	3-layer glove system (butyl inner, silvershield middle, Kevlar outer), and storage bag included
<u>Special Requirements</u>	
Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	Level A pressure test kit

Testing Information	ASTM F1052
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name
ID# 69

Lakeland Tychem® 9400 Level B Encapsulated Suit



Technology

Selectively permeable

Stock Number

94450 (rear entry) Tychem® 9400
BR450 Tychem® BR

Protection Type

Level B, Percutaneous, and respiratory

Equipment Category

Level B, encapsulated suit, expanded back, 48" zipper, double storm flap with Velcro, and sock boots with boot flaps

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

Duration of Protection	Breakthrough time at minimum of 8 h, except Ammonia at 45 min, Dichloromethane at 391 min, and Methanol at 150 min
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	13 lb per case and three in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	School bus yellow
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems from wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 9400 Level B Encapsulated Suit

ID# 70



Technology

Selectively permeable

Stock Number

94400 (rear entry) Tychem® 9400
BR400 Tychem® BR

Protection Type

Level B, Percutaneous, and respiratory

Equipment Category

Level B, encapsulated suit, flat back, 48" zipper, storm flap, and sock boots with boot flaps

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

Duration of Protection Breakthrough time at minimum of 8 h, except Ammonia at 45 min, Dichloromethane at 391 min, and Methanol at 150 min

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 13 lb per case and three in a case

Package Size and Volume Not specified

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Seam sewn and the heat-sealed with tape

Color School bus yellow

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems from wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions Designed to be worn in common outdoor conditions

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not applicable

Warranty 90 d

Don/Doff Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements None

Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® SL Level B Encapsulated Suit

ID# 71



Technology

Selectively permeable

Stock Number

72400 (rear entry)

Protection Type

Level B, Percutaneous, and respiratory

Equipment Category

Level B, encapsulated suit, flat back, 48" zipper, storm flap, elastic wrists, and sock boots with boot flaps

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L).
Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m²
Questions call Lakeland Customer Service at 800-645-9291

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters**Sizes Available**

S through 5X

Weight

7 lb per case and three in a case

Package Size and Volume

Not specified

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

White

Logistical Parameters**Ease of Use**

Garment poses no major mobility of flexibility problems from wearer compared to other Level B CPC

Consumables

None

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Designed to be worn in common outdoor conditions

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/DoFF Information

Not specified

Use/Reuse

Limited use

Laundryability

Suits are not launderable

Accessories

None

Special Requirements

Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 10000 Level B Encapsulated Suit

ID# 72



Technology

Selectively permeable

Stock Number

10440 (front entry) Tychem® 10000
10450 (rear entry) Tychem® 10000
TK440 Tychem® TK
TK450 Tychem® TK

Protection Type

Level B, Percutaneous, and respiratory

Equipment Category

Level B, encapsulated suit

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

GA, GB, GD, HD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against	A broad range of TIMs. Contact Lakeland for further information.
Duration of Protection	Breakthrough time at minimum of 8 h, except Ammonia at 45 min, Dichloromethane at 391 min, and Methanol at 150 min
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	15 lb
Package Size and Volume	22 in L x 16 in W x 10.5 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility of flexibility problems from wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None

Special Requirements

Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name *Lakeland Tychem® 10000 Level B Coverall (Fully Encapsulated)*

ID# 73



Technology Selectively permeable

Stock Number 10400 Tychem® 10000
TK400 Tychem® TK

Protection Type Level B, Percutaneous, and respiratory

Equipment Category Level B, coverall (fully encapsulated flat back suit, PVC visor, 48" rear entry zipper with storm flap, and sock boot and boot flaps)

Availability 4 wk to 5 wk ARO

Current User(s) Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type Domestic

Developer Lakeland Industries

Source www.lakeland.com

Certification Not applicable

Operational Parameters

Chemical Warfare (CW) Agents Protected Against Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against Excellent protection against a wide variety of TIMs

Duration of Protection	Minimum of 8 h
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available	S through 5X
Weight	9 lb per case and three in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green

Logistical Parameters

Ease of Use	Garment poses no major mobility or flexibility problems from wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None

Special Requirements

Training Requirements	Not specified
Training Available	Available through regional sales representation

Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

C-Cover S-89 One Piece NBC Protective Overgarment

ID# 74



Technology

Thermoplastic film technology (advanced, co-extruded, multi-layer, thermoplastic films are converted into several different, patented disposable garment designs by special heat sealing technique). Body cover—50 μ thin, transparent polyethylene (PE) film. The PE has a polyamide (PA) barrier. Foot covers—made from nonwoven polypropylene (PP) fiber fabric reinforcements.

Stock Number

NATO Stock No: 8415 25 138 3938

Protection Type

Skin protection from Military NBC warfare agents

Equipment Category

Transparent body cover and foot covers with mask opening; disposable

Availability

Full production
Delivery: 60 d to 90 d after order

Current User(s)

NATO military Use—Sweden, Norway, and USA

Manufacturer

New Pac Safety AB
P.O. Box 174
S-566 23 Habo
Sweden
+46-36-411-39 (Tel)
+46-36-410-31 (Fax)
E-mail: info@newpac.se

Manufacturer Type

Foreign

Developer

New Pac Safety AB

Source

Sales: INDEF Services Intl.
14847 Lee Highway
Amissville, VA 20106-0089
540-937-7327 (Tel)
540-937-7328 (Fax)
indefsteve@msn.com

Certification

Meets NATO Military Standards for NBC Ensemble
Swedish Defense Lab Certification
Battelle Labs—Test GD and HD (July 27, 1990)

Operational Parameters

Chemical Warfare (CW) Agents Protected Against	All Military CW agents
Biological Warfare (BW) Agents Protected Against	All Military BW agents
Toxic Industrial Materials (TIMs) Protected Against	Detects a variety of TIMs
Duration of Protection	All garments equipped with PA barriers provide protection against all known CW agents for more than 24 h. Minimum 12 h against NATO standard challenge.
Recommended Use(s)	Tactical operations, CBW response teams, medical response teams, and decontamination teams : Designed for temporary and short term use by support personnel and to protect general population.

Physical Parameters

Sizes Available	One size fits all
Weight	1.1 lb
Package Size and Volume	Can be tightly rolled for compact storage
Power Requirements	Not applicable
Material Type	Body cover—50 μ thin, transparent polyethylene (PE) film. The PE has a polyamide (PA) barrier. Foot covers—made from nonwoven polypropylene (PP) fiber fabric reinforcements capable of withstanding at least 5 km of rough ground.
Construction Type	Reinforced sealed
Color	Transparent

Logistical Parameters

Ease of Use	Protection provided within less than 10 s of unexpected CW attack
Consumables	None
Maintenance Requirements	None—Suit is disposable
Shelf Life	10 yr
Transportability	Not specified
Operational Limitations	Not for use where exposure to open flame is possible. Concern of heat stress to wearer in high temperature/high humidity conditions.
Environmental Conditions	-30 °F to +140 °F. Maintains protection if wet.
Unit Cost	\$60/complete ensemble
Maintenance Cost	None—disposable

Warranty	Replacement if manufacturing flaw found upon initial use within 12 mo of purchase
Don/Doff Information	Less than 10 s. Ensemble is worn over clothing. Boot covers worn over boots. Can don without assistance.
Use/Reuse	24 h use minimum. Disposable after use.
Launderability	Disposable after use
Accessories	Not specified
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	None required
Manuals Available	None required, video available
Surveillance Testing Requirements	Not specified
Support Equipment	Not specified
Testing Information	Meets NATO Standard Test Requirement for CB Ensemble
Applicable Regulations	Not specified
Health Hazards	Not specified
Communications Interface Capability	Not specified
EOD Compatibility	Yes

General

Name

C-Cover S/89N Body Cover

ID # 75

Picture Not Available

Technology

Thermoplastic film technology (advanced, co-extruded, multi-layer, thermoplastic films are converted into several different, patented disposable garment designs by special heat sealing technique). Body cover—50 μ thin, transparent polyethylene (PE) film. The PE has a polyamide (PA) barrier. Foot covers—made from nonwoven polypropylene (PP) fiber fabric reinforcements.

Stock Number

Not specified

Protection Type

Percutaneous

Equipment Category

Transparent body cover and foot covers. Similar to S/89 but has no mask opening and is shortened to allow breathing air to be pumped in from underneath up to the respirator.

Availability

Not specified

Current User(s)

Military and civilian use

Manufacturer

New Pac Safety AB
P.O. Box 174
S-566 23 Habo
Sweden
+46-36-411-39 (Tel)
+46-36-410-31 (Fax)
E-mail: info@newpac.se

Manufacturer Type

Foreign

Developer

New Pac Safety AB

Source

Sales: INDEF Services Intl.
14847 Lee Highway
Amissville, VA 20106-0089
540-937-7327 (Tel)
540-937-7328 (Fax)
indefsteve@msn.com

Certification

Not specified

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

NBC

**Biological Warfare (BW)
Agents Protected Against**

NBC

Toxic Industrial Materials (TIMs) Protected Against	Not specified
Duration of Protection	All garments equipped with PA barriers provide protection against all known CW agents for more than 24 h
Recommended Use(s)	Impermeable protective garments for military and civilian use

Physical Parameters

Sizes Available	Not applicable
Weight	Lightweight
Package Size and Volume	Can be tightly rolled for compact storage
Power Requirements	Not applicable
Material Type	Body cover—50 μ thin, transparent polyethylene (PE) film. The PE has a polyamide (PA) barrier. Foot covers-made from nonwoven polypropylene (PP) fiber fabric reinforcements capable of withstanding at least 5 km of rough ground.
Construction Type	Not specified
Color	Transparent

Logistical Parameters

Ease of Use	Protection provided within less than 10 s of unexpected CW attack
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	Not specified
Transportability	Not applicable
Operational Limitations	Not specified
Environmental Conditions	Not specified
Unit Cost	Not specified
Maintenance Cost	Not specified
Warranty	Not specified
Don/Doff Information	Less than 10 s
Use/Reuse	Disposable
Launderability	Not specified
Accessories	Not specified

Special Requirements

Training Requirements	Not specified
Training Available	Not specified
Manuals Available	Not specified
Surveillance Testing Requirements	Not specified
Support Equipment	Not specified
Testing Information	Not specified
Applicable Regulations	Not specified
Health Hazards	Not specified
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name

C-Cover Dress S-97 NBC Protective Overgarment

ID # 76



Technology

Resistant barrier material known as EVAL, ISO standard for ethylene vinyl alcohol (EVOH). Thermoplastic film technology (advanced, co-extruded, multi-layer, thermoplastic films are converted into several different, patented disposable garment designs by special heat sealing technique). Trousers have integrated PP-reinforced foot covers and the C-Cover Dress has a PA barrier. The PE has a polyamide (PA) barrier.

Stock Number

NATO # 4230-17-110-0048

Protection Type

Skin protection from Military NBC warfare agents

Equipment Category

Two-piece suit with integrated hood, integrated reinforced foot covers, disposable

Availability

Full production. Delivery: 60 d to 90 d after order.

Current User(s)

NATO military use—Sweden, Denmark, Finland, Switzerland, Hungary, USA

Manufacturer

New Pac Safety AB
P.O. Box 174
S-566 23 Habo
Sweden
+46-36-411-39 (Tel)
+46-36-410-31 (Fax)
E-mail: info@newpac.se

Manufacturer Type

Private, Foreign

Developer

New Pac Safety, Sweden

Source

Sales: INDEF Services Intl
14847 Lee Highway
Amissville, VA 20106-0089
540-937-7327 (Tel)
540-937-7328 (Fax)
indefsteve@msn.com

Certification

Meets NATO Military Standards for NBC Ensemble
Swedish Defense Lab Certification

Operational Parameters

Chemical Warfare (CW) Agents Protected Against	All Military CW agents
Biological Warfare (BW) Agents Protected Against	All Military BW agents
Toxic Industrial Materials (TIMs) Protected Against	Most hazardous chemicals
Duration of Protection	All garments equipped with PA barriers provide protection against all known CW agents for more than 24 h. Minimum 12 h against NATO standard challenge.
Recommended Use(s)	Tactical operations, CBW response teams, medical response teams, and decontamination teams : Designed for temporary and short term use by support personnel and to protect general population.

Physical Parameters

Sizes Available	L and XL
Weight	2 ¾ lb
Package Size and Volume	11 in x 9.5 in x 3 in; 0.18 in cuff
Power Requirements	None
Material Type	Trousers have integrated PP-reinforced foot covers and the C-Cover Dress has a PA barrier. The PE has a polyamide (PA) barrier.
Construction Type	Jacket has an integrated hood with flexible ring ensuring snug fit around mask. The design has been carefully chosen for full scale, high production and guarantees best seal strength. Sleeves are sealed to the jacket with one common sleeve opening. The design of the trousers allows for two pairs to be sealed at a time. New Pac Safety AB owns patent rights. Special heat sealing technique.
Color	Forest green and military green

Logistical Parameters

Ease of Use	Simple don—no training required
Consumables	None—suit is disposable
Maintenance Requirements	None
Shelf Life	10 yr
Transportability	Not applicable
Operational Limitations	Not for use where exposure to open flame is possible. Concern of heat stress to wearer in high temperature/high humidity conditions.
Environmental Conditions	-30 °F to +140 °F. Maintains protection if wet.
Unit Cost	\$110/complete ensemble
Maintenance Cost	None

Warranty	Replacement if manufacturing flaw found upon initial use within 12 mo of purchase
Don/Doff Information	Ensemble is worn over clothing. Boot covers worn over boots and gloves over hands. Can don without assistance.
Use/Reuse	24 h use minimum. Disposable after use.
Launderability	No
Accessories	None
<u>Special Requirements</u>	
Training Requirements	None
Training Available	None required
Manuals Available	None Required
Surveillance Testing Requirements	None
Support Equipment	None
Testing Information	Meets NATO Standard Test Requirement for CB Ensemble
Applicable Regulations	Not applicable
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Yes

General

Name

Saratoga HAMMER Suit

ID # 77



Technology

Permeable Saratoga carbon sphere sorptive technology. Two layer fabric system with shell of 100 % cotton and Saratoga permeable liner of activated carbon spheres on polyester jersey. Not FR (custom FR design available).

Stock Number

TS CO-1195C (2-piece suit)

Protection Type

Percutaneous

Equipment Category

Chemical protective overgarment, duty uniform

Availability

Fielded in 1998. Currently in production.

Current User(s)

U.S. Secret Service
Technical Security Division
1800 G Street NW
Washington, DC 20223
POC: Mr. David Cohen
202-395-9272

Manufacturer

Tex-Shield, Inc.
5206 Morrowick Rd
Charlotte, NC 28226
POC: Nona Fahl
704-341-3681 (Tel)
704-72341-3468 (Fax)

Manufacturer Type

International

Developer

U.S. Secret Service
Technical Security Division
1800 G Street NW
Washington, DC 20223
POC: Mr. David Cohen
202-395-9272

Source

Tex-Shield, Inc.

Certification

Provides protection from chemical warfare agents per MIL-C-29462. Tex-Shield is sole source for all material used in Saratoga HAMMER Suit.

Operational Parameters

Chemical Warfare (CW) Agents Protected Against	All classes of chemical warfare agents when used as directed with chemical warfare protective mask, gloves, and overboots or socks
Biological Warfare (BW) Agents Protected Against	Protects against biological warfare agents when used as directed with appropriate mask, gloves, and overboots or socks
Toxic Industrial Materials (TIMs) Protected Against	Not tested
Duration of Protection	Meets the requirements for protection from CW agents for up to six launderings, 45 d wear, 120 calendar days after removal from factory sealed bag or 24 h after contamination
Recommended Use(s)	Tactical, crisis management, all law enforcement, and first responders

Physical Parameters

Sizes Available	S/X-short, S/short, M/short, M/regular, M/long, L/regular, and L/long
Weight	Varies by size. Nominal weight < 5 lb suit.
Package Size and Volume	Coat and trouser packaged separately. Nominal 10 in x 6 in x 3 in vacuum sealed package size for each piece.
Power Requirements	None
Material Type	Two layer fabric system with shell of 100 % cotton and Saratoga permeable liner of activated carbon spheres on polyester jersey. Not fire resistant (FR) (custom FR design available).
Construction Type	Seam sealing not required in Saratoga garments
Color	Navy blue. Other colors may be available by custom order.

Logistical Parameters

Ease of Use	Lightweight, comfortable with integral hood compatible with most masks. Low thermal burden and level of protection allow for extended wear time. Easy donning.
Consumables	None
Maintenance Requirements	General suit inspection. Standard laundering. Record wear use and laundering.
Shelf Life	10 yr
Transportability	Vacuum sealed, compact package
Operational Limitations	Durable. Long wear life. Passes chemical protection requirements after 24-h/45-d field test.
Environmental Conditions	No environmental usage limitations. Not effected by rain, fog, snow or salt water.
Unit Cost	\$250 per system

Maintenance Cost	None
Warranty	Free of material and workmanship defects for 1 yr
Don/Doff Information	Assistance is not required. Assistance in checking mask/hood interface is recommended.
Use/Reuse	Reusable and launderable. Dispose of contaminated suits in a safe and approved manner.
Launderability	Suit is launderable six times for hygienic purposes. Standard home laundering.
Accessories	Polyethylene storage bag. Instruction manual. Suit may be purchased as package with Saratoga gloves and socks.

Special Requirements

Training Requirements	No special training required
Training Available	Training video available from manufacturer
Manuals Available	Instruction manual
Surveillance Testing Requirements	No testing required. Inspection for tears and damage required.
Support Equipment	Chemical warfare protective mask, gloves, and socks or overboots
Testing Information	Independent test data/certificate of compliance is available upon request
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD equipment in CB environment

General

Name

Saratoga Joint Service Lightweight Integrated Suit (JSLIST)

ID # 78



Technology

Permeable Saratoga carbon sphere sorptive technology. Two layer approach. The inner filter layer is composed of carbon spherical absorbers laminated between PBI/Aramid material (lightweight polyester material). The outer layer is composed of a cotton ripstop material treated for durability and liquid resistance.

Stock Number

8415-01-444-XXXX depending on size and color

Protection Type

Percutaneous

Equipment Category

Overgarment (OG), a universal, lightweight, two-piece, front-opening garment that can be worn as an overgarment or as a primary uniform over personal underwear

Availability

Fielded April 1997. Currently in production.

Current User(s)

Department of Defense—Joint Services
Marine Corps System Command
Quantico, VA 22134
POC: Mr. Doug Bryce
703-784-6675

Manufacturer

Tex-Shield, Inc.
5206 Morrowick Rd
Charlotte, NC 28226
POC: Nona Fahl
704-341-3681 (Tel)
704-341-3468 (Fax)

Manufacturer Type

Domestic and Foreign

Developer

Department of Defense—Joint Services
Marine Corps System Command
Quantico, VA 22134
Mr. Doug Bryce
703-784-6675 (Tel)

Source

Tex-Shield, Inc.

Certification

Department of Defense certification. Tex-shield is sole source for material for JSLIST overgarment. DoD certified material per PD97-04.

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

All classes of chemical warfare agents when used as directed with chemical warfare protective mask, gloves, and overboots or socks

**Biological Warfare (BW)
Agents Protected Against**

Protects against biological warfare agents when used as directed with appropriate mask, gloves, and overboots or socks

**Toxic Industrial Materials
(TIMs) Protected Against**

Not tested

Duration of Protection

Qualified by the DoD to meet the requirements for protection from chemical warfare agents for up to six launderings, 45 d wear, 120 calendar days after removal from factory sealed bag or 24 h after contamination

Recommended Use(s)

Tactical, crisis management, all law enforcement, and first responders

Physical Parameters

Sizes Available

S/X-short, S/short, M/short, M/regular, M/long, L/regular, and L/long

Weight

Varies by size. Nominal weight < 5 lb suit

Package Size and Volume

Coat and trouser packaged separately. Nominal 10 in x 6 in x 3 in vacuum sealed package size for each piece.

Power Requirements

None

Material Type

Two layer fabric system with shell of 50/50 nylon/cotton. Carbon spherical absorbers located between PBI/Aramid material. Not FR.

Construction Type

Seam sealing not required in Saratoga garments

Color

Woodland or desert camouflage

Logistical Parameters

Ease of Use

Universal lightweight, two piece, front-opening garment can be worn as an overgarment or as a primary uniform over personal underwear. It has integral hood, bellows-type sockets, high-waist trousers, adjustable suspenders, adjustable waistband, and waist length jacket. Low thermal burden-less bulk; lightweight. Design improves system acceptance and maximizes compatibility and user individual equipment compatibility.

Consumables

None

Maintenance Requirements

General suit inspection. Standard laundering. Record wear use and laundering.

Shelf Life

10 yr

Transportability

Vacuum sealed, compact package

Operational Limitations

Durable overgarment. Long wear life. Passes chemical protection requirements after 24 h to 45 d field test. Low thermal burden and level of protection allow for extended wear time.

Environmental Conditions	No environmental usage limitations. Not effected by rain, fog, snow or salt water.
Unit Cost	\$250 per suit
Maintenance Cost	None
Warranty	Free of material and workmanship defects for 1 yr
Don/Doff Information	Assistance is not required. Assistance in checking mask/hood interface is recommended. Suspenders, drawstring cords, and Velcro closures for easy donning.
Use/Reuse	Reusable and launderable. Dispose of contaminated suits in a safe and approved manner.
Launderability	Suit is launderable six times for hygienic purposes. Standard home laundering.
Accessories	Polyethylene storage bag. Instruction manual. Suit may be purchased as package with Saratoga gloves and socks.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	DoD JSLIST training video available from manufacturer
Manuals Available	Instruction manual
Surveillance Testing Requirements	No testing required. Inspection for tears and damage required.
Support Equipment	Chemical warfare protective mask, gloves, and socks or overboots
Testing Information	Only DoD certified material per PD 97-04. Independent test data/certification of compliance is available upon request.
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD equipment in CB environment

General

Name

Trelchem[®] High Performance Suit (HPS) Level A

ID # 79



Technology

Trelchem[®] is the trade name of a range of chemical protective suits. Red Viton[®]/butyl rubber coated fabric on the outside and polymer barrier laminate on the inside. Gas and liquid tight fabric construction.

Stock Number

M: 477400177
L: 477400178
XL: 477400179
XXL: 477400180

Protection Type

Level A, Percutaneous

Equipment Category

Level A, chemical protective suit

Availability

Stocked item, off the shelf at the manufacturers U.S. distribution point

Current User(s)

Used by, e.g., fire and rescue services/HAZMAT teams, chemical industry, and the U.S. Army Chem Demil

Manufacturer

Trelleborg Industries
Ystad Sweden
Local Distribution:
call 800-344-4458 for nearest location

Manufacturer Type

Foreign

Developer

Trelleborg Industries
Ystad Sweden

Source

Trelleborg Viking, Inc.
170 West Road, Suite 1
Portsmouth, NH 03801
603-436-1236 (Tel)
800-344-4458 (Tel)
603-436-1392 (Fax)

Certification

NFPA 1991/2000 (USA), EN943 (European)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Strong and durable, offers more than 8 h protection from a wide range of different chemicals including chemical warfare agents

**Biological Warfare (BW)
Agents Protected Against**

All suits are vapor and liquid tight

**Toxic Industrial Materials
(TIMs) Protected Against**

Material is protective against the 21 chemicals listed in ASTM F1001 and numerous other TIMs and 450 additional chemicals and gases. Carbon disulfide, chlorine, ethylene oxide, hydrogen chloride, sodium hydroxide, and sulfuric acid.

Duration of Protection

1 h to 8 h depending on the chemical or CW agent

Recommended Use(s)

All Level A, in Zone 1 and 2

Physical Parameters

Sizes Available

S, M, L, XL, and XXL

Weight

Approx. 17 lb

Package Size and Volume

30.5 in L x 23 in W x 8.5 in H

Power Requirements

Compressed air source for testing suits

Material Type

Viton[®]/butyl rubber coated fabric on outside and polymer barrier laminate on inside. Visor made of high impact 2 mm PVC. Inner gloves are made of multi-layer silver polymer laminate. Outer gloves made of chloroprene runner. Kevlar gloves (for mechanical protection) are worn over other gloves. Footwear—integrated booties in primary material. HAZMAT safety boots worn over booties.

Construction Type

Sewn and heat sealed; aramid thread

Color

Orange-Red

Logistical Parameters

Ease of Use

Designed by a tailor for comfort and fit

Consumables

Gloves

Maintenance Requirements

Pressure test every 6 mo, zipper lubrication, and cool storage

Shelf Life

10 yr

Transportability

Stored on board HAZMAT trucks, fire trucks and HAZMAT trailers

Operational Limitations

Duration of air source

Environmental Conditions

All. Suit ventilation systems available. Operational temperature range is -33 °F to 149 °F.

Unit Cost

\$4.5K

Maintenance Cost

Minimal testing time, cleaning time, patching as needed, glove replacement

Warranty

10 yr shelf life with 5 yr manufacturer defect warranty, with five free annual pressure test and inspections

Don/Doff Information	2 min 10 s for doffing
Use/Reuse	Reusable
Launderability	Yes, mild soap and water with brush or cloth; let air-dry. If stained, use white spirit followed with a rinse of lukewarm water and mild detergent, followed by a clear water rinse.
Accessories	Suit bags, hangers, gloves, test kits, repair kits, CDROM, and suit manual
<u>Special Requirements</u>	
Training Requirements	Donning and doffing, maintenance, testing, and repair
Training Available	CDROM trainer and on site factory reps
Manuals Available	CDROM and hard copy suit manual
Surveillance Testing Requirements	Inspect upon delivery, after each use and/or repair, or at least every 6 mo
Support Equipment	Test kits, repair kit, and compressed air equipment
Testing Information	Not specified
Applicable Regulations	ASTM F739 and NFPA 1991/2000
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Yes, suits are used by various military units

General

Name

Trelchem[®] TLU (Limited Use) Level A

ID # 80



Technology

Trelchem[®] is the trade name of a range of chemical protective suits. Made with a polyamide fabric coated with barrier film lamination, the outside and inside layers offering protection against exposure to a wide range of chemicals. Gas and liquid tight fabric construction (limited use).

Stock Number

M: 475751001
L: 475751002
XL: 475751003
XXL: 47575004

Protection Type

Level A, Percutaneous, and limited use

Equipment Category

Level A, chemical protective suit

Availability

Stocked item, off the shelf at the manufacturers U.S. distribution point

Current User(s)

Used by, e.g., fire and rescue services/HAZMAT teams, chemical industry, and the U.S. Army

Manufacturer

Trelleborg Industries
Ystad Sweden
Local Distribution:
Call 800-344-4458 for nearest location

Manufacturer Type

Foreign

Developer

Trelleborg Industries
Ystad Sweden

Source

Trelleborg Viking, Inc.
170 West Road, Suite 1
Portsmouth, NH 03801
603-436-1236 (Tel)
800-344-4458 (Tel)
603-436-1392 (Fax)

Certification

NFPA 1991/2000 (USA), EN943 (European)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Strong and durable, offers more than 8 h protection from a wide range of different chemicals including chemical warfare agents

**Biological Warfare (BW)
Agents Protected Against**

All suits are vapor and liquid tight

**Toxic Industrial Materials
(TIMs) Protected Against**

Carbon disulfide, chlorine, ethylene oxide, hydrogen chloride, sodium hydroxide, and sulfuric acid

Duration of Protection

1 h to 8 h depending on the chemical or CW agent

Recommended Use(s)

All Level A, in Zone 1 and 2

Physical Parameters

Sizes Available

S, M, L, XL, and XXL

Weight

Approx. 13 lb

Package Size and Volume

30.5 in L x 23 in W x 8.5 in H

Power Requirements

Compressed air source for testing suits

Material Type

Barrier film laminate on inside and outside, over fabric substrate. Inner gloves are made of multi-layer silver polymer laminate. Outer gloves made of chloroprene rubber. Kevlar gloves (for mechanical protection) are worn over other gloves. Footwear—integrated booties in primary material. HAZMAT safety boots worn over booties.

Construction Type

Sewn and heat sealed; aramid thread

Color

White

Logistical Parameters

Ease of Use

Designed by a tailor for comfort and fit

Consumables

Gloves

Maintenance Requirements

Pressure test every 6 mo, zipper lubrication, and cool storage

Shelf Life

5 yr

Transportability

Stored on board HAZMAT trucks, fire trucks and HAZMAT trailers

Operational Limitations

Duration of air source

Environmental Conditions

All, suit ventilation systems available. Operational temperature range is -33 °F to 149 °F.

Unit Cost

\$650—standard
\$1.35K with NFPA certified overcover

Maintenance Cost

Minimal testing time, cleaning time, patching as needed, and glove replacement

Warranty

1 y

Don/Doff Information

2 min 10 s for doffing

Use/Reuse

Limited use one time exposure

Laundryability	Yes, mild soap and water with brush or cloth; let air-dry. If stained, use white spirit followed with a rinse of lukewarm water and mild detergent, followed by a clear water rinse.
Accessories	Suit bags, hangers, gloves, test kits, repair kits, CDROM, and suit manual
<u>Special Requirements</u>	
Training Requirements	Donning and doffing, maintenance, testing, and repair
Training Available	CDROM trainer and on site factory reps
Manuals Available	CDROM and hard copy suit manual
Surveillance Testing Requirements	Inspect upon delivery, after each use and/or repair, or at least every 6 mo
Support Equipment	Test kits, repair kit, and compressed air equipment
Testing Information	Not specified
Applicable Regulations	ASTM F739 and NFPA 1991/2000
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Yes, suits are used by various military units

General

Name

Trellechem[®] Vapor Barrier Suit (VPI) Level A

ID # 81



Technology

Trellechem[®] is the trade name of a range of chemical protective suits. Yellow chloroprene rubber coated fabric on outside and polymer barrier laminate on inside. Gas and liquid tight fabric construction.

Stock Number

M: 476400199
L: 476400200
XL: 476400201
XXL: 476400202

Protection Type

Level A, Percutaneous

Equipment Category

Level A, chemical protective suit

Availability

Stocked item, off the shelf at the manufacturers U.S. distribution point

Current User(s)

Used by, for example, fire and rescue services/HAZMAT teams, and chemical industry

Manufacturer

Trelleborg Industries
Ystad Sweden
Local Distribution:
Call 800-344-4458 for nearest location
Foreign

Manufacturer Type

Developer

Trelleborg Industries
Ystad Sweden

Source

Trelleborg Viking, Inc.
170 West Road, Suite 1
Portsmouth, NH 03801
603-436-1236 (Tel)
800-344-4458 (Tel)
603-436-1392 (Fax)

Certification

NFPA 1991/2000 (USA), EN943 (European)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Strong and durable, offers more than 8 h protection from a wide range of different chemicals including chemical warfare agents

**Biological Warfare (BW)
Agents Protected Against**

All suits are vapor and liquid tight

Toxic Industrial Materials (TIMs) Protected Against

Material is protective against the 21 chemicals listed in ASTM F1001 and numerous other TIMs and 450 additional chemicals and gases. Carbon disulfide, chlorine, ethylene oxide, hydrogen chloride, sodium hydroxide, and sulfuric acid.

Duration of Protection

1 h to 8 h depending on the chemical or CW agent

Recommended Use(s)

All Level A, in Zone 1 and 2

Physical Parameters

Sizes Available

S, M, L, XL, and XXL

Weight

Approx. 15 lb

Package Size and Volume

30.5 in L x 23 in W x 8.5 in H

Power Requirements

Compressed air source for testing suits

Material Type

Chloroprene with fabric substrate barrier film on the inside. Inner gloves are made of multi-layer silver polymer laminate. Outer gloves made of chloroprene rubber. Kevlar gloves (for mechanical protection) are worn over other gloves. Footwear—integrated booties in primary material. HAZMAT safety boots worn over booties.

Construction Type

Sewn and heat sealed; aramid thread

Color

Yellow

Logistical Parameters

Ease of Use

Designed by a tailor for comfort and fit

Consumables

Gloves

Maintenance Requirements

Pressure test every 6 mo, zipper lubrication, and cool storage

Shelf Life

5 yr

Transportability

Stored on board HAZMAT trucks, fire trucks, and HAZMAT trailers

Operational Limitations

Duration of air source

Environmental Conditions

All, suit ventilation systems available. Operational temperature range is -33 °F to 149 °F.

Unit Cost

\$1.99K

Maintenance Cost

Minimal testing time, cleaning time, patching as needed, and glove replacement

Warranty

10 yr shelf life with 5 yr manufacturer defect warranty, free annual pressure test, and inspection for 3 yr

Don/Doff Information

2 min 10 s for doffing

Use/Reuse

Reusable

Launderability	Yes, mild soap and water with brush or cloth; let air-dry. If stained, use white spirit followed with a rinse of lukewarm water and mild detergent, followed by a clear water rinse.
Accessories	Suit bags, hangers, gloves, test kits, repair kits, CDROM, and suit manual
<u>Special Requirements</u>	
Training Requirements	Donning and doffing, maintenance, testing and repair
Training Available	CDROM trainer and on site factory reps
Manuals Available	CDROM and hard copy suit manual
Surveillance Testing Requirements	Inspect upon delivery, after each use and/or repair, or at least every 6 mo
Support Equipment	Test kits, repair kit, and compressed air equipment
Testing Information	Not specified
Applicable Regulations	ASTM F739 and NFPA 1991/2000
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Yes, suits are used by various military units

General

Name

Trellechem[®] Vapor Barrier Suit (VPS) Level A

ID # 82



Technology

Trellechem[®] is the trade name of a range of chemical protective suits. Yellow chloroprene rubber coated fabric on outside and polymer barrier laminate on inside. Gas and liquid tight fabric construction.

Stock Number

M: 476400199
L: 476400200
XL: 476400201
XXL: 476400202

Protection Type

Level A, Percutaneous

Equipment Category

Level A, chemical protective suit

Availability

Stocked item, off the shelf at the manufacturers U.S. distribution point

Current User(s)

Used by, e.g., fire and rescue services/HAZMAT teams, and chemical industry

Manufacturer

Trelleborg Industries
Ystad Sweden
Local Distribution:
Call 800-344-4458 for nearest location

Manufacturer Type

Foreign

Developer

Trelleborg Industries
Ystad Sweden

Source

Trelleborg Viking, Inc.
170 West Road, Suite 1
Portsmouth, NH 03801
603-436-1236 (Tel)
800-344-4458 (Tel)
603-436-1392 (Fax)

Certification

NFPA 1991/2000 (USA), EN943 (European)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Strong and durable, offers more than 8 h protection from a wide range of different chemicals including chemical warfare agents

**Biological Warfare (BW)
Agents Protected Against**

All suits are vapor and liquid tight

Toxic Industrial Materials (TIMs) Protected Against

Material is protective against the 21 chemicals listed in ASTM F1001 and numerous other TIMs and 450 additional chemicals and gases. Carbon disulfide, chlorine, ethylene oxide, hydrogen chloride, sodium hydroxide, and sulfuric acid.

Duration of Protection

1 h to 8 h depending on the chemical or CW agent

Recommended Use(s)

All Level A, in Zone 1 and 2

Physical Parameters

Sizes Available

S, M, L, XL, and XXL

Weight

Approximately 15 lb

Package Size and Volume

30.5 in L x 23 in W x 8.5 in H

Power Requirements

Compressed air source for testing suits

Material Type

Chloroprene with fabric substrate barrier film on the inside. Inner gloves are made of multi-layer silver polymer laminate. Outer gloves made of chloroprene rubber. Kevlar gloves (for mechanical protection) are worn over other gloves. Footwear—integrated booties in primary material. HAZMAT safety boots worn over booties.

Construction Type

Sewn and heat sealed; aramid thread

Color

Yellow

Logistical Parameters

Ease of Use

Designed by a tailor for comfort and fit

Consumables

Gloves

Maintenance Requirements

Pressure test every 6 mo, zipper lubrication, and cool storage

Shelf Life

5 yr

Transportability

Stored on board HAZMAT trucks, fire trucks, and HAZMAT trailers

Operational Limitations

Duration of air source

Environmental Conditions

All, suit ventilation systems available. Operational temperature range is -33 °F to 149 °F.

Unit Cost

\$3.2K

Maintenance Cost

Minimal testing time, cleaning time, patching as needed, and glove replacement

Warranty

10 yr shelf life with 5 yr manufacturer defect warranty

Don/Doff Information

2 min 10 s for doffing

Use/Reuse

Reusable

Launderability	Yes, mild soap and water with brush or cloth; let air-dry. If stained, use white spirit followed with a rinse of lukewarm water and mild detergent, followed by a clear water rinse.
Accessories	Suit bags, hangers, gloves, test kits, repair kits, CDROM, and suit manual
<u>Special Requirements</u>	
Training Requirements	Donning and doffing, maintenance, testing, and repair
Training Available	CDROM trainer and on site factory reps
Manuals Available	CDROM and hard copy suit manual
Surveillance Testing Requirements	Inspect upon delivery, after each use and/or repair, or at least every 6 mo
Support Equipment	Test kits, repair kit, and compressed air equipment
Testing Information	Not specified
Applicable Regulations	ASTM F739 and NFPA 1991/2000
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Yes, suits are used by various military units

General

Name

Disposable Toxicological Agent Protective Suit (DTAPS)/Level C1

ID # 83



Technology

Level C (Field) Suit—DuPont Barricade, an impermeable nonwoven multi-laminate material

Stock Number

GEOMET P/N 38279 (for field use)

Protection Type

Level C, Percutaneous, and respiratory

Equipment Category

Level C1 toxicological agent protective suit, disposable (field use)

Availability

June 1, 2001

Current User(s)

Not applicable

Manufacturer

GEOMET Technologies, Inc.
20251 Century Blvd., Suite 300
Germantown, MD 20874
POC: Jef Harris
301-428-9898 (Tel)
301-428-9482 (Fax)

Manufacturer Type

Domestic

Developer

GEOMET Technologies, Inc., Germantown, MD, under contract with the Office of Special Technology

Source

www.nbcprotect.com

Certification

Projected to be certified under NFPA 1994

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Material swatches tested against GA, GB, GD, GF, t-HD, HN, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Material is protective against bacteria, protozoans, rickettsia, toxins, and viruses. Biopenetration resistance testing in accordance with ASTM F 1671, Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Blood-Borne Pathogens Using Phi-X174 Bacteriophage Penetration as a Test System.

Toxic Industrial Materials (TIMs) Protected Against

Material is protective against the 21 chemicals listed in ASTM F 1001 and numerous other TIMs. For specific chemicals, refer to DuPont's Permeation Guide for Tychem Fabrics and the DuPont Tyvek Fax-on-Demand Data Service (800-558-9329).

Duration of Protection	Over 8 h for most chemicals
Recommended Use(s)	Military, Federal, State and local first responders to CB incidents in non-IDLH situations. The Level C1 ensemble is targeted for field use by users such as EMS, police, fire department, and forensic personnel.
<u>Physical Parameters</u>	
Sizes Available	S, M, L, XL, XXL, and XXXL
Weight	Approximately 4 lb 8 oz for size small up to 5 lb for size XXXL
Package Size and Volume	From 20 in x 20 in x 6 in (1.39 ft ³) for size small to 25 in x 20 in x 8 in (to 2.31 ft ³) for size XXXL
Power Requirements	4 cfm PAPR blower requires lithium battery pack. Optional cooling system requires three size D alkaline batteries which will last up to 4 h.
Material Type	3 mil Tychem LV an impermeable nonwoven multi-laminant material
Construction Type	Sewn and seams heat sealed with overtape
Color	Olive drab green
<u>Logistical Parameters</u>	
Ease of Use	Level C1 DTAP suit features fully integrated sub-systems. Suit presents minimal restrictions on mobility and flexibility.
Consumables	4 cfm PAPR blower requires two filter canisters. Lithium battery pack can be stored for up to 10 yr. If using optional cooling system, three size D alkaline batteries and ice are consumable items.
Maintenance Requirements	None
Shelf Life	5 yr— store at room temperature
Transportability	Suit will be sealed in a plastic bag
Operational Limitations	Minimal. Operations can be extended with the optional cooling system to manage heat stress.
Environmental Conditions	The equipment is designed to operate under all common environmental conditions and climates
Unit Cost	\$122 to \$137 (suit); PAPR splash hood \$96; 4 cfm PAPR \$487 (includes face mask, hose, battery pack, mounting belt, and two filter canisters)
Maintenance Cost	None
Warranty	1 yr (parts and labor)
Don/Doff Information	“Buddy” required for donning. System can be doffed by the user.
Use/Reuse	Level C1 suit is disposable. However, if not contaminated during emergency operations, suit can be downgraded for use as a training suit. Suits must be disposed after any liquid or vapor chemical exposure. PAPR splash hood can be reused until torn or worn through.

Laundryability	Hand wash with mild detergent and biocide after each training use; suit can be laundered and reused as a training suit only
Accessories	16 mil butyl gloves, integral booties, 4 cfm blower, facemask, PAPR splash hood. Cooling system is available as an option.
<u>Special Requirements</u>	
Training Requirements	2 h for operation
Training Available	Yes
Manuals Available	Commercial operating manuals
Surveillance Testing Requirements	None
Support Equipment	Chemical protective boots. Cooling system is available as an option, which requires ice or a freezer to freeze ice bottles.
Testing Information	U.S. Army methyl salicylate (MeS) man-in-simulant test (MIST, TOP 10-2-022); passed ASTM Spray Test (ASTM F 1359-97); ASTM D 751 = 35 lbf; ASTM D 2582 = 7 lbf; ASTM D 747 = 0.50 in-lbf
Applicable Regulations	29 CFR 1910.120
Health Hazards	All materials are considered nonhazardous. MSDS on Tychem LV material available upon request. Contaminated suits should be treated as hazardous waste and must be disposed of in accordance with established procedures, regulations, and laws. Contaminated garments should be landfilled, but can be incinerated.
Communications Interface Capability	Facemask has integral speaking diaphragm
EOD Compatibility	Not to be used with fused munitions or in explosive or flammable atmospheres

General

Name

Disposable Toxicological Agent Protective Suit (DTAPS)/Level C2

ID # 84



Technology

Level C (Hospital) Suit— DuPont Tychem SL impermeable material.
Level C Air Supplied Hood— DuPont Tychem SL impermeable material

Stock Number

GEOMET P/N 38280 (for hospital use)

Protection Type

Level C, Percutaneous, and respiratory

Equipment Category

Level C2 toxicological agent protective suit, disposable (for hospital use)

Availability

June 1, 2001

Current User(s)

Not applicable

Manufacturer

GEOMET Technologies, Inc.
20251 Century Blvd., Suite 300
Germantown, MD 20874
POC: Jef Harris
301-428-9898 (Tel)
301-428-9482 (Fax)

Manufacturer Type

Domestic

Developer

GEOMET Technologies, Inc., Germantown, MD, under contract with the Office of Special Technology

Source

www.nbcprotect.com

Certification

Projected to be certified under NFPA 1994

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Material swatches tested against GB, t-HD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Material is protective against bacteria, protozoans, rickettsia, toxins, and viruses. Biopenetration resistance testing in accordance with ASTM F 1671, Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Blood-Borne Pathogens Using Phi-X174 Bacteriophage Penetration as a Test System.

Toxic Industrial Materials (TIMs) Protected Against

For specific chemicals, refer to DuPont’s Permeation Guide for Tychem Fabrics and the DuPont Tyvek Fax-on-Demand Data Service at 800–558–9329

Duration of Protection

Over 8 h for many chemicals

Recommended Use(s)

The Level C2 DTAPS is designed primarily for indoor use for operations such as patient decontamination and medical treatment. The ensemble is targeted for use by doctors, nurses, and forensics personnel in a hospital-type setting.

Physical Parameters

Sizes Available

S, M, L, XL, XXL, and XXXL

Weight

Approximately 1 lb 9 oz for size small to 2 lb for size XXXL (suit only). 6 cfm PAPR, including hood, batteries, hose, and three canisters is 5 lb 11 oz.

Package Size and Volume

From 24 in x 16 in x 10 in (2.2 ft³) for size small to 29 in x 16 in x 10 in (to 2.7 ft³) for size XXXL (complete ensemble)

Power Requirements

6 cfm PAPR blower requires six size D alkaline batteries. Optional cooling system requires three size D alkaline batteries, which will last up to 4 h.

Material Type

Tychem SL, an impermeable nonwoven multi-laminant material

Construction Type

Sewn and seams heat sealed with overtape

Color

White

Logistical Parameters

Ease of Use

This suit features fully integrated sub-systems. Suit presents minimal restrictions on mobility and flexibility.

Consumables

6 cfm PAPR blower requires six size D alkaline batteries and three filter canisters. If using optional cooling system, three size D alkaline batteries and ice are consumable items.

Maintenance Requirements

None

Shelf Life

5 yr—store at room temperature

Transportability

Suit will be sealed in a plastic bag

Operational Limitations

Minimal. Operations can be extended with the optional cooling system to manage heat stress.

Environmental Conditions

The ensemble is designed to operate under all common indoor environmental conditions

Unit Cost

\$73 to \$81 (suit); overboots \$13.50; 6 cfm PAPR \$418 (includes air-supplied hood, hose, batteries, mounting belt, and three filter canisters)

Maintenance Cost

None

Warranty

1 yr (parts and labor)

Don/Doff Information	System can be donned and doffed by the user
Use/Reuse	Level C2 suit should be disposed after any use. Suits MUST be disposed after any liquid or vapor chemical exposure.
Launderability	Not launderable; suit should be disposed after use
Accessories	System comes with 16 mil butyl gloves, 6 cfm PAPR blower, air-supplied hood, and latex overboots
<u>Special Requirements</u>	
Training Requirements	2 h for operation
Training Available	Yes
Manuals Available	Commercial operating manuals
Surveillance Testing Requirements	None
Support Equipment	Cooling system is available as an option, which requires ice or a freezer to freeze ice bottles
Testing Information	U.S. Army methyl salicylate (MeS) man-in-simulant test (MIST, TOP 10-2-022); passed ASTM Spray Test (ASTM F 1359-97); ASTM D 751 = 35 lbf; ASTM D 2582 = 7 lbf; ASTM D 747 = 0.50 lbf/in
Applicable Regulations	29 CFR 1910.120
Health Hazards	All materials are considered nonhazardous. MSDS on Tychem SL material available upon request. Contaminated suits should be treated as hazardous waste and must be decontaminated and disposed of in accordance with established procedures, regulations, and laws. Contaminated garments should be landfilled, but can be incinerated.
Communications Interface Capability	Level C2 DTAPS is compatible with various commercial radio systems, such as a boom microphone radio system
EOD Compatibility	Not to be used with fused munitions or in explosive or flammable atmospheres

General

Name

Demilitarization Protective Ensembles (DPEs)

ID # 85

Picture Not Available

Technology

Each suit contains an infrared communication window as well as backflow protection valve and high-visibility hood

Stock Number

Not specified

Protection Type

Percutaneous and respiratory

Equipment Category

Ensemble. Each suit contains an infrared communication window as well as backflow protection valve and high-visibility hood.

Availability

Not specified

Current User(s)

Not specified

Manufacturer

Vinyl Technology, Inc.
200-T Railroad Ave
Monrovia, CA 91016-4643
626-443-5257 (Tel)
626-443-0531 (Fax)

Manufacturer Type

Not specified

Developer

Rockwell International

Source

Internet: Vinyl Technology, Inc.

Certification

Not specified

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not specified

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Not specified

Duration of Protection

Not specified

Recommended Use(s)

Chemical Weapons Disposal Program

Physical Parameters

Sizes Available

Not specified

Weight

Not specified

Package Size and Volume

Not specified

Power Requirements	Not specified
Material Type	Not specified
Construction Type	Not specified
Color	Not specified

Logistical Parameters

Ease of Use	Not specified
Consumables	Not specified
Maintenance Requirements	Not specified
Shelf Life	Not specified
Transportability	Not specified
Operational Limitations	Not specified
Environmental Conditions	Not specified
Unit Cost	Not specified
Maintenance Cost	Not specified
Warranty	Not specified
Don/Doff Information	Not specified
Use/Reuse	Not specified
Launderability	Not specified
Accessories	Not specified

Special Requirements

Training Requirements	Not specified
Training Available	Not specified
Manuals Available	Not specified
Surveillance Testing Requirements	Not specified
Support Equipment	Backflow protection valve and high-visibility hood
Testing Information	Not specified
Applicable Regulations	Not specified
Health Hazards	Not specified

**Communications Interface
Capability**

Infrared communication window

EOD Compatibility

Not specified

General

Name

“Hot” Operation: Air-Fed Garments

ID # 86

Picture Not Available

Technology

A variety of molded parts and sub assemblies

Stock Number

Not specified

Protection Type

Percutaneous and respiratory—radioactive contamination protection

Equipment Category

Ensemble

Availability

Not specified

Current User(s)

Department of Energy

Manufacturer

Vinyl Technology, Inc.
200-T Railroad Ave
Monrovia, CA 91016-4643
626-443-5257 (Tel)
626-443-0531 (Fax)

Manufacturer Type

Developer

Rockwell International

Source

Internet: Vinyl Technology, Inc.

Certification

Not specified

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not specified

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Not specified

Duration of Protection

Not specified

Recommended Use(s)

Not specified

Physical Parameters

Sizes Available

Not specified

Weight

Not specified

Package Size and Volume

Not specified

Power Requirements

Not applicable

Material Type

Not specified

Construction Type

Not specified

Color Not specified

Logistical Parameters

Ease of Use Not specified

Consumables Not specified

Maintenance Requirements Not specified

Shelf Life Not specified

Transportability Not specified

Operational Limitations Not specified

Environmental Conditions Not specified

Unit Cost Not specified

Maintenance Cost Not specified

Warranty Not specified

Don/Doff Information Not specified

Use/Reuse Not specified

Launderability Not specified

Accessories Not specified

Special Requirements

Training Requirements Not specified

Training Available Not specified

Manuals Available Not specified

Surveillance Testing Requirements Not specified

Support Equipment Not specified

Testing Information Not specified

Applicable Regulations Not specified

Health Hazards Not specified

Communications Interface Capability Not specified

EOD Compatibility Not specified

General

Name

CCA_DuPont Tyvek® F Coverall

ID # 87



Technology

Percutaneous - barrier fabric
TYVEK® “F” is manufactured by laminating the basic TYVEK® flash-spunbonded polyethylene material to a barrier film which is coated with a polymer. The top polymer layer allows seams to be made with a heat-sealing tape which includes the same barrier film and polymer as TYVEK® “F.” Known chemical warfare agents will not permeate these seams.

Stock Number

TF – size

Protection Type

Percutaneous

Equipment Category

Coverall, designed to protect workers from hazardous materials or sensitive products and processes from contamination by people

Availability

Commercially available

Current User(s)

FBI, Secret Service, NYC Police, White House Military, and the U.S. Army TEC Escort

Manufacturer

CCA, Manchester, England
DuPont Europe and CCA
DuPont Protective Apparel

Manufacturer Type

Foreign

Developer

DuPont Europe

Source

DuPont Europe and CCA
DuPont Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)
www.protectivesuits.com

Certification

CE certification

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, L, and GB

**Biological Warfare (BW)
Agents Protected Against**

Anthrax, Toxins

Toxic Industrial Materials (TIMs) Protected Against

There are over 50 industrial chemicals that Tyvek F protects against. A full list can be supplied if needed.

Duration of Protection

Different agents will result in different breakthrough times

Recommended Use(s)

Not specified

Physical Parameters

Sizes Available

Small to XXXL

Weight

8 oz

Package Size and Volume

Vacuum packed. Dimensions of the packed suit are 6 in x 8 in x 1/2 in.

Power Requirements

Not applicable

Material Type

TYVEK® “F” is manufactured by laminating the basic TYVEK® flash-spunbonded polyethylene material to a barrier film which is coated with a polymer. The top polymer layer allows seams to be made with a heat-sealing tape which includes the same barrier film and polymer as Tyvek® “F.” Known chemical warfare agents will not permeate these seams.

Construction Type

All seams are stitched then tape welded. Specified seam construction ensures seam strength, durability and integrity of the coverall. Garment design, seams, and closures adapted to barrier requirements. Carries the CE mark for chemical protective clothing, which is category III PPE.

Color

Grey and green

Logistical Parameters

Ease of Use

Wearer has plenty of movement room and the suit is extremely light weight

Consumables

Not applicable

Maintenance Requirements

None needed, except for proper storage

Shelf Life

Shelf Life: 10 yr when adequately packed

Transportability

Suit is vacuum packed and is very easily packed for mass suit transport

Operational Limitations

Like all protective clothing, care must be taken around sharp objects and rough areas. Suit will hold up with normal operational use. Suits will work under different environmental conditions (i.e., rain, snow, and sleet).

Environmental Conditions

Not applicable

Unit Cost

\$33 to \$39/unit

Maintenance Cost

None

Warranty

Shelf like guarantee of 8 yr

Don/Doff Information

No assistance required for donning and doffing

Use/Reuse

Yes

Laundryability	Not applicable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	About 1 min
Training Available	Yes
Manuals Available	Not applicable
Surveillance Testing Requirements	Inspection for holes and proper storage environment
Support Equipment	None
Testing Information	DuPont Europe has done testing. Aberdeen Proving Ground is continually testing the suit.
	Chemical Warfare Agent Protection: TYVEK® “F” provides an exceptionally high level of protection for very long periods against all known chemical warfare agents. TYVEK® “F” has been tested and certified by the prestigious TNO Laboratories in the Netherlands having passed all the standard NATO tests for chemical warfare protection. In addition, chemical warfare testing facilities have satisfactorily subjected TYVEK® “F” to their own national test standards.
	Biological Warfare Agent Protection: Military TYVEK® “F” provides a total barrier against biological warfare agents. A protective suit made from TYVEK® “F” to keep out chemical warfare agents will also provide barrier protection against biological warfare agents. DuPont Europe has done testing. Aberdeen Proving Ground is continually testing the suit.
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name

Tychem® 10000 Coverall

ID # 88



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100120

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front coverall

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	6 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$159/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® 10000 Coverall

ID # 89



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100122

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, hood, boot, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$185/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem[®] 10000 Coverall

ID # 90



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100124

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, respirator fit hood, boots, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)

Agents Protected Against

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW)

Agents Protected Against

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$212/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None

Special Requirements

Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® 10000 Coverall

ID # 91



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$165/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/ yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem[®] 10000 Coverall

ID # 92



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, hood, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

6 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$175/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem[®] 10000 Coverall

ID # 93



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics. Pictured is stock # 100256.

Stock Number

100187

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, hood, expanded back, sock boots with flaps, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$245/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem[®] 10000 Coverall

ID # 94



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100256

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, hood, sock boots, with flap, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$209/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required.
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 9.5 oz/yd ² Thickness (ASTM D1777–64) 29 mils Mullen burst (ASTM D3786–87) 204 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tyvek® Coverall

ID # 95



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14120

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-84-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 25 units/ctn

Package Size and Volume

10 in W x 14 7/8 in L x 10 in L

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$106/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

Launderability

Not applicable. Not intended for reuse after exposure to hazardous materials.

Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	None required
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 1.2 oz/yd ² Thickness (ASTM D1777–64) 5.3 mils Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6 Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1 Tongue tear, lb (ASTM D2261 (MD/CD) Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tyvek® Coverall

ID # 96



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection	For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel . No test data for CW agents.
Recommended Use(s)	Crisis management (post decon); remediation
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	7 lb/ctn and 25 units/ctn
Package Size and Volume	14 7/8 in L x 10 1/2 in W x 10 in H
Power Requirements	Not applicable
Material Type	High density spunbonded polyethylene coated with polyethylene film
Construction Type	Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays
Color	White
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$122/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.
Launderability	Not applicable. Not intended for reuse after exposure to hazardous materials.
Accessories	None

Special Requirements

Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 1.2 oz/yd ² Thickness (ASTM D1777–64) 5.3 mils Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6 Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1 Tongue tear, lb (ASTM D2261 (MD/CD) Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tyvek® Coverall

ID # 97



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14126

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front with hood

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters**Sizes Available**

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 25 units/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters**Ease of Use**

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$132/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

Launderability

Not applicable. Not intended for reuse after exposure to hazardous materials.

Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	None required
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 1.2 oz/yd ² Thickness (ASTM D1777–64) 5.3 mils Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6 Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1 Tongue tear, lb (ASTM D2261 (MD/CD) Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tyvek® Coverall

ID # 98



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front with hood, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

8 lb/ctn and 25 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$131/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

Launderability

Not applicable. Not intended for reuse after exposure to hazardous materials.

Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	None required
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 1.2 oz/yd ² Thickness (ASTM D1777–64) 5.3 mils Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6 Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1 Tongue tear, lb (ASTM D2261 (MD/CD) Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tyvek® Coverall

ID # 99



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14261

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front with hood, skid resistant boots, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against
Toxic Industrial Materials
(TIMs) Protected Against**

Not specified

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

9 lb/ctn and 25 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$134/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

Laundryability	Not applicable. Not intended for reuse after exposure to hazardous materials.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request
Manuals Available	None required
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776-85) 1.2 oz/yd ² Thickness (ASTM D1777-64) 5.3 mils Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6 Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1 Tongue tear, lb (ASTM D2261 (MD/CD) Barrier data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem[®] QC Coverall

ID # 100



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

35120

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek[®] Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek[®] Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

6 lb/ctn and 12 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

Yellow and Grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$77/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength–Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® QC Coverall

ID# 101



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

35122

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, with hood, boots, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)

Not tested

Agents Protected Against

Biological Warfare (BW)

Not specified

Agents Protected Against

Toxic Industrial Materials(TIMs) Protected Against Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection For specific test data on TIMs, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s) Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available S through XXXXL. Additional sizes available upon request.

Weight 7 lb/ctn and 12 unit/ctn

Package Size and Volume 16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements Not applicable

Material Type Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color Yellow and Grey

Logistical Parameters

Ease of Use Ergonomically designed for maximum mobility and flexibility

Consumables None

Maintenance Requirements Visual inspection prior to use

Shelf Life Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability Easily transported

Operational Limitations Directly relates to the physical condition of user

Environmental Conditions Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost \$100/carton

Maintenance Cost Minimum labor cost for routine suit inspection

Warranty 90 d for workmanship and materials

Don/Doff Information No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories None

Special Requirements

Training Requirements No special training required

Training Available Yes. DuPont will provide specialized group training upon request.

Manuals Available Permeation Guide available

Surveillance Testing Requirements Visual inspection (for holes and tears) prior to use

Support Equipment Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information Physical properties:
Basis weight (ASTM D3776–85) 2.1 oz/yd²
Thickness (ASTM D1777–64) 6.0 mils
Mullen burst (ASTM D3786–87) 66 psi
Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb
Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb
Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations None

Health Hazards None

Communications Interface Capability Not applicable

EOD Compatibility Compatible with EOD suit

General

Name

Tychem® QC Coverall

ID# 102



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

35124

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, respirator hood, boots, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)

Not tested

Agents Protected Against

Biological Warfare (BW)

Not specified

Agents Protected Against

Toxic Industrial Materials(TIMs) Protected Against Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel .

Duration of Protection For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel . No test data available for CW agents.

Recommended Use(s) Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available S through XXXXL. Additional sizes available upon request.

Weight 7 lb/ctn and 12 unit/ctn

Package Size and Volume 14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements Not applicable

Material Type Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color Yellow and Grey

Logistical Parameters

Ease of Use Ergonomically designed for maximum mobility and flexibility

Consumables None

Maintenance Requirements Visual inspection prior to use

Shelf Life Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability Easily transported

Operational Limitations Directly relates to the physical condition of user

Environmental Conditions Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost \$111/carton

Maintenance Cost Minimum labor cost for routine suit inspection

Warranty 90 d for workmanship and materials

Don/Doff Information No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories None

Special Requirements

Training Requirements No special training required

Training Available Yes. DuPont will provide specialized group training upon request.

Manuals Available Permeation Guide available

Surveillance Testing Requirements Visual inspection (for holes and tears) prior to use

Support Equipment Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information Physical properties:
Basis weight (ASTM D3776–85) 2.1 oz/yd
Thickness (ASTM D1777–64) 6.0 mils
Mullen burst (ASTM D3786–87) 66 psi
Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb
Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb
Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations None

Health Hazards None

Communications Interface Capability Not applicable

EOD Compatibility Compatible with EOD suit

General

Name

Tychem® QC Coverall

ID# 103



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

35125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)

Not tested

Agents Protected Against

Biological Warfare (BW)

Not specified

Agents Protected Against

**Toxic Industrial
Materials(TIMs) Protected
Against**

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

6 lb/ctn and 12 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

Yellow and grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$80/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/DoFF Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None

Special Requirements

Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 104

Tychem® QC Coverall



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number 35127

Protection Type Percutaneous

Equipment Category Coverall; zipper front, hood, elastic wrist, and ankles

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against** Not specified

**Biological Warfare (BW)
Agents Protected Against** Not specified

Toxic Industrial Materials(TIMs) Protected Against	Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel . No test data available for CW agents.
Recommended Use(s)	Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	6 lb/ctn and 12 unit/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays
Color	Yellow and grey

Logistical Parameters

Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$87/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories None

Special Requirements

Training Requirements No special training required

Training Available Yes. DuPont will provide specialized group training upon request.

Manuals Available Permeation Guide available

Surveillance Testing Requirements Visual inspection (for holes and tears) prior to use

Support Equipment Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information Physical properties:
Basis weight (ASTM D3776–85) 2.1 oz/yd²
Thickness (ASTM D1777–64) 6.0 mils
Mullen burst (ASTM D3786–87) 66 psi
Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb
Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb
Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations None

Health Hazards None

Communications Interface Capability Not applicable

EOD Compatibility Compatible with EOD suit

General

Name
ID# 105

Tychem® QC Coverall



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number 37120

Protection Type Percutaneous

Equipment Category Coverall; zipper front

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against** Not tested

**Biological Warfare (BW)
Agents Protected Against** Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

6 lb/ctn and 12 units/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

Yellow and grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$100/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 106

Tychem® QC Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

37122

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, boot, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

8 lb/ctn and 12 units/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

Yellow and grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$124/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None

Special Requirements

Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® QC Coverall

ID# 107



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

37124

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, respirator fit hood, boots, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)

Not tested

Agents Protected Against

Biological Warfare (BW)

Not specified

Agents Protected Against

Toxic Industrial Materials (TIMs) Protected Against Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel .

Duration of Protection For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel . No test data available for CW agents.

Recommended Use(s) Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available S through XXXXL. Additional sizes available upon request.

Weight 7 lb/ctn and 12 units/ctn

Package Size and Volume 14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements Not applicable

Material Type Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color Yellow and grey

Logistical Parameters

Ease of Use Ergonomically designed for maximum mobility and flexibility

Consumables None

Maintenance Requirements Visual inspection prior to use

Shelf Life Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability Easily transported

Operational Limitations Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost \$131/carton

Maintenance Cost Minimum labor cost for routine suit inspection

Warranty 90 d for workmanship and materials

Don/Doff Information No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 108

Tychem® QC Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

37125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, elastic wrist, and ankle

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 12 units/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

Yellow and grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$105/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 109

Tychem® QC Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

37127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)

Not tested

Agents Protected Against

Biological Warfare (BW)

Not specified

Agents Protected Against

Toxic Industrial Materials (TIMs) Protected Against Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s) Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available S through XXXXL. Additional sizes available upon request.

Weight 7 lb/ctn and 12 units/ctn

Package Size and Volume 14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements Not applicable

Material Type Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color Yellow and grey

Logistical Parameters

Ease of Use Ergonomically designed for maximum mobility and flexibility

Consumables None

Maintenance Requirements Visual inspection prior to use

Shelf Life Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability Easily transported

Operational Limitations Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost \$114/carton

Maintenance Cost Minimum labor cost for routine suit inspection

Warranty 90 d for workmanship and materials

Don/Doff Information No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 110

Tychem® SL Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

41122

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, boot, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against	A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time VX: Greater than 12 h at 10 g/m ² GB, and L: Greater than 6 h at 10 g/m ² D: Greater than 3 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	4 lb/ctn and 4 units/ctn
Package Size and Volume	14 7/8 in L x 10 1/2 in W x 10 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	White
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$131/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® SL Coverall

ID# 111



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

41125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, elastic wrist, and ankle

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

4 lb/ctn and 4 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$105/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 112

Tychem® SL Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

41127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

4 lb/ctn and 4 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$112/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 113

Tychem® SL Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

41187

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, expanded back, socks, boots with flaps, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
GD: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel

Recommended Use(s)

Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

3 lb/ctn and 2 units/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$97/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None

Special Requirements

Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 114

Tychem® SL Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

41256

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, socks, boots with flaps, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel

Recommended Use(s)

Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

5 lb/ctn and 4 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$162/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None

Special Requirements

Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 115

Tychem® SL Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

42120

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against	A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time VX: Greater than 12 h at 10 g/m ² GB, and L: Greater than 6 h at 10 g/m ² D: Greater than 3 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	9 lb/ctn and 12 unit/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality
Color	White
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$165/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® SL Coverall

ID# 116



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

42122

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, boot, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

11 lb/ctn and 12 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$190/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 117

Tychem® SL Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

42124

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, respirator hood, boots, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

12 lb/ctn and 12 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$222/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® SL Coverall

ID# 118



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

42125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, elastic wrist, and ankle

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)

Agents Protected Against

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW)

Agents Protected Against

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

9 lb/ctn and 12 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$170/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None

Special Requirements

Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 3.1 oz/yd ² Thickness (ASTM D1777–64) 10.3 mils Mullen burst (ASTM D3786–87) 78 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® SL Coverall

ID# 119



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

42127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, elastic wrist, and ankle

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

A broad range of liquid chemicals. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 621, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, medical triage, minor invasive surgical operations, and decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

10 lb/ctn and 12 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Bound seam—tightly sewn seam is reinforced with an outer binding to further enhance seam strength and barrier quality

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$172/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories None

Special Requirements

Training Requirements No special training required

Training Available Yes. DuPont will provide specialized group training upon request.

Manuals Available Permeation Guide available

Surveillance Testing Requirements Visual inspection (for holes and tears) prior to use

Support Equipment Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information Physical properties:
Basis weight (ASTM D3776–85) 3.1 oz/yd²
Thickness (ASTM D1777–64) 10.3 mils
Mullen burst (ASTM D3786–87) 78 psi
Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 42/45 lb
Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 11/9 lb
Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations None

Health Hazards None

Communications Interface Capability Not applicable

EOD Compatibility Compatible with EOD suit

General

Name
ID# 120

Tychem® QC Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

63122

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, boot, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters**Sizes Available**

S through XXXXL. Additional sizes available upon request.

Weight

3 lb/ctn and 4 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow and grey

Logistical Parameters**Ease of Use**

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$101/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® QC Coverall

ID# 121



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

63125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, elastic wrist, and ankle

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

3 lb/ctn and 4 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow and grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$87/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 122

Tychem® QC Coverall



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number 63127

Protection Type Percutaneous

Equipment Category Coverall; zipper front, hood, elastic wrist, and ankle

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against** Not tested

**Biological Warfare (BW)
Agents Protected Against** Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters**Sizes Available**

S through XXXXL. Additional sizes available upon request.

Weight

3 lb/ctn and 4 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow and grey

Logistical Parameters**Ease of Use**

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$93/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 123

Tychem® QC Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

63187

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, expanded back, sock boots with flaps, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

3 lb/ctn and 2 units/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow and grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$79/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 124

Tychem® QC Coverall



Technology	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Stock Number	63256
Protection Type	Percutaneous
Equipment Category	Coverall; zipper front, hood, sock boots with flap, and elastic wrist
Availability	Commercially available
Current User(s)	U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.
Manufacturer	DuPont Tyvek® Protective Apparel U.S. Highway #1 North McBee, SC 29101 800-845-6962 (Tel) 843-335-8599 (Fax) e-mail: tyvekinf@usa.dupont.com
Manufacturer Type	Domestic manufacturer
Developer	DuPont Protective Apparel
Source	DuPont Tyvek® Protective Apparel e-mail: Mary-Ann.Daniel@usa.dupont.com POC: M. A. Daniel 888-577-6960 (Tel)
Certification	Not applicable
<u>Operational Parameters</u>	
Chemical Warfare (CW) Agents Protected Against	Not tested
Biological Warfare (BW) Agents Protected Against	Not specified

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

4 lb/ctn and 4 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow and grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$122/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/DoFF Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 2.1 oz/yd ² Thickness (ASTM D1777–64) 6.0 mils Mullen burst (ASTM D3786–87) 66 psi Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 125

Tychem® BR Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95120

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial (TIMs) Protected Against A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m²
GB, HD, and VX: Greater than 12 h at 100 g/m² (total coverage)
L: Greater than 2 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s) Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available S through XXXXL. Additional sizes available upon request.

Weight 4 lb/ctn and 2 units/ctn

Package Size and Volume 16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements Not applicable

Material Type Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color Yellow or olive drab

Logistical Parameters

Ease of Use Ergonomically designed for maximum mobility and flexibility

Consumables None

Maintenance Requirements Visual inspection prior to use

Shelf Life Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability Easily transported

Operational Limitations Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost \$83/carton

Maintenance Cost Minimum labor cost for routine suit inspection

Warranty 90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lbs. Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® BR Coverall

ID# 126



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95122

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, boot, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m²
GB, HD, and VX: Greater than 12 h at 100 g/m² (total coverage)
L: Greater than 2 h at 100 g/m² (total coverage)
Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m²
GB, HD, and VX: Greater than 12 h at 100 g/m² (total coverage)
L: Greater than 2 h at 100 g/m² (total coverage). For specific test data on
TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at
800-558-9329 and request document 636, or go to
www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

4 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow or olive drab

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$113/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lbs. Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 127

Tychem® BR Coverall



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number 95124

Protection Type Percutaneous

Equipment Category Coverall; zipper front, respirator hood, boots, and elastic wrists

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification Not applicable

Operational Parameters

Chemical Warfare (CW) Agents Protected Against Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against Not specified

Toxic Industrial (TIMs) Protected Against A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	4 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$119/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lbs. Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

ID# 128

Tychem® BR Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, elastic wrists, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against
Toxic Industrial (TIMs)
Protected Against**

Not specified

A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	4 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$92/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal..

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lb Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lb Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 129

Tychem® BR Coverall



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, elastic wrists, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m²
GB, HD, and VX: Greater than 12 h at 100 g/m² (total coverage)
L: Greater than 2 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

4 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

Yellow or olive drab

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$95/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lbs. Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 130

Tychem® BR Coverall

Picture Not Available

Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

95187

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, expanded back, sock boots with flaps, and elastic wrists

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	4 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$145/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lbs. Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 131

Tychem® BR Coverall



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number 95256

Protection Type Percutaneous

Equipment Category Coverall; zipper front, hood, sock boot/flap, and elastic wrist

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
888-577-6960 (Tel)
POC: M. A. Daniel

Certification Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against** Nerve agents (GA, GB, GD and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against** Not specified

Toxic Industrial (TIMs) Protected Against	A broad range of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 648, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² GB, HD, and VX: Greater than 12 h at 100 g/m ² (total coverage) L: Greater than 2 h at 100 g/m ² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 636, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	4 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	Yellow or olive drab
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$130/carton
Maintenance Cost	Minimum labor cost for routine suit inspection

Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 6.6 oz/yd ² Thickness (ASTM D1777–64) 16 mils Ball burst (ASTM D3787–89) 90 psi Breaking strength—Grab (md/xd) (ASTM D5034) 90/84 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5597) 19/19 lbs. Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 132

Tychem® TK Coverall



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number TK120

Protection Type Percutaneous

Equipment Category Coverall; zipper-front

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against** Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against** Not specified

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GB, HD, VX, and L: Greater than 12 h at 100 g/m² (total coverage)
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

6 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$159/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lbs. Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name
ID# 133

Tychem® TK Coverall



Technology Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number TK122

Protection Type Percutaneous

Equipment Category Coverall; zipper-front, hood, boot, and elastic wrist

Availability Commercially available

Current User(s) U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type Domestic manufacturer

Developer DuPont Protective Apparel

Source DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against** Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against** Not specified

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GB, HD, VX, and L: Greater than 12 h at 100 g/m² (total coverage)
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use.

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$185/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lbs. Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® TK Coverall

ID# 134



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TK124

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	7 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$212/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lbs. Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® TK Coverall

ID# 135



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TK125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, elastic wrists, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	7 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$165/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Laundryability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lbs. Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® TK Coverall

ID# 136



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TK127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, elastic wrists, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

Toxic Industrial (TIMs) Protected Against	Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	6 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$175/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lbs. Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® TK Coverall

ID# 137



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TK256

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, sock boots with flap, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GB, HD, VX, and L: Greater than 12 h at 100 g/m² (total coverage)
GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m². For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$208/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.
Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lbs. Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Tychem® TK Coverall

ID# 138

Picture Not Available

Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

TK187

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, hood, expanded back, sock boots with flaps, and elastic wrists

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection	Fabric test data: Average breakthrough time GB, HD, VX, and L: Greater than 12 h at 100 g/m ² (total coverage) GA, GB, GD, HD, L, and VX: Greater than 12 h at 10 g/m ² . For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 651, or go to www.dupont.com/tyvek/protective-apparel .
Recommended Use(s)	Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon
<u>Physical Parameters</u>	
Sizes Available	S through XXXXL. Additional sizes available upon request.
Weight	7 lb/ctn and 2 units/ctn
Package Size and Volume	16 in L x 10 1/4 in W x 14 1/8 in H
Power Requirements	Not applicable
Material Type	Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics
Construction Type	Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.
Color	High-visibility lime yellow
<u>Logistical Parameters</u>	
Ease of Use	Ergonomically designed for maximum mobility and flexibility. Very flexible with wide range of vision. Compatible with most commercial SCBA equipment.
Consumables	None
Maintenance Requirements	Visual inspection prior to use
Shelf Life	Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.
Transportability	Easily transported
Operational Limitations	Directly relates to the physical condition of user. Compatible with all commercial cooling systems.
Environmental Conditions	Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.
Unit Cost	\$245/carton
Maintenance Cost	Minimum labor cost for routine suit inspection
Warranty	90 d for workmanship and materials
Don/Doff Information	No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse	Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.
Launderability	Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776) 10.6 oz/yd ² Thickness (ASTM D1777) 26 mils Ball burst (ASTM D3787) 187 psi Breaking strength—Grab (md/xd) (ASTM D15034) 188/180 lbs. Tearing strength—Trapezoid (md/xd) (ASTM D5733) 53/52 lbs. Permeation data available by calling 1-877-797-5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

General

Name

Kappler Coverall

ID# 139



Technology

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Provides protection in rigorous activities and where there is potential for chemical splash.

Stock Number

3T424

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, attached hood, and sock boots. (Sock boots to be worn inside regular work boots). Elastic wrists.

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source

www.kappler.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, and VX

**Biological Warfare (BW)
Agents Protected Against
Toxic Industrial (TIMs)
Protected Against**

Not applicable

Contact Kappler for permeation guides

Duration of Protection	Contact Kappler for permeation guides
Recommended Use(s)	Emergency hazmat teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups
<u>Physical Parameters</u>	
Sizes Available	S-XL, 2X, and 3X
Weight	Average packaging weight is 12 lb per case of six
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical holdout protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.
Construction Type	Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.
Color	Tan
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Garments should have a visual test upon arrival from manufacture, annually and/or after each use and a quick reinspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.
Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures.
Unit Cost	Contact customer service for pricing

Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See instruction manual for donning and doffing instructions
Use/Reuse	See instruction manual for suggestions on decontamination
Launderability	See instruction manual for suggestions on decontamination
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley hazmat boots, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required
Training Available	Training video and Suit Smart CD
Manuals Available	Not applicable
Surveillance Testing Requirements	Visual inspections upon receipt from manufacture, after each use and/or annually, before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	Contact Kappler for permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler Coverall

ID# 140



Technology

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Provides protection in rigorous activities and where there is potential for chemical splash.

Stock Number

3T426

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front with single storm flap, attached hood and sock boots with boot flaps (splash guards). (Sock boots to be worn inside regular work boots). Elastic wrists.

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source

www.kappler.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

Toxic Industrial (TIMs) Protected Against	Contact Kappler for permeation guides
Duration of Protection	Contact Kappler for permeation guides
Recommended Use(s)	Emergency hazmat teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups
<u>Physical Parameters</u>	
Sizes Available	S-XL, 2X, and 3X
Weight	Average packaging weight is 12 lb per case of six
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical holdout protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.
Construction Type	Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.
Color	Tan
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Garments should have a visual test upon arrival from manufacture, annually and/or after each use and a quick reinspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at –85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

Contact customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See instruction manual for donning and doffing instructions

Use/Reuse

See instruction manual for suggestions on decontamination

Launderability

See instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include chemtape, kooljacket, Tingley hazmat boots, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available

Training video and Suit Smart CD

Manuals Available	Not applicable
Surveillance Testing Requirements	Visual inspections upon receipt from manufacture, after each use and/or annually, before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	Contact Kappler for permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler CPF 3 Coverall

ID# 141



Technology

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Provides protection in rigorous activities and where there is potential for chemical splash.

Stock Number

3T438. Pictured is 3T428.

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, attached hood, elastic wrists, and ankles

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source

www.kappler.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

Toxic Industrial (Times) Protected Against	Contact Kappler for permeation guides
Duration of Protection	Contact Kappler for permeation guides
Recommended Use(s)	Emergency HAZMAT teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups
<u>Physical Parameters</u>	
Sizes Available	S-XL, 2X, and 3X
Weight	Average packaging weight is 10 lb per case of six
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical holdout protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.
Construction Type	Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.
Color	Tan
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Garments should have a visual test upon arrival from manufacture, annually and/or after each use and a quick reinspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.

Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.
Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See instruction manual for donning and doffing instructions
Use/Reuse	See instruction manual for suggestions on decontamination
Launderability	See instruction manual for suggestions on decontamination
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boots, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required
Training Available	Training video and Suit Smart CD

Manuals Available	Not applicable
Surveillance Testing Requirements	Visual inspections upon receipt from manufacture, after each use and/or annually, before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	Contact Kappler for permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler Responder® Level B Coverall

ID# 142

Picture Not Available

Technology

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number

41250

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall, zipper front, collar, elastic wrists, and ankles

Availability

In stock

Current User(s)

Fire departments, HAZMAT response teams, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

None

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial (TIMs)
Protected Against**

Contact Kappler for permeation guides

Duration of Protection

Contact Kappler for permeation guides

Recommended Use(s)

Emergency HAZMAT teams, chemical handling, and chemical warfare protection and when protection is needed against potential flash fire and/or NFPA certified garments are required.

Physical Parameters

Sizes Available	S, M, L, XL, 2X, and 3X
Weight	Average packaging weight is 9 lb
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material
Construction Type	Seams are double taped—produced when a sewn seam is covered with a strip of compatible material on both the inside and the outside of the suit. The strip is attached by heat-sealing as with film laminated fabrics.
Color	Blue
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use and a quick reinspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of "aged" and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to "Training Use Only" be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards. CAUTION: Do not use for fire protection. Avoid open flame or intense heat.
Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, "Test Methods for Coated Fabrics," using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, "Standard Test Method for Coated Fabrics - Low Temperature Bend Test." This test subjects the

fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See Level B instruction manual for instructions on donning and doffing
Use/Reuse	See Level B instruction manual for suggestions on decontamination
Launderability	See Level B instruction manual for suggestions on decontamination
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boot, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required
Training Available	Level B instruction manual, training video, and Suit Smart CD
Manuals Available	Level B instruction manual
Surveillance Testing Requirements	Visual inspection and in the case of Level A garments pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse
Support Equipment	Appropriate respiratory equipment
Testing Information	See attached permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120

Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler Responder® Level B Coverall

ID# 143



Technology

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number

41255

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall, zipper front with storm flap, attached hood with elastic around face opening, elastic wrists, and ankles

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source

www.kappler.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

Toxic Industrial (TIMs) Protected Against	Contact Kappler for permeation guides
Duration of Protection	Contact Kappler for permeation guides
Recommended Use(s)	Emergency HAZMAT teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups
<u>Physical Parameters</u>	
Sizes Available	S-XL, 2X, and 3X
Weight	Average packaging weight is 4 lb
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material
Construction Type	Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.
Color	Blue
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use and a quick re-inspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.

Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered non-blocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.
Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability, or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See instruction manual for instructions on donning and doffing
Use/Reuse	See instruction manual for suggestions on decontamination
Launderability	See instruction manual for suggestions on decontamination
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boots, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required
Training Available	Training video and Suit Smart CD

Manuals Available	Not applicable
Surveillance Testing Requirements	Visual inspection upon receipt from manufacturer, after each use and/or annually, and before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	See attached permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler Responder® Level B Coverall

ID# 144



Technology

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number

41255-8A
Pictured is 3T428

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall, zipper front, attached respirator hood with elastic, elastic wrists, and ankles

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source

www.kappler.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial (TIMs)
Protected Against**

Contact Kappler for permeation guides

Duration of Protection	Contact Kappler for permeation guides
Recommended Use(s)	Emergency HAZMAT teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups
<u>Physical Parameters</u>	
Sizes Available	S-XL, 2X, and 3X
Weight	Average packaging weight is 4 lb
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material
Construction Type	Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.
Color	Blue
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use and a quick reinspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “Training Use Only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.

Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered non-blocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.
Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from the use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See instruction manual for instructions on donning and doffing
Use/Reuse	See instruction manual for suggestions on decontamination
Laundryability	See instruction manual for suggestions on decontamination
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boots, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required
Training Available	Training video and Suit Smart CD
Manuals Available	Not applicable

Surveillance Testing Requirements	Visual inspection upon receipt from manufacturer, after each use and/or annually, and before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler Ensemble, EPA Level A

ID# 145



Technology

Impermeable. Aluminized fiberglass is a woven, fire resistant fiberglass fabric, laminated with an aluminized polyester film. Provides excellent protection against radiant and convective heat, if needed.

Stock Number

50660 (front entry)
50661 (rear entry)

Protection Type

EPA Level A, Percutaneous

Equipment Category

Certified ensemble

Availability

Production began 1989

Current User(s)

The first 10 National Guard RAID Teams and the USMC CBIRF, MARCORSSYSCOM, POC: Adam Becker, 703-784-5898 (Tel)

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

NFPA 1991, 2000 edition (to comply with NFPA 1991.00 edition, must be worn as an ensemble)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

Toxic Industrial (TIMs) Protected Against	Information in Kappler Permeation Guide
Duration of Protection	6 s to 7 s at 2000 °F
Recommended Use(s)	Not specified

Physical Parameters

Sizes Available	S, M, L, XL, 2XL, and 3XL
Weight	9 lb/4.1 kg (shipping weight)
Package Size and Volume	45.9 in ³
Power Requirements	Not applicable
Material Type	Impermeable. Aluminized fiberglass is a woven, fire resistant fiberglass fabric, laminated with an aluminized polyester film. Provides excellent protection against radiant and convective heat, if needed.
Construction Type	Double sealed seams
Color	Aluminum overcover. Blue inner suit.

Logistical Parameters

Ease of Use	Overcover does not restrict mobility. Wearers can bend, twist, and turn without friction. Is sized to fit comfortably over Responder CSM totally encapsulating suits.
Consumables	Antifog may be necessary to keep the face shield from fogging
Maintenance Requirements	Not applicable
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	Not specified
Environmental Conditions	Not applicable
Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	Standard warranty is for a period of 90 d
Don/DoFF Information	See instruction manual for instructions on donning and doffing

Use/Reuse	See instruction manual for instructions on donning and doffing
Launderability	Decontamination procedures should be initiated and supervised by a qualified safety professional as quickly as possible on a suit that has been exposed to toxic chemical substances. Overcovers are not designed for multiple washing and decontamination.
Accessories	None
<u>Special Requirements</u>	
Training Requirements	4 h
Training Available	Training video and Suit Smart CD
Manuals Available	One instruction manual is included with each suit shipped
Surveillance Testing Requirements	Visual inspection and pressure test required before and after use, or as often as necessary as deemed by wearer or supervisors. Every six months when in extended storage.
Support Equipment	None
Testing Information	Material data sheet available
Applicable Regulations	None. However, each individual Government user has developed their own internal guidance regarding these issues.
Health Hazards	There is no potential health hazard associated with the possession, use, or storage of Aluminized Flash Fire Overcovers
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name

Kappler CPF 4 Coverall

ID# 146



Technology

Multi-film composite laminated to a high strength 2.3 oz polypropylene substrate

Stock Number

No boots: 4T438

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front, attached hood with elastic around face, elastic wrists, ankles, and sock boots to be worn inside regular work boots

Availability

In stock

Current User(s)

REC's Customers:
EPA; Department of State Consequence Management and Diplomatic Security Division; State of NY; NYC Police; City of Mobile, AL; Department of Justice Center for Domestic Preparedness; FBI; Wisconsin Office of Emergency Management; DOD; and Indiana Office of State Fire Marshall; Jefferson County, MO.

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

None

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

None

Biological Warfare (BW) Agents Protected Against	Not applicable
Toxic Industrial (TIMs) Protected Against	Carbon disulfide, sulfuric acid, ammonia, chlorine, hydrogen chloride, and ethylene oxide
Duration of Protection	>480 min
Recommended Use(s)	Kappler recommends that CPF 4 be used in chemical applications where the risk of coming in contact with chemical is high splash
<u>Physical Parameters</u>	
Sizes Available	S through 3XL
Weight	4T438: 17 lb
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Multi-layer barrier film laminated to a 2.3 oz polypropylene substrate
Construction Type	Strapped seams
Color	Green
<u>Logistical Parameters</u>	
Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use and a quick re-inspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	Temperature service range: -85 °F to 200 °F

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered non-blocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

Contact customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See instruction manual for instructions on donning and doffing

Use/Reuse

It is completely up to the discretion of the person wearing the suit. Kappler considers CPF 4 a limited use suit, and reuse is based on both an evaluation of the physical state of the garment and also the level and type of chemical exposure.

Launderability

See instruction manual for instructions on donning and doffing

Accessories

Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boots, and decon shower

Special Requirements

Training Requirements	Some instruction required
Training Available	Training video available
Manuals Available	Instruction manual available
Surveillance Testing Requirements	Visual inspections upon receipt from manufacturer, after each use, and before the next use
Support Equipment	Appropriate respiratory equipment
Testing Information	ASTM D751 Test Battery
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler CPF 3 Coverall

ID# 147

Picture Not Available

Technology

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Provides protection in rigorous activities and where there is potential for chemical splash.

Stock Number

No elastic: 3T412
Elastic: 3T417

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front and collar. No elastic/elastic wrists, and ankles.

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source

www.kappler.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial (TIMs)
Protected Against**

Contact Kappler for permeation guides

Duration of Protection

Contact Kappler for permeation guides

Recommended Use(s)

Emergency HAZMAT teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups

Physical Parameters

Sizes Available	S-XL, 2X, and 3X
Weight	Average packaging weight is 10 lb per case of six
Package Size and Volume	Not specified
Power Requirements	Not applicable
Material Type	Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical holdout protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.
Construction Type	Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.
Color	Tan

Logistical Parameters

Ease of Use	Some instruction required
Consumables	Not applicable
Maintenance Requirements	Suits should be stored in a cool dry area away from direct sunlight. Garments should have a visual test upon arrival from manufacture, annually and/or after each use and a quick reinspection before each use.
Shelf Life	Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.
Transportability	Not applicable
Operational Limitations	There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.
Environmental Conditions	Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method

for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Dooff Information	See instruction manual for donning and doffing instructions
Use/Reuse	See instruction manual for suggestions on decontamination
Laundryability	See instruction manual for suggestions on decontamination
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boots, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required
Training Available	Training video and Suit Smart CD
Manuals Available	Not applicable
Surveillance Testing Requirements	Visual inspections upon receipt from manufacture, after each use and/or annually, before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120

Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler CPF 4 Coverall

ID# 148

Picture Not Available

Technology

Multi-film composite laminated to a high strength 2.3 oz polypropylene substrate

Stock Number

No elastic: 4T412
Elastic: 4T417

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front and collar. No elastic/elastic wrists, and ankles.

Availability

In stock

Current User(s)

REC's Customers:
EPA; Department of State Consequence Management and Diplomatic Security Division; State of NY; NYC Police; City of Mobile, AL; Department of Justice Center for Domestic Preparedness; FBI; Wisconsin Office of Emergency Management; DOD; and Indiana Office of State Fire Marshall; Jefferson County, MO.

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

None

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

None

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial (TIMs)
Protected Against
Duration of Protection**

Carbon disulfide, sulfuric acid, ammonia, chlorine, hydrogen chloride, and ethylene oxide
>480 min

Recommended Use(s) Kappler recommends that CPF 4 be used in chemical applications where the risk of coming in contact with chemical is high splash

Physical Parameters

Sizes Available S through 3XL

Weight 15 lb/10 kg, six per case

Package Size and Volume Not specified

Power Requirements Not applicable

Material Type Multi-layer barrier film laminated to a 2.3 oz polypropylene substrate

Construction Type Strapped seams

Color Green

Logistical Parameters

Ease of Use Some instruction required

Consumables Not applicable

Maintenance Requirements Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use and a quick reinspection before each use.

Shelf Life Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability Not applicable

Operational Limitations Temperature service range: -85 °F to 200 °F

Environmental Conditions Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time

while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from the use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.
Don/Doff Information	See instruction manual for instructions on donning and doffing
Use/Reuse	It is completely up to the discretion of the person wearing the suit. Kappler considers CPF 4 a limited use suit, and reuse is based on both an evaluation of the physical state of the garment and also the level and type of chemical exposure.
Laundryability	See instruction manual for instructions on donning and doffing
Accessories	Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boot, and decon shower
<u>Special Requirements</u>	
Training Requirements	Some instruction required
Training Available	Training video available
Manuals Available	Instruction manual available
Surveillance Testing Requirements	Visual inspections upon receipt from manufacturer, after each use, and before the next use
Support Equipment	Appropriate respiratory equipment
Testing Information	ASTM D751 Test Battery
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120

Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Kappler CPF 3 Coverall

ID# 149



Technology

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Provides protection in rigorous activities and where there is potential for chemical splash.

Stock Number

Overboots: 3T414
Elastic ankles: 3T428

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front and attached hood. Elastic around hood and wrists. Overboots/no overboots with elastic ankles.

Availability

In stock

Current User(s)

Emergency HAZMAT teams, fire departments, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Gunterville, AL 35976

Source

www.kappler.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial (TIMs)
Protected Against**

Contact Kappler for permeation guides

Duration of Protection

Contact Kappler for permeation guides

Recommended Use(s)

Emergency HAZMAT teams, chemical handling, chemical warfare protection, hazardous wastes, and materials cleanups

Physical Parameters

Sizes Available

S-XL, 2X, and 3X

Weight

Average packaging weight is 10 lb per case of six

Package Size and Volume

Not specified

Power Requirements

Not applicable

Material Type

Multi-layer barrier film laminated to a durable 2.0 oz polypropylene substrate. Greater physical strength and chemical holdout protection when compared to other film products. Provides protection in rigorous activities and where there is potential for chemical splash.

Construction Type

Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.

Color

Tan

Logistical Parameters

Ease of Use

Some instruction required

Consumables

Not applicable

Maintenance Requirements

Suits should be stored in a cool dry area away from direct sunlight. Garments should have a visual test upon arrival from manufacture, annually and/or after each use and a quick reinspection before each use.

Shelf Life

Under proper storage conditions, there is no evidence to indicate that the System CPF® film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder® fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability

Not applicable

Operational Limitations

There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.

Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flexed in a 60° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

Contact customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from the use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling that results from conditions beyond the control of the manufacturer.

Don/Doff Information

See instruction manual for donning and doffing instructions

Use/Reuse

See instruction manual for suggestions on decontamination

Launderability

See instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boots, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available

Training video and Suit Smart CD

Manuals Available	Not applicable
Surveillance Testing Requirements	Visual inspections upon receipt from manufacture, after each use and/or annually, before each use
Support Equipment	Appropriate respiratory equipment
Testing Information	See permeation guides
Applicable Regulations	OSHA 1910.132 and OSHA 1910.120
Health Hazards	Not applicable
Communications Interface Capability	Not applicable
EOD Compatibility	Not applicable

General

Name

Lakeland Tychem® 10000 Level B Coverall

ID# 150



Technology

Particle separation

Stock Number

10100 Tychem® 10000
TK100 Tychem® TK

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (collar, open wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	15 lb per case, three in a case
Package Size and Volume	16 in L x 11 in W x 13 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears

Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 10000 Level B Coverall

ID# 151



Technology

Particle separation

Stock Number

10110 Tychem® 10000
TK110 Tychem® TK

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (collar, elastic wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800- 645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	15 lb per case, three in a case
Package Size and Volume	16 in L x 11 in W x 13 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Laundryability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 10000 Level B Coverall

ID# 152



Technology

Particle separation

Stock Number

10120 Tychem® 10000
TK120 Tychem® TK

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, open wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X
Weight 15 lb per case, three in a case
Package Size and Volume 16 in L x 11 in W x 13 in H
Power Requirements None
Material Type Garment is selectively permeable
Construction Type Seam sewn and the heat-sealed with tape
Color Lime-green

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables None
Maintenance Requirements Not specified
Shelf Life After 5 yr, recommended to use only for training
Transportability No support equipment required for transportation
Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost Not applicable—cost to be determined by distributors
Maintenance Cost Not applicable
Warranty 90 d
Don/Doff Information Not specified
Use/Reuse Limited use
Launderability Suits are not launderable
Accessories None

Special Requirements

Training Requirements Not specified
Training Available Available through regional sales representation
Manuals Available User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 10000 Level B Coverall

ID# 153



Technology

Particle separation

Stock Number

10130 Tychem® 10000
TK130 Tychem® TK

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

Fabric test data: Average breakthrough time
 VX: Greater than 12 h at 10 g/m²
 GB and L: Greater than 6 h at 10 g/m²
 D: Greater than 3 h at 10 g/m²
 Questions call Lakeland Customer Service at 800-645-9291

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters**Sizes Available**

S through 5X

Weight

15 lb

Package Size and Volume

16 in L x 11 in W x 13 in H

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

Lime-green

Logistical Parameters**Ease of Use**

Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables

None

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/Doff Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

None

Special Requirements

Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 10000 Level B Coverall

ID# 154



Technology

Particle separation

Stock Number

10140 Tychem® 10000
TK140 Tychem® TK

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, open wrists, and boots)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
Carl Brown (Technical Product Specialist)
Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	16 lb per case, three in a case
Package Size and Volume	16 in L x 11 in W x 13 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 10000 Level B Coverall

ID# 155



Technology

Particle separation

Stock Number

10150 Tychem® 10000
TK150 Tychem® TK

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, elastic wrists, and boots)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 16 lb per case, three in a case

Package Size and Volume 16 in L x 11 in W x 13 in H

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Seam sewn and the heat-sealed with tape

Color Lime-green

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not applicable

Warranty 90 d

Don/Doff Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements Not specified

Training Available Available through regional sales representation

Manuals Available User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 10000 Level B Coverall

ID# 156



Technology

Particle separation

Stock Number

10160 Tychem® 10000
TK160 Tychem® TK

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, elastic wrists, and boots with boot flaps)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial (TIMs)
Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 16 lb per case, three in a case

Package Size and Volume 16 in L x 11 in W x 13 in H

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Seam sewn and the heat-sealed with tape

Color Lime-green

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager

Environmental Conditions Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not applicable

Warranty 90 d

Don/Doff Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements Not specified

Training Available Available through regional sales representation

Manuals Available User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 10000 Level B Coverall

ID# 157



Technology

Particle separation

Stock Number

10165 Tychem® 10000
TK165 Tychem® TK

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (respirator-fit hood, elastic wrists, double storm flap, and boots with boot flaps)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GBand L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m²
Questions call Lakeland Customer Service at 800-645-9291

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters**Sizes Available**

S through 5X

Weight

16 lb

Package Size and Volume

16 in L x 11 in W x 13 in H

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

Lime-green

Logistical Parameters**Ease of Use**

Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables

None

Maintenance Requirements

Tested and inspected after every use

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not specified

Warranty

90 d

Don/Doff Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

Not specified

Special Requirements

Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	Not specified
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tyvek® QC Level B Coverall

ID# 158



Technology

Particle separation

Stock Number

70100

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (collar, open wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Many inorganic acids, bases, and other liquid chemicals such as pesticides. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection For specific TIMs data, contact Lakeland Customer Service at 800-645-9291.

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 6 lb per case, six in a case

Package Size and Volume Not specified

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Sealed seam

Color Yellow or grey

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions Designed to be worn in common outdoor conditions

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not applicable

Warranty 90 d

Don/DoFF Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements None

Training Available Available through regional sales representation

Manuals Available User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tyvek QC Level B Coverall

ID# 159



Technology

Particle separation

Stock Number

70110

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (collar, elastic wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Many inorganic acids, bases, and other liquid chemicals such as pesticides. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

For specific TIMs data, contact Lakeland Customer Service at 800-645-9291

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	6 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Sealed seam
Color	Yellow or grey
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tyvek® QC Level B Coverall

ID# 160



Technology

Particle separation

Stock Number

70120

Protection Type

Level B, Percutaneous and respiratory

Equipment Category

Level B, coverall (hood, elastic face, open wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Many inorganic acids, bases, and other liquid chemicals such as pesticides. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

For specific TIMs data, contact Lakeland Customer Service at 800-645-9291

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	7 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Sealed seam
Color	Yellow or grey
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tyvek® QC Level B Coverall

ID# 161



Technology

Particle separation

Stock Number

70130

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Many inorganic acids, bases, and other liquid chemicals such as pesticides. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

For specific TIMs data, contact Lakeland Customer Service at 800-645-9291

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	7 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Sealed seam
Color	Yellow or grey
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tyvek® QC Level B Coverall

ID# 162



Technology

Particle separation

Stock Number

70140

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, open wrists, and boots)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Many inorganic acids, bases, and other liquid chemicals such as pesticides. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection For specific TIMs data, contact Lakeland Customer Service at 800-645-9291

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 8 lb per case, six in a case

Package Size and Volume Not specified

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Sealed seam

Color Yellow or grey

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions Designed to be worn in common outdoor conditions

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not applicable

Warranty 90 d

Don/Doff Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements None

Training Available Available through regional sales representation

Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tyvek® QC Level B Coverall

ID# 163



Technology

Particle separation

Stock Number

70150

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, elastic wrists, and boots)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not tested

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

Many inorganic acids, bases, and other liquid chemicals such as pesticides. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

For specific TIMs data, contact Lakeland Customer Service at 800-645-9291

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	8 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Sealed seam
Color	Yellow or grey
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/DoFF Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears

Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® SL Level B Coverall

ID# 164



Technology

Particle separation

Stock Number

72110

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (collar, elastic wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection	Fabric test data: Average breakthrough time VX: Greater than 12 h at 10 g/m ² GB and L: Greater than 6 h at 10 g/m ² D: Greater than 3 h at 10 g/m ² Questions call Lakeland Customer Service at 800-645-9291
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	6 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	White
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None

Special Requirements

Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® SL Level B Coverall

ID# 165



Technology

Particle separation

Stock Number

72120

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, open wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800- 645- 9291

Duration of Protection	Fabric test data: Average breakthrough time VX: Greater than 12 h at 10 g/m ² GB and L: Greater than 6 h at 10 g/m ² D: Greater than 3 h at 10 g/m ² Questions call Lakeland Customer Service at 800-645-9291
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	7 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	White
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	Not specified

Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® SL Level B Coverall

ID# 166



Technology

Particle separation

Stock Number

72130

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection	Fabric test data: Average breakthrough time VX: Greater than 12 h at 10 g/m ² GB and L: Greater than 6 h at 10 g/m ² D: Greater than 3 h at 10 g/m ² Questions call Lakeland Customer Service at 800-645-9291
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	7 lb
Package Size and Volume	16 1/8 in L x 10 7/8 in W x 8 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	White
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None

Special Requirements

Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® SL Level B Coverall

ID# 167



Technology

Particle separation

Stock Number

72140

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, open wrists, and boots)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m²
Questions call Lakeland Customer Service at 800-645-9291

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters**Sizes Available**

S through 5X

Weight

8 lb per case, six in a case

Package Size and Volume

Not specified

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

White

Logistical Parameters**Ease of Use**

Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables

None

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Designed to be worn in common outdoor conditions

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/Doff Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

None

Special Requirements**Training Requirements**

Not specified

Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® SL Level B Coverall

ID# 168



Technology

Particle separation

Stock Number

72150

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, elastic wrists, and boots)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection	Fabric test data: Average breakthrough time VX: Greater than 12 h at 10 g/m ² GB and L: Greater than 6 h at 10 g/m ² D: Greater than 3 h at 10 g/m ² Questions call Lakeland Customer Service at 800-645-9291
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	8 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	White and grey
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	Not specified

Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® SL Level B Coverall

ID# 169



Technology

Particle separation

Stock Number

72165

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, 30" zipper extended to chin, double storm flap with Velcro, elastic wrists, and boots with boot flaps)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GB and VX); blister agents (HD and L). Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

Duration of Protection

Fabric test data: Average Breakthrough Time
 VX: Greater than 12 h at 10 g/m²
 GB and L: Greater than 6 h at 10 g/m²
 D: Greater than 3 h at 10 g/m²
 Questions call Lakeland Customer Service at 800-645-9291

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters**Sizes Available**

S through 5X

Weight

8 lb per case, six in a case

Package Size and Volume

Not specified

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

White

Logistical Parameters**Ease of Use**

Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables

None

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Designed to be worn in common outdoor conditions

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/Doff Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

None

Special Requirements

Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 9400 Level B Coverall

ID# 170



Technology

Particle separation

Stock Number

94100 Tychem® 9400
BR100 Tychem® BR

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (collar, open wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

Duration of Protection

Breakthrough time at minimum of 8 h, except ammonia at 45 min, dichloromethane at 391 min, and methanol at 150 min

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 12 lb per case, six in a case

Package Size and Volume Not specified

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Seam sewn and the heat-sealed with tape

Color School bus yellow

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions Designed to be worn in common outdoor conditions

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not applicable

Warranty 90 d

Don/Doff Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements Not specified

Training Available Available through regional sales representation

Manuals Available User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem[®] 9400 Level B Coverall

ID# 171



Technology

Particle separation

Stock Number

94130 Tychem[®] 9400
BR130 Tychem[®] BR

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

Duration of Protection

Breakthrough time at minimum of 8 h, except ammonia at 45 min, dichloromethane at 391 min, and methanol at 150 min

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	12 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	School bus yellow
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 9400 Level B Coverall

ID# 172



Technology

Particle separation

Stock Number

94140 Tychem® 9400
BR140 Tychem® BR

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, open wrists, and ankles)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

Duration of Protection

Breakthrough time at minimum of 8 h, except ammonia at 45 min, dichloromethane at 391 min, and methanol at 150 min

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 12 lb per case, six in a case

Package Size and Volume Not specified

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Seam sewn and the heat-sealed with tape

Color School bus yellow

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions Designed to be worn in common outdoor conditions

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not specified

Warranty 90 d

Don/Doff Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements Not specified

Training Available Available through regional sales representation

Manuals Available User manual and permeation guide available

Surveillance Testing Requirements Visually inspect prior to use for holes or tears

Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 9400 Level B Coverall

ID# 173



Technology

Particle separation

Stock Number

94160 Tychem® 9400
BR160 Tychem® BR

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (hood, elastic face, elastic wrists, and boots with boot flaps)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

Duration of Protection

Breakthrough time at minimum of 8 h, except ammonia at 45 min, dichloromethane at 391 min, and ethanol at 150 min

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
<u>Physical Parameters</u>	
Sizes Available	S through 5X
Weight	14 lb per case, six in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	School bus yellow
<u>Logistical Parameters</u>	
Ease of Use	Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/DoFF Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears

Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

Lakeland Tychem® 9400 Level B Coverall

ID# 174



Technology

Particle separation

Stock Number

94165 Tychem® 9400
BR165 Tychem® BR

Protection Type

Level B, Percutaneous

Equipment Category

Level B, coverall (respirator-fit hood, elastic wrists, double storm flap, and boots with boot flaps)

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial (TIMs)
Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

Duration of Protection

Breakthrough time at minimum of 8 h, except ammonia at 45 min, dichloromethane at 391 min, and methanol at 150 min

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 14 lb per case, six in a case

Package Size and Volume 16 in L x 11 in W x 13 in H

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Seam sewn and the heat-sealed with tape

Color School bus yellow

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems for wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions Designed to be worn in common outdoor conditions

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not applicable

Warranty 90 d

Don/Doff Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements

Training Available Available through regional sales representation

Manuals Available User manual and permeation guide available

Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

General

Name

***Chemical Protective Overgarments (CPO)
LANX Fabric Systems***

ID# 175



Technology

LANX is a durable composite fabric containing polymerically encapsulated carbon for the absorption of chemical warfare agents. The overgarment also features a shell fabric with flame resistant or nonflame resistant characteristics.

Stock Number

Not applicable

Protection Type

Percutaneous. The CPO provides liquid, vapor, and aerosol protection against CB agents as well as flame resistance when required.

Equipment Category

CPO consists of a coat and trousers with suspenders as well as accessories such as all fabric glove liners, integrated gloves, and boot liners. Shell fabric is available in flame resistant (FR) and nonflame resistant (non-FR).

Availability

Lead-time depends on order volume. All CPOs custom made to order.

Current User(s)

Center for Domestic Preparedness, Ft. McClellan, AL where students are trained in live chemical warfare agent environments. The FBI HAZMAT Response Unit.

Manufacturer

LANX Fabric Systems
220 GBC Drive
Newark, DE 19702
POC: Randall D. Lofland
302-451-3060 (Tel)
302-451-0208 (Fax)
e-mail: randall.lofland@xymid.com

Manufacturer Type

Domestic

Developer

DuPont developed the LANX technology. LANX Fabric Systems has exclusive rights to manufacture and market the product.

Source

LANX Fabric Systems

Certification

All CPOs meet the chemical agent protective requirements of Military Specification MIL-U-44435

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Distilled mustard (HD), soman (GD), thickened soman (TGD), Lewisite (L), VX, and other lower order agents such as sarin

Biological Warfare (BW) Agents Protected Against	The CPU inherently protects against BW agents as the particulate size of a BW agent is larger than that of a CW agent making it easier to absorb than CW agents
Toxic Industrial (TIMs) Protected Against	Not specified
Duration of Protection	The CPO is recommended for personnel responding to a WMD incident who require protective apparel that permit the end user to work for extended periods of time in a chemical-biological environment. The CPO is recommended for search and rescue, emergency medical services, WMD Incident Command Support Personnel, HAZMAT response, and law enforcement (depending on application and task assignment). The CPO can be used throughout the identification, mitigation and clean up of a WMD event by a variety of first responders when Level A suits are not required.
Recommended Use(s)	Chemical agent vapors, aerosols, droplets, and all known biological agents.
<u>Physical Parameters</u>	
Sizes Available	Shirt and drawers: S/extra short, S/short, M/short, M/regular, M/long, L/regular, L/long (sizing available upon request) All fabric glove liners: S, M, L, and custom made XL Integrated gloves: S, M, L, and XL Boot liners: S, M, L, and XL
Weight	Weighs less than 5 lb per suit
Package Size and Volume	The CPO is vacuum packed and occupies approximately 1 ft ³ of space
Power Requirements	None
Material Type	Proprietary
Construction Type	Proprietary
Color	Gray
<u>Logistical Parameters</u>	
Ease of Use	Very easy to use. Air permeable technology significantly reduces heat stress allowing the user to work exponentially longer than nonpermeable technologies.
Consumables	Not specified
Maintenance Requirements	Store in dry place
Shelf Life	The ultimate shelf life of the CPO has yet to be determined. The technology is 10 yr old and shows no signs of degradation during annual testing. The U.S. Military currently assesses the shelf life to be 12 yr.
Transportability	May be transported easily whether in a backpack, garment bag, tote bag or even hand carried
Operational Limitations	The CPO provides excellent liquid, vapor, and aerosol protection

Environmental Conditions	The CPO works well in most climates. Due care should be taken to keep the CPO in a bag when not in use. The CPO's air permeable nature allows for the transportation of sweat away from the body, significantly reducing heat stress.
Unit Cost	Call for a quotation at 302-451-3060 POC: Randall D. Lofland
Maintenance Cost	None if stored properly
Warranty	The CPO is manufactured to Military Pattern PD 97-04 and meets the chemical protective requirements of Military Specification MIL-U-44435
Don/Doff Information	The CPO is easy to don and doff. One man may don and doff his own CPO under normal circumstances. Some agencies require a two man doffing procedure following contamination. Check your agency protocol.
Use/Reuse	The CPO may be reused after wearing and laundering. After contamination with CW agent, current military doctrine dictates disposing of the garment properly.
Launderability	Yes—The CPO is launderable
Accessories	The CPO has accessories such as all fabric glove liners, integrated gloves, and boot liners
<u>Special Requirements</u>	
Training Requirements	Minimal training required. Contaminated CPO doffing procedures may vary. Check local protocols.
Training Available	Introductory training is available upon request. Advanced training is based upon agency protocol, and should be developed at the local level.
Manuals Available	Care, use, and storage information is available if needed
Surveillance Testing Requirements	The manufacturer performs CCL4 testing annually prior to distribution to end users. The end user should visually inspect the CPO at regularly scheduled intervals.
Support Equipment	Not applicable
Testing Information	The most recent testing of the LANX CPO was performed using AVLAG Test Operating Procedure (TOP) 8-2-501
Applicable Regulations	The CPO is governed by the International Traffic and Arms Regulations (ITAR)
Health Hazards	MSDSs are on file, and no indication of health hazards present
Communications Interface Capability	Not applicable
EOD Compatibility	Wearing the CPO beneath an EOD Suit is the most favorable configuration to assure chemical/biological protection in the event of an explosion

General

Name

The U.S. Air Force Saratoga CWU-66/P Chemical Protective Coverall

ID# 176



Technology

Permeable Saratoga carbon sphere technology

Stock Number

CWU-66/P; (MIL C-87264)

Protection Type

Percutaneous

Equipment Category

Coverall, Chemical Protective Flight Coverall (MIL C-87264)

Availability

Fielded 1990, currently in production

Current User(s)

U.S. Air Force, the U.S. Air Force selected the CWU-66/P Chemical Protective Coverall in 1990 as their operational flight suit to provide aircrew chemical agent protection. It is flame resistant.

Manufacturer

Tex-Shield, Inc.
5206 Morrowick Rd
Charlotte, NC 28226
POC: Nona Fahl
704-341-3681 (Tel)
704-341-3468 (Fax)

Manufacturer Type

Domestic and Foreign

Developer

Blucher GmbH, Erkrath, Germany/USAF

Source

Tex-Shield, Inc.

Certification

U.S. and NATO military chemical protection specifications. (MIL C-87264).

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

All classes of chemical warfare agents when used as directed with chemical warfare protective mask, gloves, and overboots or socks

**Biological Warfare (BW)
Agents Protected Against**

Protects against biological warfare agents when used as directed with appropriate mask, gloves, and overboots or socks

**Toxic Industrial (TIMs)
Protected Against**

Not tested

Duration of Protection

Qualified by DoD for 24 h vapor protection, 6 h liquid protection, 10 launderings, and 30 d wear

Recommended Use(s) Operational flight suit

Physical Parameters

Sizes Available 32S to 52L

Weight < 5 lb depending on size

Package Size and Volume 17 in x 22 in

Power Requirements None

Material Type Monopack, one layer fabric of Saratoga activated carbon spheres between PBI/Nomex fabrics

Construction Type Coverall, one piece, unlined with front zipper, Velcro closures at leg and sleeves, breast pockets, sleeve pocket, and lower leg pockets

Color Sage green

Logistical Parameters

Ease of Use 98 % user acceptance

Consumables Mpme

Maintenance Requirements General suit inspection. Standard laundering. Record wear use and launderings.

Shelf Life 10 yr

Transportability Vacuum sealed, compact package

Operational Limitations Flame resistant

Environmental Conditions No environmental usage limitations. Not affected by rain, fog, snow, salt, and water.

Unit Cost Not specified

Maintenance Cost None

Warranty Free of material and workmanship defects for 1 yr

Don/Doff Information Assistance is recommended in doffing contaminated coverall

Use/Reuse Reusable and launderable

Launderability Suit is launderable 10 times for hygienic purposes. Standard home laundering.

Accessories Suit may be purchased as package with Saratoga gloves, and socks

Special Requirements

Training Requirements No special training required

Training Available No special training required

Manuals Available Instruction manual

Surveillance Testing Requirements	No testing required. Inspection for tears and damage required.
Support Equipment	Chemical warfare mask, gloves, and socks or overboots
Testing Information	Only approved CWU-66/P. Test data available on request.
Applicable Regulations	Not specified
Health Hazards	None
Communications Interface Capability	Not specified
EOD Compatibility	Compatible with EOD equipment in CB environment

General

Name

CB Incident Emergency Escape Kit

ID# 177



Technology

Percutaneous (Tychem[®] 9400 (durable, puncture and tear-resistant limited-use fabric). Respiratory (full-face air-purifying respirator).

Stock Number

Not specified

Protection Type

Percutaneous and respiratory

Equipment Category

The CB Incident Emergency Escape Kit is designed for the safe exit of areas where hazardous chemical and biological warfare agents have been disseminated. The kit includes a full-face air-purifying respirator with a chemical-biological/riot control agent.

Availability

Commercially available

Current User(s)

Not specified

Manufacturer

EAI Corporation
1308 Continental Drive, Suite J
Abingdon, MD 21009
888-REC-3838 (Tel)
410-671-0058 (Fax)

Manufacturer Type

Domestic

Developer

EAI Corporation

Source

www.r-e-c.com

Certification

Not specified

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve: GA, GB, GD, and VX; blister: HD and L

**Biological Warfare (BW)
Agents Protected Against**

Not specified, but literature states it is designed for safe exit where BW agents have been disseminated

**Toxic Industrial (TIMs)
Protected Against**

Not specified

Duration of Protection

CW- 12 h minimum in each of the chemical groups under protocols DN3, DN4, DN5, and DN6 (except 2 h for Lewisite under protocol DN4)

Recommended Use(s)	Law enforcement, security, medical personnel (e.g., EMS, paramedics, doctors, and nurses), other personnel predeployed at highly visible events
<u>Physical Parameters</u>	
Sizes Available	Not specified
Weight	Not specified
Package Size and Volume	Not specified
Power Requirements	Not specified
Material Type	Coverall and boots made of Tychem [®] 9400 (durable, limited-use fabric with puncture, and tear resistance)
Construction Type	Not specified
Color	Yellow coverall and boot covers; black gloves
<u>Logistical Parameters</u>	
Ease of Use	Highly mobile, flexible
Consumables	Not applicable for coverall
Maintenance Requirements	Check for cuts and damage after use
Shelf Life	Not specified
Transportability	Transportable (ensemble is packaged in a nylon duffel bag) and compatible with life support equipment
Operational Limitations	Not specified
Environmental Conditions	Designed to be worn in common outdoor weather conditions, and climates
Unit Cost	Not specified
Maintenance Cost	None
Warranty	Not specified
Don/Doff Information	Not specified
Use/Reuse	Designed for limited use
Launderability	Designed for limited use
Accessories	Boot covers, butyl outer gloves, vinyl inner glove inserts, full-face air-purifying respirator with a chemical-biological/riot control agent canister
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	Not specified
Manuals Available	Not specified
Surveillance Testing Requirements	Inspection for cuts, damage, and chemical contamination

Support Equipment	Full-face air-purifying respirator with a chemical-biological/riot control agent canister
Testing Information	Protocols DN3, DN4, DN5, and DN6 for CW agents
Applicable Regulations	Not specified
Health Hazards	Not applicable
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

General

Name

SEA Tyvek® “F” Suit Level B

ID# 178



Technology

Percutaneous—barrier fabric
Tyvek® “F” is manufactured by laminating the basic Tyvek® flash-spunbonded polyethylene material to a barrier film which is coated with a polymer. The top polymer layer allows seams to be made with a heat-sealing tape which includes the same barrier film and polymer as Tyvek® “F.” Known chemical warfare agents will not permeate these seams. The SEA Tyvek® “F” positive pressure suit is especially made for the SE400, breath responsive, computerized positive pressure PAPR, with optional cooling system.

Stock Number

Not specified

Protection Type

Level B, Percutaneous

Equipment Category

Level B, positive pressure ventilated chemical protective clothing

Availability

Commercial

Current User(s)

Frequently used by emergency preparedness teams in Europe

Manufacturer

SEA
11 Business Park Drive
Branford CT 06405
Contact: Bengt Kjellberg, President
203-483-9483 (Tel)
203-483-6633 (Fax)
888-732-3500 (Toll Free U.S. and Canada)
Email: bengtk@sea.com.au
<http://www.sea.com.au>

Manufacturer Type

Foreign

Developer

SEA Group

Source

Brochure and Internet <http://www.sea.com.au>

Certification

Tyvek “F” models typically surpass the minimum performance requirements specified in the European standards. For detailed information call 888-832-3500.

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Tested by U.S. Army SBCCOM Edgewood Biological and Chemical Center, Aberdeen Proving Ground, MD. Test parameters available on request (888-732-3500).

Biological Warfare (BW) Agents Protected Against Specification available on request. Call 888-732-3500 and ask for the document regarding Tyvek Barrier Man Chemical Protective Clothing.

Toxic Industrial (TIMs) Protected Against Specification available on request. Call 888-732-3500 and ask for the document regarding Tyvek Barrier Man Chemical Protective Clothing.

Duration of Protection In an environment where guaranteed high protection factor, in combination with long duration time and low weight is needed, and in combination with positive pressure suit ventilation

Recommended Use(s) In an environment where guaranteed high protection factor, in combination with long duration time and low weight is needed, and in combination with positive pressure suit ventilation

Physical Parameters

Sizes Available Size options: L, XL, and XXL

Weight Complete suit 1.5 lb. Suit ventilation system additional 0.5 lb.

Package Size and Volume 9 in x 12 in x 8 in

Power Requirements (3) D-alkaline batteries if personal ice cooling system is integrated with the suit (for 4 h duration)

Material Type Tyvek "F" (high density polyethylene)

Construction Type Heat-sealed seams

Color Green

Logistical Parameters

Ease of Use Disposable suit specially designed for SE 400 for ease of donning and doffing with suit ventilation and positive pressure in suit to gain high protection

Consumables Disposable suit

Maintenance Requirements Store in a dry location and avoid direct contact with sunlight for prolonged periods

Shelf Life The projected shelf life of Tyvek "F" fabrics based on accelerated aging tests according to ASTM 573-88 conducted at 212 °F and 100 psi is 5 yr

Transportability The SEA suit can be transported without the need for any special equipment

Operational Limitations The SEA suit is very lightweight with positive pressure and suit cooling capability option; therefore, there is very little additional workload so the user can perform normal work for longer periods without suffering discomfort, even in high temperature environments.

Environmental Conditions Specification available on request. Call 1-888-732-3500 and ask for document regarding Tyvek Barrier Man Chemical Protective Clothing.

Unit Cost \$175

Maintenance Cost Disposable

Warranty	The supplier warrants that all products manufactured by it shall be free of defects in material and workmanship for a period of 1 yr from the date of delivery
Don/Doff Information	There is no assistance required for the donning or doff of the SEA suit. An experienced operator can comfortably don or doff within 2 min.
Use/Reuse	Disposable
Launderability	Disposable
Accessories	SE 400 positive pressure PAPR system with communication. Positive pressure ventilation system and integrated personal ice cooling system.
<u>Special Requirements</u>	
Training Requirements	No specific training required other than to read the manual. Fifteen min will give the user the basic operational understanding. Further training is required for the user to understand the maintenance and care of the SE400.
Training Available	SEA can provide full training for use, maintenance, and care of the SEA suit
Manuals Available	Training documentation can be provided
Surveillance Testing Requirements	Not applicable
Support Equipment	Not applicable
Testing Information	Specification available on request. Call 1-888-732-3500 and ask for document regarding Tyvek Barrier Man Chemical Protective Clothing.
Applicable Regulations	European standards
Health Hazards	The Tyvek "F" garments could be incinerated after use without harming the environment, or they may be buried in a responsible way
Communications Interface Capability	SE-TALK—a miniature loudspeaker that connects to the respirator unit as well as the positive pressure suit cooling system
EOD Compatibility	

General

Name

NewPac CEMI COVER DRESS C/91

ID# 179



Technology

Disposable, 10 plies, impermeable NBC and TIM skin protective two piece plastic (PE) garment with double barrier of EVAL (EVOH)

Stock Number

NewPac/2007 (Alt. NewPac/2015)

Protection Type

Percutaneous

Equipment Category

Level B, two piece plastic garment with double barrier; shall be used with APR or PAPR

Availability

2 wk

Current User(s)

First responders and rescue squads in Europe and SE Asia

Manufacturer

New Pac Safety AB
P.O. Box 174
SE-566 23 Habo
Sweden
+46-36-411-39 (Tel)
+46-36-410-31 (Fax)
E-mail: info@newpac.se

Manufacturer Type

Foreign/Sweden, Europe

Developer

New Pac Safety AB

Source

Createc Consulting LLC, Branford, CT.
www.army-technology.com New Pac Safety
POC: Mr. Hans Almqvist
203-481-7114 (Tel)

Certification

CE-certified by the notified body 0402, SA, Borås, Sweden. Certificate No: 19 83 01. Meets European EU Directives 89/686/EEC, Article 10.

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Most types. Documentation by tests with HD.

**Biological Warfare (BW)
Agents Protected Against**

Most types

**Toxic Industrial (TIMs)
Protected Against**

Most types

Duration of Protection	NBC-proof for more than 24 h. TIM-proof for more than 4 h.
Recommended Use(s)	First responders for environments with no risk of fire
<u>Physical Parameters</u>	
Sizes Available	One size, universal fit
Weight	2.2 lb (1 kg)
Package Size and Volume	11 x 11 x 3 in; 0.18 ft ³
Power Requirements	Not applicable
Material Type	Multiply polyethylene (PE) film with two barrier layers of ethylene vinyl alcohol (EVAL/EVOH). The material is not fire retardant.
Construction Type	Two-piece suit with integrated hood and with special foot covers. The seams are thermo-sealed. Gloves are separate.
Color	Transparent
<u>Logistical Parameters</u>	
Ease of Use	Shall be used with APR or PAPR with full-face mask. Mobility and flexibility are only marginally influenced, but cooling vest is recommended for warm environments to reduce risk of heat stress.
Consumables	Not applicable
Maintenance Requirements	Not applicable; the suit is disposable
Shelf Life	20 yr in storage with temperature maximum 122 °F
Transportability	Easily transported
Operational Limitations	Must not be exposed to intensive heat or open flame
Environmental Conditions	Unlimited use in -13 °F to +158 °F (+70 °C). Can withstand short (4 min) exposure to -40 °F to +572 °F.
Unit Cost	\$119
Maintenance Cost	Not applicable
Warranty	1 yr. Extended warranty is offered if storage conditions can be guaranteed.
Don/Doff Information	Manual is provided
Use/Reuse	If contaminated, the suit shall be destroyed by fire under controlled conditions
Launderability	Not applicable
Accessories	Shall be used with APR or PAPR with full-face mask. Cooling vest is recommended for warm environments.
<u>Special Requirements</u>	
Training Requirements	1 h

Training Available	Manual. Training video pending.
Manuals Available	Technical specification New Pac TS C/9107-2 and user manual
Surveillance Testing Requirements	No need for surveillance testing
Support Equipment	APR or PAPR with full-face mask. Cooling vest recommended for use in warm environments.
Testing Information	New Pac TS C/9107-2
Applicable Regulations	EU-Directives 89/686/EEC and Article 10
Health Hazards	No health hazard
Communications Interface Capability	Not applicable
EOD Compatibility	Not specified

General

Name

NewPac First Responder PPE Kit

ID# 180



Technology

Complete First Responder PPE Kit including protective suit, APR with full-face mask, canister and manual packaged in storage and carrying bag for use when responding to environments containing NBC agents and/or TIMs.

Stock Number

NewPac/2030

Protection Type

Percutaneous and respiratory

Equipment Category

Level B, complete First Responder PPE Kit including protective suit, APR with full-face mask, canister and manual packaged in storage and carrying bag for use when responding to environments containing NBC agents and/or TIMs; use APR with full face mask.

Availability

In May 2001: 3 mo. In fall of 2001: 2 wk.

Current User(s)

First responders and rescue squads in Europe and SE Asia

Manufacturer

New Pac Safety AB
P.O. Box 174
SE-566 23 Habo
Sweden
+46-36-411-39 (Tel)
+46-36-410-31 (Fax)
E-mail: info@newpac.se

Manufacturer Type

Foreign/Sweden, UK, and Hungary

Developer

New Pac Safety AB

Source

Createc Consulting LLC, Branford, CT.
www.army-technology.com New Pac Safety
POC: Mr. Hans Almqvist
203-481-7114 (Tel)

Certification

The suit meets EU standard. NIOSH certification for APR pending. The kit will be tested to pending NFPA 1994 standard.

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Most types

Biological Warfare (BW) Agents Protected Against	Most types
Toxic Industrial (TIMs) Protected Against	Most types
Duration of Protection	Not specified
Recommended Use(s)	First responders for environments not IDLH and with no risk of fire
<u>Physical Parameters</u>	
Sizes Available	One size, universal fit. Full-face mask available in two sizes.
Weight	6.6 lb (3 kg)
Package Size and Volume	11 x 11 x 9 in; 0.5 ft ³
Power Requirements	Not applicable
Material Type	Multiply polyethylene (PE) film with two barrier layers of ethylene vinyl alcohol (EVAL/EVOH). The material is not fire retardant.
Construction Type	Two-piece suit with integrated hood and with special foot covers. The seams are thermo-sealed. Gloves are separate.
Color	The suit is transparent
<u>Logistical Parameters</u>	
Ease of Use	Mobility and flexibility are only marginally influenced, but cooling vest is recommended for warm environments to reduce risk of heat stress
Consumables	The canister has to be replaced periodically. Time not specified.
Maintenance Requirements	The full-face mask has to be cleaned after each use. Canister and suit are disposable.
Shelf Life	10 yr in storage with temperature maximum 122 °F. Canister to be replaced periodically.
Transportability	Easily transported
Operational Limitations	Must not be exposed to intensive heat or open flame
Environmental Conditions	Unlimited use in -13 °F to +158 °F (+70 °C)
Unit Cost	\$300
Maintenance Cost	The full face mask has to be cleaned after each use
Warranty	1 yr. Extended warranty is offered if storage conditions can be guaranteed.
Don/Doff Information	Manual is provided
Use/Reuse	If contaminated, the suit shall be destroyed by fire under controlled conditions. The canister shall be replaced after each use. The full-face mask shall be cleaned.

Launderability	Not applicable
Accessories	Cooling vest is recommended for warm environments
<u>Special Requirements</u>	
Training Requirements	1 h for the use of the kit. Incident commanders need more time depending on their background.
Training Available	Manual. Training video pending.
Manuals Available	Technical specification New Pac TS C/9107-2 and user manual
Surveillance Testing Requirements	No need for surveillance testing
Support Equipment	Cooling vest recommended for use in warm environments. Communication equipment can be added.
Testing Information	New Pac TS C/9107-2 and tests needed for pending NIOSH certification and NFPA 1994 (pending) approval
Applicable Regulations	Suit: EU- Directives 89/686/EEC, Article 10 and pending NFPA 1994 APR: 42 CFR 84. Pending NFPA standard 1994.
Health Hazards	No health hazard
Communications Interface Capability	The full-face mask can be equipped with communication device
EOD Compatibility	Not specified

ABOUT THE LAW ENFORCEMENT AND CORRECTIONS STANDARDS AND TESTING PROGRAM

The Law Enforcement and Corrections Standards and Testing Program is sponsored by the Office of Science and Technology of the National Institute of Justice (NIJ), U.S. Department of Justice. The program responds to the mandate of the Justice System Improvement Act of 1979, directed NIJ to encourage research and development to improve the criminal justice system and to disseminate the results to Federal, State, and local agencies.

The Law Enforcement and Corrections Standards and Testing Program is an applied research effort that determines the technological needs of justice system agencies, sets minimum performance standards for specific devices, tests commercially available equipment against those standards, and disseminates the standards and the test results to criminal justice agencies nationally and internationally.

The program operates through:

The *Law Enforcement and Corrections Technology Advisory Council* (LECTAC), consisting of nationally recognized criminal justice practitioners from Federal, State, and local agencies, which assesses technological needs and sets priorities for research programs and items to be evaluated and tested.

The *Office of Law Enforcement Standards* (OLES) at the National Institute of Standards and Technology, which develops voluntary national performance standards for compliance testing to ensure that individual items of equipment are suitable for use by criminal justice agencies. The standards are based upon laboratory testing and evaluation of representative samples of each item of equipment to determine the key attributes, develop test methods, and establish minimum performance requirements for each essential attribute. In addition to the highly technical standards, OLES also produces technical reports and user guidelines that explain in nontechnical terms the capabilities of available equipment.

The *National Law Enforcement and Corrections Technology Center* (NLECTC), operated by a grantee, which supervises a national compliance testing program conducted by independent laboratories. The standards developed by OLES serve as performance benchmarks against which commercial equipment is measured. The facilities, personnel, and testing capabilities of the independent laboratories are evaluated by OLES prior to testing each item of equipment, and OLES helps the NLECTC staff review and analyze data. Test results are published in Equipment Performance Reports designed to help justice system procurement officials make informed purchasing decisions.

Publications are available at no charge through the National Law Enforcement and Corrections Technology Center. Some documents are also available online through the Internet/World Wide Web. To request a document or additional information, call 800-248-2742 or 301-519-5060, or write:

National Law Enforcement and Corrections Technology Center
P.O. Box 1160
Rockville, MD 20849-1160
E-Mail: asknlectc@nlectc.org
World Wide Web address: <http://www.nlectc.org>

This document is not intended to create, does not create, and may not be relied upon to create any rights, substantive or procedural, enforceable at law by any party in any matter civil or criminal.

Opinions or points of view expressed in this document represent a consensus of the authors and do not represent the official position or policies of the U.S. Department of Justice. The products and manufacturers discussed in this document are presented for informational purposes only and do not constitute product approval or endorsement by the U.S. Department of Justice.

The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime.