

NIOSH CERTIFIED EQUIPMENT LIST

AS OF SEPTEMBER 30, 1993

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health**

December 1993

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DHHS (NIOSH) Publication No. 94-104

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Abstract

The National Institute for Occupational Safety and Health, under authorization of the Federal Mine Safety and Health Act of 1977 and the Occupational Safety and Health Act of 1970, provides a testing, approval, and certification program assuring commercial availability of safe personal protective devices and reliable industrial hazard measuring instruments. NIOSH develops improved performance regulations, tests and certifies (or approves) devices, and purchases approved and certified products on the open market to verify the quality of manufacture.

This publication (a) lists products certified as of September 30, 1993, (b) contains tables of useful information concerning certified coal mine dust personal sampler units and respirators, (c) updates the lists of approval applicants, and (d) lists some of the more common cautions and limitations for specific respirator classes.

Changes to the NIOSH Certified Equipment List

Since the previous edition of the NIOSH Certified Equipment List was published (December 31, 1991), several modifications have been made to the format. These modifications include the elimination of all model numbers, hose lengths, and pressure ranges for all supplied-air respirators and respirators in combination with a supplied-air respirator. Model numbers were eliminated due to their limited utility since most manufacturers utilize their own numbering system. Therefore, a respirator user could not use the model numbers listed in the NIOSH Certified Equipment List for ordering a respirator. In addition, model numbers do not appear on the respirator assembly and therefore, could not be used to determine whether a particular respirator is certified. Hose lengths and pressure ranges were eliminated out of concern that the user may rely solely upon this Certified Equipment List instead of the approval label for this critical information. Because of modifications made from time-to-time by the respirator manufacturer, all respirators with the same certification number may not have the same pressure requirements and hose length options. Currently the only accurate source of the pressure ranges and hose lengths is the NIOSH approval label and the users instruction manual.

For future editions of the Certified Equipment List, NIOSH is considering distribution by electronic means. Some means being considered are computer bulletin boards, CD-ROM, and on floppy disks. If you have comments, suggestions, or a preference for the type of electronic distribution, please write to:

Chief, Certification and Quality Assurance Branch
Division of Safety Research
National Institute for Occupational Safety and Health
944 Chestnut Ridge Road
Morgantown, WV 26505-2888

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INTRODUCTION

The Certification and Quality Assurance Branch (CQAB), Division of Safety Research (DSR), National Institute for Occupational Safety and Health (NIOSH), located at 944 Chestnut Ridge Road, Morgantown, West Virginia 26505, was established to assure that certain devices and instruments used for control and evaluation of occupational hazards meet minimum performance requirements necessary to protect workers' health and safety. The functions of the CQAB include: (1) publish certification requirements, (2) test and certify products meeting those requirements, (3) publish lists of certified products, (4) audit manufacturers plants to determine the acceptability of their quality assurance programs, (5) sample products from the open market and test them for continued conformance to certification requirements, and (6) perform research on development of new test methods and requirements for product improvement, where necessary to assure worker protection.

This publication replaces previous lists of devices certified by NIOSH or by NIOSH and the Mine Safety and Health Administration. It does not list any devices formerly approved by the Bureau of Mines.

Certification applicants have voluntarily withdrawn certain products from the market. This withdrawal is for a variety of reasons, and replacement parts for these products may or may not be available.

Other products are currently not being sold. The status of this withdrawal, the availability of parts, and sale of other products is subject to change.

These products are, therefore, not listed in this publication. NIOSH advises interested persons to call (304/284-5713) or write the CQAB and request available information on certified products that are not listed in this publication.

Respirators are listed by approval class. General cautions and limitations are listed for each approval class. These limitations are by no means all inclusive. The respirator manufacturer may also identify further limitations or cautions for their respirators. In addition, regulatory agencies may also place a limit on the use of respirators in their standards.

Except as it purchases equipment and supplies on the open market for quality control testing, NIOSH does not have frequent internal use for personal protective equipment. It therefore welcomes information from the user concerning NIOSH certified equipment. These comments and suggestions, responses to this publication, and requests for additional information on certified products can be sent to the Chief, Certification and Quality Assurance Branch, Division of Safety Research, NIOSH, 944 Chestnut Ridge Road, Morgantown, West Virginia 26505.

I. Coal Mine Personal Sampler Units

COAL MINE DUST PERSONAL SAMPLER UNITS

I. Certification of Coal Mine Dust Personal Sampler Units.

A coal mine dust personal sampler unit (CMDPSU) consists of a pump, a charger, and a sampling head with a 10 mm nylon cyclone and a preweighed sealed filter cassette. It is used--as a unit--for collecting the mandatory coal mine atmosphere samples as required under the Federal Mine Safety and Health Act of 1977. The sampling requirements are detailed in Title 30, Part 70 of the Code of Federal Regulations.

All certified CMDPSU's must have prior approval by the Mine Safety and Health Administration, Department of Labor, to meet the 2G-2239 Electrical Permissibility requirements. The performance of the CMDPSU's is certified by NIOSH under Title 30, Part 74 of the Code of Federal Regulations. As of December 31, 1990, the following CMDPSU's are certified by NIOSH:

<u>CERTIFICATION NUMBER</u>	<u>CERTIFICATE HOLDER</u>	<u>MODEL</u>
TC-74-015	MSA	G
TC-74-028	MSA	G (tamperproof cassette)
TC-74-029	MSA	1 (Flow-lite)

NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

Mine Safety Appliances Company
P.O. Box 439
Pittsburgh, PA 15230

II. Respiratory Protective Devices

HOW TO USE THE RESPIRATOR TABLES

Most readers of the "NIOSH Certified Equipment List" use it to answer two basic questions about respiratory protection:

1. What is the appropriate respirator to use? and,
2. Is this respirator approved?

The Respiratory Protective Devices (Respirator) Section is divided into two series of tables to allow the user to readily find the answers to these two questions.

Respirator Selection

The selection of an appropriate respirator for use in a given situation can only be made by carefully considering a series of interrelated environmental, equipment, work situation and human factors.

Once a selection by specific type is made, then a user can refer to the specific section for a list of all approved devices of that type. These types are:

- A. Self-contained Breathing Apparatus
 1. Entry Into and Escape
 - a. Open circuit pressure demand
 - b. Open circuit demand
 - c. Closed circuit
 2. Escape Only
 - a. Open circuit (pressure demand, demand or continuous flow)
 - b. Closed circuit
 3. Combination Self-contained Breathing Apparatus and Supplied-air Respirators
- B. Gas Mask
 1. Ammonia
 2. Chlorine
 3. Sulfur Dioxide
 4. Acid Gases
 5. Organic Vapors
 6. Carbon Monoxide
 7. Pesticides
 8. Other gases and vapors
- C. Supplied Air Respirators
 1. Type C Continuous Flow
 2. Type C Pressure Demand
 3. Type C Demand
 4. Type CE Continuous Flow Abrasive Blasting
 5. Type A
 6. Type B

- D. Particulate
 - 1. Single Use
 - 2. Dusts
 - 3. Dusts and Mists
 - 4. Dusts, Fumes and Mists
 - 5. High Efficiency

- E. Chemical Cartridges
 - 1. Ammonia
 - 2. Methylamine and Ammonia
 - 3. Chlorine
 - 4. Hydrogen Chloride
 - 5. Sulfur Dioxide
 - 6. Organic Vapor
 - 7. Paints, Lacquers and Enamels
 - 8. Pesticides
 - 9. Vinyl Chloride
 - 10. Sulfur Dioxide
 - 11. Other Gases and Vapors

- F. Powered Air Purifiers
 - 1. Gas Masks
 - 2. Particulate
 - 3. Chemical Cartridge

- G. Vinyl Chloride Respirators

For example, if your need was for a self-contained breathing apparatus for use in escaping from a laboratory fire in which the travel distance to safety was 100 feet, then your choice might be an escape self-contained breathing apparatus (SCBA) with a relatively short duration or service life. Turning to Section A(2) Escape Only Self Contained Breathing Apparatus, you would find that the TC-13F-28 approval (among others) has been granted for escape self-contained breathing apparatus (Es) with a service life of 5 minutes.

Abbreviations and Definitions of Terms and Symbols Used in Lists

Respirator Type

- A** Hose mask respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a motor- driven or hand-operated blower that permits the free entrance of air when the blower is not operating, a strong large-diameter hose having a low resistance to air flow.
- AE** Supplied-air respirator. A type A supplied air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- B** Supplied-air respirator. A hose mask respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a strong large diameter hose with low resistance to airflow through which the user draws inspired air by means of his lungs alone, a harness to which the hose is attached, and a tight-fitting facepiece.
- BE** Supplied-air respirator. A type B supplied-air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- C** Supplied-air respirators. An airline respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a source of respirable breathing air, a hose, a detachable coupling, a control valve, orifice, a demand valve or pressure demand valve, an arrangement for attaching the hose to the wearer and a facepiece, hood, or helmet.
- CE** Supplied-air respirator. A type C supplied-air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- CF** Continuous flow. Type C supplied air respirator which supplies respirable air at a constant flow.

CC	Closed-circuit apparatus. An apparatus of the type in which the exhalation is rebreathed by the wearer after the carbon dioxide has been effectively removed and a suitable oxygen concentration restored from sources composed of: (i) Compressed oxygen; or (ii) Chemical oxygen; or (iii) Liquid-oxygen.
ODM	Open circuit demand type - An apparatus in which the pressure inside the facepiece in relation to the immediate environment is positive during exhalation and negative during inhalation and from which exhalation is vented to the atmosphere and not rebreathed.
OPD	Open circuit pressure demand type. An apparatus in which the pressure inside the facepiece in relation to the immediate environment is positive during both inhalation and exhalation and from which exhalation is vented to the atmosphere and not rebreathed.
GEN	Oxygen generating respirator which supplies oxygen by means of a chemical reaction
Es	Escape only respiratory devices providing protection only during escape from hazardous atmospheres.
SAR	Supplied-air respirator. An airline respirator.
PAPR	Powered air-purifying respirator means a device equipped with a facepiece, hood, or helmet, breathing tube, canister, cartridge, filter, canister with filter, or cartridge with filter, and a blower.
Rp	Replaceable filter. A filter which is discarded after excessive resistance renders it unsuitable for further use.
Ru	Reusable filter. A filter which is cleaned and reused after excessive resistance renders it unsuitable for further use.
Su	Single use. A respirator that is entirely discarded after excessive resistance, sorbent exhaustion, or physical damage renders it unsuitable for further use.
AG	Acid gas
OV	Organic vapor
Cl	Chlorine
HCl	Hydrogen chloride
HCN	Hydrogen Cyanide
O ₂	Sulfur dioxide
CO	Carbon monoxide
NH ₃	Ammonia
MA	Methylamine

VC	Vinyl chloride
CLO ₂	Chlorine dioxide
CH ₂ -O	Formaldehyde
PH ₃	phosphine
H ₂ S	hydrogen sulfide
PLE	mists of paints, lacquer and enamel
Pest	Pesticide means (1) any substance of mixture of substances (including solvents and impurities) intended to prevent, destroy, repel, or mitigate any insect, rodent, nematode, fungus, weed, or other form of plant or animal life or virus, and (2) any substance or mixture of substances (including solvents and impurities) intended for use as a plant regulator, defoliant, or desiccant, as defined in the Federal Insecticide, Fungicide, and Rodenticide Act of 1947, as amended (7 U.S.C. 135-135k), excluding fumigants which are applied as gases or vapors or in a solid or liquid form as pellets or poured liquids for subsequent release as gases or vapors.
DFM:	
D	Respirators, either with replaceable or reusable filters, designed as respiratory protection against dusts (I) having an air contamination level not less than 0.05 milligram per cubic meter of air; or (2) dusts having an air contamination level not less than 2 million particles per cubic foot of air.
F	Respirators, with replaceable filters, designed as respiratory protection against fumes of various metals having an air contamination level not less than 0.05 milligram per cubic meter.
M	Respirators, with replaceable filters, designed as respiratory protection against mists of materials having an air contamination level not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.
H	Respirators, with replaceable filters, designed as respiratory protection against dusts, fumes, and mists having an air contamination level less than 0.05 milligram per cubic meter, and against radionuclides.
R	Respirators, with replaceable filters, designed as respiratory protection against radon daughters, and radon daughters attached to dusts, fumes, and mists.
A	Respirators, with replaceable filters, designed as respiratory protection against asbestos-containing dusts and mists.
S	Single-use dust respirators designed as respiratory protection against pneumoconiosis- and fibrosis-producing dusts, or dusts and mists.
AB	Abrasive blasting.

Z Respirators designed as respiratory protection against asbestos- containing dusts and mists, however, no longer permitted for use under the OSHA asbestos standard, 1910.1001.

Service Life

3 min. 3 minutes
5 min. 5 minutes
15 min. 15 minutes
30 min. 30 minutes
45 min. 45 minutes
1 hr. 1 hour

Breathing Gas

A Compressed Air
O Compressed Oxygen

Facepiece Type

ON Orinasal
FF Full facepiece
HH Hood or helmet
MP(M) Mouthpiece

Regulator, valve, or canister location

Fm Facepiece mounted
Bm Belt, chest, or side mounted

Airflow Class

CF Continuous flow
Dm Demand
Pd Pressure-demand

* Obsolete models - these models are still approved, but no longer produced by the manufacturer

SELF-CONTAINED BREATHING APPARATUS (13F)

A. Self-contained Breathing Apparatus

1. Entry Into and Escape

a. Open circuit pressure demand

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Demand mode shall be used only when donning apparatus.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

Approval Number TC-13F-	Approval Issued to	Service Life (min.)	Facepiece Type	Regulator Position
30	MSA	30	FF	Bm
40	Scott	30	FF	Bm
42	Scott	15	FF	Bm
45	Survivair	30	FF	Bm
47	MSA	15	FF	Bm
59	Siebe-Gorman	30	FF	Fm
65	ISD	15	ON,FF	Fm
76	Scott	30	FF	Fm
80	Scott	30	FF	Fm
82	Survivair	30	FF	Bm
99	Siebe-Gorman	30	FF	Fm
100	Draeger	30	FF	Fm
100	Draeger	30	FF	Fm
102	ISI	30	FF	Fm
103	Draeger	30	FF	Fm
105	Survivair	60	FF	Bm
106	O-Two Systems	30	FF	Fm
107	Globe	30	FF	Bm

108	Survivair	30	FF	Bm
110	National Draeger	60	FF	Fm
110	National Draeger	60	FF	Fm
113	Survivair	60	FF	Bm
114	Scott	15	FF	Fm
115	Scott	15	FF	Fm
128	O-Two Systems	30	FF	Bm
129	O-Two Systems	60	FF	Bm
130	Survivair	30	FF	Bm
132	Interspiro	30	FF	Fm
133	Interspiro	30	FF	Fm
138	MSA	30	FF	Bm
139	MSA	30	FF	Bm
140	MSA	60	FF	Bm
144	North	60	FF	Fm
146	North	30	FF	Fm
147	North	30	FF	Fm
164	National Draeger	30	FF	Fm
169	MSA	15	FF	Fm

171	Racal Panorama (Globe)	30	FF	Bm
174	National Draeger	30	FF	Fm
175	National Draeger	45	FF	Fm
177	National Draeger	60	FF	Fm
197	Interspiro	60	FF	Fm
199	Interspiro	30	FF	Fm
207	Racal Panorama (Globe)	30	FF	Bm
208	Racal Panorama (Globe)	60	FF	Bm
212	Scott	45 min.	FF	Fm
220	Racal Panorama (Globe)	45	FF	Bm
226	National Draeger	30	FF	Fm
234	ISI	45	FF	Fm
235	ISI	60	FF	Fm
236	ISI	30	FF	Fm
237	ISI	30	FF	Fm
238	ISI	30	FF	Fm
250	Respiratory Systems	30	FF	Fm

256	MSA	30	FF	Fm
257	MSA	30	FF	Fm
258	MSA	60	FF	Fm
262	Cairns and Brother	30	FF	Fm
263	Cairns and Brother	30	FF	Fm
289	Draeger	60	MP	Bm

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

Approval Number TC-13F-	Approval Issued to	Service Life (min.)	Facepiece Type	Regulator Position
264	Cairns and Brother	45	FF	Fm
265	Cairns and Brother	60	FF	Fm
268	National Draeger	45	FF	Fm
270	Survivair	45	FF	Bm
274	Racal Panorama	15	FF	Fm
275	Racal Panorama	30	FF	Fm
278	RSI	30	FF	Fm
279	Racal Panorama	30	FF	Fm
284	Survivair	30	FF	Fm
285	Survivair	30	FF	Fm
286	Survivair	45	FF	Fm
287	Survivair	60	FF	Fm
288	Pro-tech	30	FF	Fm

b. Open Circuit Demand

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT DEMAND

Approval Number TC-13F-	Approval Issued to	Breathing Gas	Service Life (min)	Facepiece Type	Regulator Position
29	MSA	A	30	FF	Bm
39	Scott	A	30	FF	Bm
41	Scott	A	15	FF	Bm
43	Globe	A	30	FF	Bm
44	Survivair	A	30	FF	Bm
46	MSA	A	15	FF	Bm
58	Siebe-Gorman	A	30	FF	Fm
73	Scott	A	30	FF	Fm
79	Scott	A	30	FF	Fm
142	MSA	A	30	FF	Bm
168	MSA	A	15	FF	Fm

c. Closed circuit

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only at temperatures above the temperature listed on approval label.

If compressed air supply is used: Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

If compressed oxygen or liquid oxygen supply is used: Approved for use only when the cylinder or container is charged with compressed oxygen or liquid oxygen meeting U.S.P. specifications.

If enriched air is used: Approved only when the cylinder or container is charged with compressed gas meeting the requirements listed in Federal Register Vol. 20, No. 222, November 18, 1985. Oxygen in the facepiece shall not exceed 30 percent by volume under normal temperature and pressure conditions.

If liquified breathing air is used it must meet Type II - Grade B or higher quality.

The oxygen container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Provide proper care, training, and maintenance of the apparatus as specifically described in the manufacturer's instructions and maintenance manuals.

After each use of each apparatus, a fully charged breathing gas container and a recharge of carbon dioxide scrubber shall be installed.

Thorough cleaning and disinfecting of facepiece, breathing tube, and breathing bag must be done in accordance with the manufacturer's instructions.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation for Closed Circuit with Breathing Gas Cylinders

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

SCBA ENTRY INTO AND ESCAPE CLOSED CIRCUIT

Approval Number TC-13F-	Approval Issued to	Breathing Gas	Service Life (min)	Facepiece Type	Regulator Position
27	Biomarine	O	45	FF	In back pack
32	Siebe-Gorman	O	180	FF	In back pack
38	Draeger	O	180	FF	In back pack
57	Draeger	O	240	FF	In back pack
60	Scott	O	240	FF	In back pack
84	Biomarine	O	30	FF	In back pack
85	Biomarine	O	60	FF	In back pack
176	Draeger	O	120	FF	In back pack
185	Biomarine	O	240	FF	In back pack
186	MSA	O	240	FF	In back pack
210	Survivair	O	120	FF	In back pack

d. Closed Circuit Pressure Demand

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

If compressed air supply is used: Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

If compressed oxygen or liquid oxygen supply is used: Approved for use only when the cylinder or container is charged with compressed oxygen or liquid oxygen meeting U.S.P. specifications.

If enriched air is used: Approved only when the cylinder or container is charged with compressed gas meeting the requirements listed in Federal Register Vol. 20, No. 222, November 18, 1985. Oxygen in the facepiece shall not exceed 30 percent by volume under normal temperature and pressure conditions.

If liquified breathing air is used it must meet Type II - Grade B or higher quality.

The oxygen container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Do not use this apparatus where there is direct exposure to open flames or in high radiant heat. (This limitation applies to 100 percent oxygen apparatus only.)

Provide proper care, training, and maintenance of the apparatus as specifically described in the manufacturer's instructions and maintenance manuals.

After each use of each apparatus, a fully charged breathing gas container and a recharge of carbon dioxide scrubber shall be installed.

Thorough cleaning and disinfecting of facepiece, breathing tube, and breathing bag must be done in accordance with the manufacturer's instructions.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation for Closed Circuit with Breathing Gas Cylinders

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

SCBA ENTRY INTO AND ESCAPE CLOSED CIRCUIT PRESSURE DEMAND

Approval Number TC-13F-	Approval Issued to	Breathing Gas	Service Life (min)	Facepiece Type	Regulator Position
206	Biomarine	O	240	FF	Backpack
209	Dragerwerk	O	120	FF	Backpack
228	Litton Systems (Clifton Precision)	38-39% oxygen Enriched Air	90	FF	Backpack
229	Biomarine	O	60	FF	Backpack
233	Litton Systems (Clifton Precision)	38-39% oxygen Enriched Air	120	FF	Backpack
229	Biomarine	O	180	FF	Backpack

2. Escape Only

- a. Open circuit (pressure demand, demand or continuous flow)

Approval

Approved for respiratory protection during escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only at temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

OSHA regulations require that escape respirators be inspected monthly.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

SCBA ESCAPE ONLY OPEN CIRCUIT

Approval Number TC-13F-	Approval Issued to	Service Life (min.)	Facepiece Type	Respirator Type
28	ISD	5	HH	CF, Es
28A	Lear Siegler	5	HH	CF, Es
35	Survivair	15	FF	ODM, Es
36	Survivair	5	FF	ODM, Es
52	MSA	5	FF	ODM, Es
55	MSA	5	MP	ODM, Es
61	MSA	5	ON	ODM, Es
66	Scott	5	ON,FF	ODM, Es
71	Globe	5	FF	ODM, Es
75	Globe	15	FF	ODM, Es
83	MSA	5	ON	ODM, Es
86	Survivair	5	HH	CF, Es
111	ISI	5	HH	CF, Es
116	Scott	5	FF	OPD, Es
124	Scott	5	FF	OPD, Es
125	Scott	5	FF	OPD, Es
145	ISI	10	HH	CF, Es

166	Racal Panorama (Globe)	5	FF	OPD, Es
167	Racal Panorama (Globe)	15	FF	OPD, Es
172	North	5	HH	CF, Es
173	ISI	7	HH	CF, Es
178	Respiratory Systems	10	HH	CF, Es
179	Respiratory Systems	5	HH	CF, Es
181	Scott	5	HH	CF, Es
182	National Draeger	5	HH	CF, Es
193	Respiratory Systems	5	HH	CF, Es
195	North	10	HH	CF, Es
198	North	5	HH	CF, Es
200	National Draeger	10	HH	CF, Es
201	ISI	5	HH	CF, Es
202	Airolife	10	HH	CF, Es
203	Airolife	5	HH	CF, Es
204	Airolife	10	HH	CF, Es
205	Airolife	7	HH	CF, Es

216	MSA	5	HH	CF, Es
217	MSA	5	HH	CF, Es
231	Survivair	5	HH	CF,Es
232	Survivair	10	HH	CF,Es
241	Respiratory Systems	7	HH	CF, Es
243	Racal Panorama (Globe)	15	FF	OPD, Es
245	Racal Panorama (Globe)	15	FF	OPD, Es
254	MSA	5	HH	Cf,Es
255	Survivair	5	HH	Cf,Es

SELF CONTAINED BREATHING APPARATUS (13F)

b. Closed Circuit

Approval

Approved for respiratory protection during escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only at temperatures above the temperature listed on approval label.

If compressed air supply is used: Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

If compressed oxygen or liquid oxygen supply is used: Approved for use only when the cylinder or container is charged with compressed oxygen or liquid oxygen meeting U.S.P. specifications.

If enriched air is used: Approved only when the cylinder or container is charged with compressed gas meeting the requirements listed in Federal Register Vol. 20, No. 222, November 18, 1985. Oxygen in the facepiece shall not exceed 30 percent by volume under normal temperature and pressure conditions.

If liquified breathing air is used it must meet Type II - Grade B or higher quality.

The oxygen container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Provide proper care, training, and maintenance of the apparatus as specifically described in the manufacturer's instructions and maintenance manuals.

After each use of each apparatus, a fully charged breathing gas container and a recharge of carbon dioxide scrubber shall be installed.

Thorough cleaning and disinfecting of facepiece, breathing tube, and breathing bag must be done in accordance with the manufacturer's instructions.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

OSHA regulations require that escape respirators be inspected monthly.

MSHA regulations require that self-rescuers that are carried be inspected daily.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation for Closed Circuit with Breathing Gas Cylinders

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

SCBA ESCAPE ONLY CLOSED CIRCUIT

Approval Number TC-13F-	Approval Issued to	Service Life (min.)	Facepiece Type
78	MSA	60	MP
87	Draeger	60	MP
88	Scott	15	HH
97	PASS	60	MP
101	CSE	60	MP
104	Ocenco	60	MP
109	PASS	60	FF
117	Survivair	60	FF
170	Romiro	15	MP
239	CSE	60	MP
269	Ocenco Inc.	10	MP
283	MSA	60	MP
289	Draeger	60	MP

3. Combination Self-contained Breathing Apparatus and Supplied-air Respirators (Demand and Pressure Demand)

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors, when using air-line air supply. Approved for escape only, when using self-contained air supply. If service life is 15 minutes or longer then not more than 20% of the rated capacity of air supply can be used on entry.

Limitations

Use only at temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Use only the hose lengths and pressure ranges specified on the approval label.

If the supplied air fails open cylinder valve and proceed to fresh air immediately.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

Approval Number TC-13F-	Approval Issued to	Service Life/SCBA (min)	Face-piece Type	Supplied Air Respirator Type
33	Survivair	5	FF	Es,ODM,SAR
34	Survivair	5	FF	Es,ODM,SAR
48	Scott	3 or 5	FF	Es,ODM,SAR
49	Scott	3 or 5	FF	Es,OPD,SAR
53	Survivair	5	FF	Es,OPD,SAR
54	Survivair	5	FF	Es,OPD,SAR
56	MSA	10	FF	Es,OPD,SAR
56A	MSA	10	FF	Es,OPD,SAR
62	MSA	5	FF	Es,ODM,SAR
63	ISD	15	ON,FF	OPD,SAR
64	ISD	5	ON,FF	Es,OPD,SAR
67	Scott	5	ON,FF	Es,ODM,SAR
68	Scott	5	FF	Es,OPD,SAR
69	MSA	5	FF	Es,ODM,SAR
70	MSA	5	FF	Es,OPD,SAR
72	Globe	5	FF	Es,ODM,SAR
74	Globe	15	FF	ODM,SAR
76	Scott	30	FF	OPD,SAR

79	Scott	30	FF	ODM,SAR
80	Scott	30	FF	OPD,SAR
89	MSA	30	FF	ODM,SAR
90	MSA	30	FF	OPD,SAR
91	MSA	15	FF	ODM,SAR
92	MSA	15	FF	OPD,SAR
93	MSA	30	FF	OPD,SAR
94	MSA	15	FF	OPD,SAR
95	Scott	60	FF	ODM,SAR
96	Scott	60	FF	OPD,SAR
98	Scott	15	FF	OPD,SAR
108	Survivair	30	FF	OPD,SAR
112	Scott	5	FF	Es,CF,SAR
113	Survivair	60	FF	Bm
114	Scott	15	FF	OPD,SAR
115	Scott	15	FF	OPD,SAR
118	National Draeger	30	FF	OPD,SAR
119	National Draeger	30	FF	OPD,SAR

120	National Draeger	15	FF	OPD,SAR
121	Racal Panorama (Globe)	5	FF	Es,OPD,SAR
122	Racal Panorama (Globe)	15	FF	OPD,SAR
123	MSA	5	FF	Es,OPD,SAR
126	Scott	5	FF	Es,OPD,SAR
127	Scott	5	FF	Es,OPD,SAR
130	Survivair	30	FF	Bm
131	Survivair	30	FF	OPD,SAR
132	Interspiro	30	FF	OPD,SAR
133	Interspiro	30	FF	OPD,SAR
134	Interspiro	5	FF	Es,OPD,SAR
135	O-Two Systems	30	FF	OPD,SAR
136	O-Two Systems	30	FF	OPD,SAR
137	O-Two Systems	60	FF	OPD,SAR
141	National Draeger	5	FF	Es,OPD,SAR
143	MSA	5	FF	Es,OPD,SAR
144	North	60	FF	OPD,SAR

146	North	30	FF	OPD,SAR
147	North	30	FF	OPD,SAR
148	MSA	30	FF	ODM,SAR
149	MSA	15	FF	OPD,SAR
150	MSA	60	FF	OPD,SAR
151	MSA	30	FF	OPD,SAR
152	MSA	60	FF	ODM,SAR
153	MSA	30	FF	ODM,SAR
154	MSA	30	FF	OPD,SAR
155	MSA	15	FF	OPD,SAR
156	MSA	30	FF	ODM,SAR
157	MSA	15	FF	ODM,SAR
158	MSA	60	FF	OPD,SAR
159	MSA	30	FF	OPD,SAR
160	MSA	60	FF	ODM,SAR
161	MSA	30	FF	OPD,SAR
162	MSA	30	FF	OPD,SAR
163	MSA	15	FF	OPD,SAR
165	ISI	5	FF	Es,OPD,SAR

183	Dual Safe	3	FF	Es,OPD,SAR
184	Dual Safe	3	FF	Es,OPD,SAR
187	Scott	5	FF	Es,OPD,SAR
188	North	5	FF	Es,OPD,SAR
189	O-Two Systems	5	FF	Es,OPD,SAR
190	ISI	30	FF	OPD,SAR
191	ISI	30	FF	OPD,SAR
192	ISI	60	FF	OPD,SAR
194	PMI	5	HH	Es,OPD,SAR
196	National Draeger	5	FF	Es,OPD,SAR
197	Interspiro	60	FF	OPD,SAR
211	Respiratory Systems	15 FF		OPD,SAR
212	Scott	45 min.	FF	OPD,SAR
213	Interspiro	45	FF	OPD,SAR
214	SAMS	3	HH	Es,OPD,SAR
215	MSA	5	FF	Es,OPD,SAR
218	Respiratory Systems	5 FF		Es,OPD,SAR
219	Respiratory Systems	10 FF		Es,OPD,SAR

221	National Draeger	15	FF	OPD, SAR
222	National Draeger	30	FF	OPD, SAR
223	National Draeger	30	FF	OPD, SAR
224	National Draeger	45	FF	OPD, SAR
225	National Draeger	60	FF	OPD, SAR
227	National Draeger	5	FF	Es,OPD,SAR
230	Racal Panorama (Globe)	15	FF	Es,OPD,SAR
234	ISI	45	FF	OPD,SAR
235	ISI	60	FF	OPD,SAR
236	ISI	30	FF	OPD,SAR
237	ISI	30	FF	OPD,SAR
238	ISI	30	FF	OPD,SAR
240	Survivair	5	FF	Es,OPD,SAR
244	Racal Panorama (Globe)	15	FF	OPD,SAR
246	Racal Panorama (Globe)	15	FF	OPD,SAR
247	MSA	8	FF	ES,OPD,SAR

248	MSA	4	FF	Es,OPD,SAR
249	MSA	8	FF	Es,OPD,SAR
251	MSA	5	FF	OPD,SAR
252	MSA	5	FF	OPD,SAR
253	MSA	5	FF	OPD,SAR
259	Racal Panorama (Globe)	5	FF	OPD,SAR
260	MSA	15	FF	OPD,SAR
261	Breathing Systems	5	FF	OPD,SAR
262	Cairns and Brother	30	FF	OPD,SAR
263	Cairns and Brother	30	FF	OPD,SAR
264	Cairns and Brother	45	FF	OPD,SAR
265	Cairns and Brother	60	FF	OPD,SAR
266	MSA	5	FF	Es,OPD,SAR
267	MSA	10	FF	Es,OPD,SAR
268	National Draeger	45	FF	OPD,SAR
270	Survivair	45	FF	OPD,SAR
271	Cabot Safety	5	FF	Es,OPD,SAR

272	Pro-Tech	5	FF	Es,OPD,SAR
273	Pro-Tech	10	FF	Es,OPD,SAR
276	Racal Panorama	15	FF	OPD,SAR
277	Racal Panorama	30	FF	OPD,SAR
280	Racal Panorama	30	FF	OPD,SAR
281	Willson	5	FF	Es,OPD,SAR
282	Survivair	10	FF	Es,OPD,SAR
284	Survivair	30	FF	OPD,SAR
285	Survivair	30	FF	OPD,SAR
286	Survivair	45	FF	OPD,SAR
287	Survivair	60	FF	OPD,SAR
290	Survivair	5	FF	Es,OPD,SAR
292	Willson	30	FF	OPD,SAR
293	Willson	30	FF	OPD,SAR
294	Willson	45	FF	OPD,SAR
295	Willson	60	FF	OPD,SAR
296	ISI	10	FF	OPD,SAR
297	National Draeger	10	FF	Es,OPD,SAR

298	National Draeger	20	FF	Es,OPD,SAR
299	National Draeger	15	FF	Es,OPD,SAR
300	Survivair	5	FF	Es,OPD,SAR
301	Survivair	10	FF	Es,OPD,SAR
302	MSA	45	FF	OPD,SAR

GAS MASKS (14G)

B. Gas Masks

1. Ammonia

Approval

Approved for respiratory protection against ammonia.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - AMMONIA

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
88	MSA	Fm	FF	DM	
93	Willson	Fm	FF	DFM	MA
96	MSA	Bm	FF	HA	OV/CO/AG
101	MSA	Bm	FF	DM	
103	Scott	Fm	FF	DM	MA
111	North	Fm	FF		
112	MSA	Fm	FF	DFM	OV/CI
121	Pirelli	Fm	FF		
126	MSA	Fm	FF	DM	
128	Pirelli	Fm	FF	H	
132	Racal	PAPR	FF		MA
137	MSA	SAR	FF		
140	Scott	Fm	FF	DM	OV/CI/HCl MA/H ₂ S
144	Willson	Fm	FF	DFM	MA
148	MSA	Bm	FF	DM	OV/CI
151	MSA	Bm	FF	DM	
157	MSA	Bm	FF	DM	OV/CI
163	Pulmosan	Fm	FF	DFM	MA

166	MSA	Bm	FF	DM	
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171	MSA	Fm	FF	DM	OV/CI
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2. Chlorine

Approval

Approved for respiratory protection against chlorine.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and page 9 for gas and vapor.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - CHLORINE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
89	MSA	Fm	FF	DM	
95	Willson	Fm	FF	DFM	
98	MSA	Bm	FF	DM	OV/H2S/PH3
102	Scott	Fm	FF	DM	
105	MSA	Fm	FF	HA	
106	MSA	Fm	FF	H	
112	MSA	Fm	FF	DFM	OV/NH3
113	MSA	SAR	ON	HA	
114	MSA	SAR	ON	HA	
118	Scott	Fm	FF	H	
123	Racal	PAPR	FF		HCl
130	Scott	Fm	FF	DM	HCl/H2S CH2-O
131	Scott	Fm	FF	HRA	HCl/H2S CH2-O
140	Scott	Fm	FF	DM	OV/MA/HCl NH3/H2S
143	Willson	Fm	FF	DFM	
147	MSA	Bm	FF	DM	
148	MSA	Bm	FF	DM	OV,NH3

153	MSA	Bm	FF	DM	
157	MSA	Bm	FF	DM	OV/NH3
158	MSA	Bm	FF	DM	H2S/OV/PH3/ CLO2
162	Pulmosan	Fm	FF	DFM	
170	MSA	Bm	FF	DM	
171	MSA	Bm	FF	DM	OV/NH3

3. Sulfur Dioxide

Approval

Approved for respiratory protection against sulfur dioxide.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not use in concentrations which generate high heats of reaction with sorbent material.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - SULFUR DIOXIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
92	MSA	Fm	FF	DM	

4. Acid Gases

Approval

Approved for respiratory protection against acid gases.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not use in concentrations which generate high heats of reaction with sorbent material.

Not for use against gases and vapors with poor warning properties.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - ACID GAS

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
96	MSA	Bm	FF	HA	OV/CO/AG
100	MSA	Bm	FF	DM	OV/HCN
107	MSA	Fm	FF	DM	OV
127	Willson	Fm	FF	DM	OV
129	Scott	Fm	FF	DM	OV/H2S CH2-O
133	Racal	PAPR	FF		
145	Willson	Fm	FF	DM	OV
149	MSA	Bm	FF	DM	OV
155	MSA	Bm	FF	DM	OV
164	Pulmosan	Fm	FF	DM	OV
169	MSA	Bm	FF	DM	OV
174	MSA	Bm	FF	DM	OV/CH2-O
175	MSA	Bm	FF	DM	OV/CH2-O
176	MSA	Fm	FF	DM	OV/CH2-O

5. Organic Vapors

Approved for respiratory protection against organic vapors.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not wear for protection against gases or vapors with poor warning properties or those which generate high heats of reaction with sorbent materials in the canister.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - ORGANIC VAPOR

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
86	MSA	Fm	FF	HA	Pest
87	MSA	Fm	FF	DM	
96	MSA	Bm	FF	HA	NH3/CO/AG
97	MSA	Bm	FF	DM	
98	MSA	Bm	FF	DM	Cl/H2S/PH3
99	MSA	Bm	FF	H	Pest
100	MSA	Bm	FF	DM	AG/HCN
104	Scott	Fm	FF	DM	
107	MSA	Fm	FF	DM	AG
108	MSA	Fm	FF	HA	
110	North	Fm	FF		
112	MSA	Fm	FF	DFM	NH3/Cl
115	MSA	Fm	FF	HA	
116	MSA	Fm	ON	HA	
117	Scott	Fm	FF	H	Pest
119	Pirelli	Fm	FF		
120	Pirelli	Fm	FF	H	
122	Racal	PAPR	FF		

124	MSA	SAR	FF	HA	Pest
125	MSA	SAR	FF	DM	AG
127	Willson	Fm	FF	DM	AG
129	Scott	Fm	FF	DM	AG/CH2-O H2S
136	MSA	SAR	FF	DM	
138	MSA	SAR	FF	HA	Pest
139	MSA	SAR	FF	HA	
140	Scott	Fm	FF	DM	MA/CI/HCl NH3/H2S
141	National Draeger	Fm	FF	H	
142	Willson	Fm	FF	DFM	Pest
145	Willson	Fm	FF	DM	AG
148	MSA	Bm	FF	DM	CI/NH3
149	MSA	Bm	FF	DM	AG
150	MSA	Bm	FF	DM	
152	MSA	Bm	FF	HA	Pest
154	MSA	Bm	FF	HA	
155	MSA	Bm	FF	DM	AG
157	MSA	Bm	FF	DM	CI/NH3

158	MSA	Fm,Bm	FF	DM	CI/H2S/PH3/ CLO2
161	Pulmosan	Fm	FF	DFM	Pest
164	Pulmosan	Fm	FF	DM	AG
165	MSA	Bm	FF	DM	
167	MSA	Bm	FF	HA	Pest
168	MSA	Bm	FF	HA	
169	MSA	Bm	FF	DM	AG
171	MSA	Bm	FF	DM	CI/NH3
174	MSA	Bm	FF	DM	AG/CH2-O
175	MSA	Bm	FF	DM	AG/CH2-O
176	MSA	Fm	FF	DM	AG/CH2-O

6. Carbon Monoxide

Approval

Approved for respiratory protection against carbon monoxide.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - CARBON MONOXIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
82	MSA	Es	MP		
83	Drager	Es	MP		
96	MSA	Bm	FF	HA	NH3/OV/AG
173	Drager	Es	MP		

7. Pesticides

Approval

Approved for respiratory protection against pesticides.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not wear for protection against gases or vapors with poor warning properties or those which generate high heats of reaction with sorbent materials in the canister.

Not approved for fumigants.

Refer to pesticide label for limitations on respirator use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - PESTICIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other gas and Vapor Approval
86	MSA	Fm	FF	HA	OV
94	Willson	Fm	FF	DFM	OV
99	MSA	Bm	FF	H	OV
117	Scott	Fm	FF	H	OV
124	MSA	SAR	FF	HA	OV
138	MSA	SAR	FF	HA	OV
142	Willson	Fm	FF	DFM	OV
152	MSA	Bm	FF	HA	OV
161	Pulmosan	Fm	FF	DFM	OV
167	MSA	Fm	FF	HA	OV

8. Other gases and vapors

Approval

See approval labels for approved maximum use concentration and for specific limitations.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

GAS MASKS - OTHER GASES AND VAPORS - CHLORINE DIOXIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
158	MSA	Fm	FF	DM	OV/ClH ₂ S/ PH ₃

GAS MASKS - OTHER GASES AND VAPORS - VINYL CHLORIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
84	MSA	Bm	FF		
85	Scott	Bm	FF		
91	North	Bm	FF		

GAS MASKS - OTHER GASES AND VAPORS - PHOSPHINE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
98	MSA	Bm	FF	DM	OV/H2S/CI
158	MSA	Bm	FF	DM	OV/H2S/CI/ CLO2
178	National Draeger	Fm		FF	HOV/H2S/CI/ CLO2

GAS MASKS - OTHER GASES AND VAPORS - HYDROGEN SULFIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
98	MSA	Bm	FF	DM	OV/PH3/Cl
129	Scott	Fm	FF	DM	OV/AG/ CH2-O
130	Scott	Fm	FF	DM	Cl/HCl CH2-O
131	Scott	Fm	FF	HRA	Cl/HCl CH2-O
140	Scott	Fm	FF	DM	OV/Cl/HCl NH3/MA

GAS MASKS - OTHER GASES AND VAPORS - HYDROGEN SULFIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
158	MSA	Bm	FF	DM	Cl/OV/PH3/ ClO2

GAS MASKS - OTHER GASES AND VAPORS - HYDROGEN CHLORIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
123	Racal	PAPR	FF		Cl
130	Scott	Fm	FF	DM	Cl/H ₂ S CH ₂ -O
131	Scott	Fm	FF	HRA	Cl/H ₂ S CH ₂ -O
140	Scott	Fm	FF	DM	OV/Cl/NH ₃ MA/H ₂ S

GAS MASKS - OTHER GASES AND VAPORS - ETHYLENE OXIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
134	MSA	Fm	FF	DM	

GAS MASKS - OTHER GASES AND VAPORS - HYDROGEN FLUORIDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
135	MSA	Fm	FF	HA	
146	MSA	Bm	FF	HA	
156	MSA	Bm	FF	HA	
172	MSA	Bm	FF	HA	

GAS MASKS - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
129	Scott	Fm	FF	DM	H2S/OV AG
130	Scott	Fm	FF	DM	H2S/HCl Cl
131	Scott	Fm	FF	HRA	H2S/HCl Cl
174	MSA	Bm	FF	DM	OV/AG
175	MSA	Bm	FF	DM	OV/AG
176	MSA	Fm	FF	DM	OV/AG

GAS MASKS - OTHER GASES AND VAPORS - METHYLAMINE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
93	Willson	Fm	FF	DFM	NH3
103	Scott	Fm	FF	DM	NH3
132	Racal	PAPR	FF		NH3
140	Scott	Fm	FF	DM	OV/ClVHCl NH3/H2S
144	Willson	Fm	FF	DFM	NH3
163	Pulmosan	Fm	FF	DFM	NH3

GAS MASKS - OTHER GASES AND VAPORS - HYDROGEN CYANIDE (ESCAPE ONLY)

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
100	MSA	Bm	FF	DM	OV/AG

GAS MASKS - OTHER GASES AND VAPORS - ALPHA CHLOROACETOPHENONE

Approval Number TC-14G-	Approval Issued to	Respirator Type	Facepiece Type	DFM Approval	Other Gas and Vapor Approval
159	Def-Tec	Fm	FF	HA	
160	MSA	Fm	FF	HA	
177	Avon	Fm	FF		
179	Racal	Fm	FF	HRA	

SUPPLIED AIR RESPIRATORS (19C)

C. Supplied Air Respirators

1. Type C Continuous Flow

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SUPPLIED AIR RESPIRATORS - TYPE C CONTINUOUS FLOW

Approval Number TC-19C-	Approval Issued to	Regulator or Valve Location	Face-piece Type
64	Cesco	Bm	HH
64	US Safety	Bm	HH
64	Wheeler Protective Apparel	Bm	HH
65	Survivair	Fm	FF
66	Survivair	Fm	FF
67	Survivair	Fm	FF
68	Survivair	Fm	FF
69	3M	Bm	HH
69	Pauli & Griffin* Clemco* Bowen Tools* Empire Abrasive* Kelco Sales* Pangborn*		
70	3M Pauli & Griffin Clemco Bowen Tools Empire Abrasive Kelco Sales Pangborn	Bm	HH
71	Scott	Bm	FF
72	Scott	Bm	FF

73	Scott	Fm	FF
78	MSA	Bm	ON,FF
80	MSA	Bm	HH
81	MSA	Bm	HH
82	Pulmosan	Bm	FF
83	Willson	Bm	ON
84	Bullard	Bm	HH
84	Anderson	Bm	HH
84	Bowen	Bm	HH
84	Quaker State	Bm	HH
84	Pauli and Griffin	Bm	HH
84	Empire	Bm	HH
84	Kelco	Bm	HH
84	Marthens	Bm	HH
84	Ace	Bm	HH
84	Clemtex	Bm	HH
84	A-BEC	Bm	HH
84	Schmidt	Bm	HH

84	Matfer	Bm	HH
84	Air Components	Bm	HH
84	Porter Warner	Bm	HH
84	Clark Sand	Bm	HH
84	Sulliblast	Bm	HH
84	Key Houston	Bm	HH
85	Clemco	Bm	HH
86	Cabot Safety	Bm	ON
87	3M	Bm	HH
87	Pangborn* Pauli&Griffin* Bowen Tools* Clemco* Empire Abrasive* Kelco*		
88	Binks	Bm	ON
89	Cabot Safety	Bm	HH
92	Racal Panorama (Globe)	Fm	FF
94	Willson	Bm	FF
95	Pulmosan	Bm	ON
96	Cesco	Bm	HH

96	US Safety	Bm	HH
96	Wheeler Protective Apparel	Bm	HH
97	Scott	Fm	ON
102	Bullard	Bm	HH
102	Anderson	Bm	HH
102	Bowen	Bm	HH
102	Pauli & Griffin	Bm	HH
102	Empire	Bm	HH
102	Deane	Bm	HH
102	Kelco	Bm	HH
102	Titan	Bm	HH
102	A-BEC	Bm	HH
102	Schmidt	Bm	HH
102	Key Houston	Bm	HH
102	Clemco	Bm	HH
102	Binks	Bm	HH
102	Air Components	Bm	HH
102	Ace	Bm	HH

102	Clemtex	Bm	HH
102	Sulliblast	Bm	HH
103	MSA	Bm	HH
104	MSA	Bm	HH
109	North	Bm	ON
110	North	Bm	FF
111	Cabot Safety	Bm	FF
112	Glendale	Bm	ON,FF
113	MSA	Bm	FF
114	Binks	Bm	FF
115	MSA	Bm	HH
118	MSA	Bm	HH
120	Defense Apparel- Nucon Products	Bm	HH
121	US Safety	Bm	ON
122	Cesco	Bm	ON
123	3M	Bm	ON
124	Safety and Supply	Bm	HH
124	Trusafe	Bm	HH

125	DeVilbiss	Bm	ON
126	US Safety Service	Bm	FF
127	Cesco	Bm	FF
128	Standard Safety Equipment	Bm	HH
129	MSA	Bm	FF
131	Bullard	Bm	HH
132	Bullard	Bm	HH
133	Racal	Bm	HH
134	Racal	Bm	HH
135	Racal	Bm	HH
136	Racal	Bm	HH
137	Racal	Bm	HH
138	Racal	Bm	HH
139	Racal	Bm	HH
140	NPO	Bm	HH
141	Racal	Bm	HH
142	Racal	Bm	HH
143	Racal	Bm	HH

147	Racal	Bm	HH
150	MSA	Bm	HH
151	MSA	Bm	HH
152	MSA	Bm	HH
153	Racal	Bm	HH
154	Bullard	N/A	HH
154	DuPont	N/A	HH
155	Bullard	N/A	ON,FF
155	DuPont	N/A	ON,FF
157	3M	Bm	FF
159	MSA	Bm	HH
160	Lancs	Bm	HH
163	3M	Bm	HH
164	Survivair	Bm	FF
165	Survivair	Bm	FF
166	Willson	Bm	HH
168	Binks	Bm	FF
170	Bullard	Bm	FF
171	National Draeger	Bm	FF

172	Survivair	Bm	FF
173	Survivair	Bm	ON
176	MSA	Bm	HH
177	MSA	Bm	HH
179	Racal	Bm	FF
180	Racal	Bm	ON
181	Racal	Bm	FF
182	Racal	Bm	FF
183	Racal	Bm	ON
184	Racal	Bm	ON
185	Racal	Bm	HH
186	Racal	Bm	HH
187	Racal	Bm	HH
188	Trusafe	Bm	HH
190	Trusafe	Bm	HH
191	US Safety	Bm	HH
192	U.S. Safety	Bm	HH
193	U.S. Safety	Bm	HH
196	North	Bm	HH

197	U.S. Safety	Bm	HH
199	3M	Bm	FF
200	Neoterik	Bm	HH
201	Pulmosan	Bm	HH
202	Bullard	Bm	FF
202	DuPont	Bm	FF
203	Safety Products	Bm	HH
204	North	Bm	FF
206	Cabot Safety	Bm	FF
207	US Safety	Bm	ON
208	Willson	Bm	ON
209	Willson	Bm	FF
210	SATA	Bm	ON
211	SATA	Bm	HH
213	3M	Bm	HH
214	3M	Bm	FF
215	3M	Bm	FF
216	Vortec	Bm	HH

216	Norgren	Bm	HH
217	North	Bm	FF
218	Parmelee	Bm	HH
219	Parmelee	Bm	HH
220	MSA	Bm	HH
221	Binks	Bm	HH
222	MSA	Bm	HH
223	Binks	Bm	HH
224	MSA	Bm	HH
225	Binks	Bm	HH
228	Cabot Safety	Bm	ON
229	Bullard	Bm	HH
230	Survivair	Bm	FF
231	Survivair	Bm	ON
232	Pulmosan	Bm	FF
233	Neoterik	Bm	ON,FF
234	Cabot Safety	Bm	HH
235	Clemco	Bm	HH

241	Neoterik	Bm	FF
242	Pro-Tech	Bm	FF
242	Sellstrom	Bm	FF
243	Pro-Tech	Bm	FF
243	Sellstrom	Bm	FF
244	Kasco	Bm	HH
245	Pro-Tech	Bm	FF
245	Sellstrom	Bm	FF
246	WGM Safety Corp.	Bm	ON
249	Racal	Bm	HH
250	Racal	Bm	HH
251	Racal	Bm	HH
252	Northstar	Bm	HH
253	North	Bm	HH
255	MSA	Bm	FF
257	Cabot Safety	Bm	FF
259	MSA	Bm	ON,FF
260	MSA	Bm	ON,FF

261	Binks	Bm	ON,FF
262	Binks	Bm	ON,FF
263	3M	Bm	ON
264	3M	Bm	ON
265	3M	Bm	ON
266	Willson	Bm	HH
267	Cabot Safety	Bm	FF
269	Survivair	Bm	Fm
270	DeVilbiss	Bm	ON
271	Bullard	Bm	FF
272	Racal	Bm	HH
273	Racal	Bm	HH
274	MSA	Bm	ON,FF
275	Willson	Bm	HH
276	Willson	Bm	HH
277	MSA	Bm	FF
278	Willson	Bm	ON
279	Willson	Bm	FF
280	Bullard	Bm	HH

282	Hornell Speedglas	Bm	HH
283	Hornell Speedglas	Bm	HH
284	Hornell Speedglas	Bm	HH
285	MSA	Bm	HH
286	MSA	Bm	HH
290	Cabot	Bm	ON
292	Survivair	Bm	ON
293	E.D. Bullard	Bm	HH
294	Binks	Bm	HH
295	Binks	Bm	HH
296	Binks	Bm	FF
297	Binks	Bm	FF
298	Survivair	Bm	HH
299	Survivair	Bm	HH
300	MSA	Bm	HH
301	MSA	Bm	HH

2. Type C Pressure Demand

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SAR TYPE C PRESSURE DEMAND

Approval Number TC-19C-	Approval Issued to	Regulator or Valve Location	Face- piece Type
67	Survivair	Fm	FF
68	Survivair	Fm	FF
74	Scott	Fm	FF
90	ISD	Fm	ON,FF
93	MSA	Bm	FF
98	Scott	Fm	ON
145	Willson	Bm	ON
146	Willson	Bm	FF
149	National Draeger	Fm	FF
156	Interspiro	Bm	FF
158	MSA	Bm	ON,FF
167	Racal Panorama (Globe)	Bm	FF
169	Binks	Bm	FF
174	Survivair	Bm	FF
175	Survivair	Bm	FF
189	ISI	Bm	FF
194	Dual Safe	Bm	FF

195	North	Bm	FF
198	North	Bm	FF
212	Willson	Fm	FF
226	Respiratory Systems	Fm	FF
227	ISD	Fm	ON,FF
237	National Draeger	Fm	FF
238	3M	Fm	FF
239	3M	Fm	FF
240	Neoterik	Bm	FF
254	3M	Bm	FF
256	Willson	Bm	FF
258	Bullard	Bm	FF
268	Pro-Tech	Fm	FF
287	MSA	Fm	FF
288	MSA	Fm	FF
289	Cabot Safety	Fm	FF
302	Survivair	Fm	FF

3. Type C Demand

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SAR TYPE C DEMAND

Approval Number TC-19C-	Approval Issued to	Regulator or Valve Location	Face- piece Type
65	Survivair	Fm	FF
66	Survivair	Fm	FF
75	MSA	Bm	ON,FF
91	MSA	Fm	ON,FF
205	MSA	Bm	ON,FF

4. Type CE Abrasive Blasting
Continuous Flow and Pressure Demand

Approval

Approved for abrasive blasting and for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

Approval Number TC-19C-	Approval Issued to	Regulator or Valve Location	Face-piece Type
64	Cesco	Bm	HH
64	US Safety Wheeler Protective Apparel	Bm	HH
69	3M Pauli & Griffin* Clemco* Bowen Tools* Empire Abrasive* Kelco Sales* Pangborn*	Bm	HH
70	3M Pauli & Griffin Clemco Bowen Tools Empire Abrasive Kelco Sales Pangborn	Bm	HH
79	Encon	Bm	HH
79	Schmidt	Bm	HH
81	MSA	Bm	HH
84	Bullard	Bm	HH
84	Anderson	Bm	HH
84	Bowen	Bm	HH
84	Quaker State	Bm	HH
84	Pauli and Griffin	Bm	HH

84	Empire	Bm	HH
84	Kelco	Bm	HH
84	Marthens	Bm	HH
84	Ace	Bm	HH
84	Clemtex	Bm	HH
84	A-BEC	Bm	HH
84	Schmidt	Bm	HH
84	Matfer	Bm	HH
84	Air Components	Bm	HH
84	Porter Warner	Bm	HH
84	Clark Sand	Bm	HH
84	Sulliblast	Bm	HH
84	Key Houston	Bm	HH
85	Clemco	Bm	HH
87	3M Pangborn* Pauli&Griffin* Bowen Tools* Clemco* Empire Abrasive* Kelco*	Bm	HH
96	Cesco	Bm	HH

96	US Safety	Bm	HH
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96	Wheeler Protective Apparel	Bm	HH
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99	Pulmosan	Bm	HH
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100	Pulmosan	Bm	HH
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102	Bullard	Bm	HH
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102	Anderson	Bm	HH
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102	Bowen	Bm	HH
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102	Pauli & Griffin	Bm	HH
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102	Empire	Bm	HH
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102	Deane	Bm	HH
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102	Kelco	Bm	HH
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102	Titan	Bm	HH
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102	A-BEC	Bm	HH
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102	Schmidt	Bm	HH
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102	Key Houston	Bm	HH
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102	Clemco	Bm	HH
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102	Binks	Bm	HH
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102	Air Components	Bm	HH
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102	Ace	Bm	HH
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102	Clemtex	Bm	HH
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102	Sulliblast	Bm	HH
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105	MSA	Bm	HH
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106	MSA	Bm	HH
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107	MSA	Bm	HH
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108	MSA	Bm	HH
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116	MSA	Bm	HH
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117	MSA	Bm	HH
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119	MSA	Bm	HH
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130	Clemco	Bm	HH
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161	MSA	Bm	FF
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162	MSA	Bm	FF
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163	3M	Bm	HH
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170	Bullard	Bm	FF
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178	MSA	Bm	FF
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216	Vortec	Bm	HH
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219	Bullard	Bm	HH
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229	Bullard	Bm	HH
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244	Kasco	Bm	HH
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247	Clemco	Bm	HH
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248	Clemco	Bm	HH
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252	Northstar	Bm	HH
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281	MSA	Bm	FF
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SAR TYPE CE PRESSURE DEMAND ABRASIVE BLASTING

Approval Number TC-19C-	Approval Issued to	Regulator or Valve Location	Face- piece Type
236	MSA	Bm	FF
291	Bullard	Bm	FF

5. Type A

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths, RPM, or pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for fitting the facepiece, for location of the blower, for preventing entanglement and fouling of the hose, or operation of the blower and for caring of the respirator while not in use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SAR TYPE A

Approval Number TC-19C-	Approval Issued to	Regulator or Valve Location	Face- piece Type
101	MSA	N/A	FF
148	MSA	N/A	FF

6. Type B

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for locating the intake of the air supply hose.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

SAR TYPE B

Approval Number TC-19C-	Approval Issued to	Regulator or Valve Location	Face- piece Type
77	MSA	N/A	FF

PARTICULATE RESPIRATORS (21C)

D. Particulate Respirators

1. Single Use

Approval

Approved for respiratory protection against pneumoconiosis- and fibrosis- producing dusts and mists.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Follow the manufacturer's instruction for replacing respirators.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

PARTICULATE RESPIRATORS - SINGLE USE

Approval Number TC-21C-	Approval Issued to	Other Approvals
132	3M	DM
143	Willson	
170A	North	
173	3M	DM
174	Binks	
195	Glendale	
214	Pulmosan	DM
215	Binks	DM
238	Glendale	D
271	Gerson	DM
292	Zee Med. Prod.	DM
293	Safety Supply	DMZ
315	Air-Tek	DM
347	North	DM
364	Balkamp	DM
416	New England Thermoplastics	DM
445	Akron Safety	DM
464	Gerson	DM

518	Zee Medical	DM
525	Akron Safety Equipment	DMZ
532	Gerson	DMZ
560	Lab Safety Supply	DM
561	Gerson	DM
584	UVEX Safety	DM
585	Better Breathing Inc.	DM
587	UVEX Safety	DM
588	Eastern Safety Equipment	DM
597	Gerson	DM
598	Shoplyne	DM
601	Better Breathing Inc.	DM
602	Lab Safety Supply	DM
615	White Knight Health Care, Inc.	DM

2. Dusts

Approval

Approved for respiratory protection against dusts having an exposure limit measured as a time weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

PARTICULATE RESPIRATORS - DUSTS

Approval Number TC-21C-	Approval Issued to	Respirator and Facepiece Type	Number of Filters	Other Approvals
595	Sam Gong	Rp,Fm,ON	1	

3. Dusts and Mists

Approval

Approved for respiratory protection against dusts and mists having an exposure limit measured as a time weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Respirator and Facepiece Type	Number of Filters	Other Approvals
132	3M	Su,ON	1	S
133	MSA	Rp,Fm,ON	2	
138	MSA	Rp,Fm,ON	1	
139	Willson	Rp,Fm,ON	1	
140	Willson	Rp,Fm,ON	2	
144	Cabot Safety	Rp,Fm,ON	2	
147	Cabot Safety	Rp,ON	1	
151	North	Rp,Fm,ON	2	
153	North	Rp,Fm,ON	1	Z
154	Sellstrom	Rp,Fm,ON	2	
154	Protech	Rp,Fm,ON	2	
154	Safe-Tex*	Rp,Fm,ON	2	
154	Eastern	Rp,Fm,ON	2	
156	MSA	Rp,Fm,ON	1	
157	Pulmosan	Rp,Fm,ON	1	
159	MSA	Rp,Fm,ON	1	
162	Cabot Safety	Rp,Fm,ON	1	

163	Cesco	Rp,Fm,ON	2	Z
164	Glendale	Rp,Fm,ON	2	Z
165	Pulmosan	Rp,Fm,ON	1	
166	Cabot Safety	Rp,Fm,ON	1	
167	DeVilbiss	Rp,Fm,ON	1	
170	North	Ru,ON	1	
172	Glendale	Rp,Fm,ON	1	
173	3M	Su,ON	1	S
174	Binks	Su,ON	1	
175	North	Rp,Fm,ON	1	
176	3M	Su,ON	1	
177	Scott REPLACED BY TC-21C-389	Rp,Fm,ON	2	
179	US Safety	Rp,Fm,ON	2	
179	Stewart Warner	Rp,Fm,ON	2	
179	Lab Safety Supply	Rp,Fm,ON	2	
180	Cesco	Rp,Fm,ON	2	
180	Northcott	Rp,Fm,ON	2	
181	MSA	Rp,Bm,ON	2	

181	MSA	Rp,Bm,ON	2	
182	Willson	Rp,Fm,FF	2	
188	MSA	Rp,Fm,FF	2	
190	3M	Su,ON	1	
191	North	Rp,Fm,FF	2	
197	Racal	PAPR,HH	1	
198	Scott	Rp,Fm,FF	2	
206	MSA	Rp,Fm,ON	1	Z
207	Cabot Safety	Rp,Fm,FF	2	
211	Racal	PAPR,HH	1	
213	MSA	Rp,Fm,ON	1	Z
214	Willson	Ru,Su,ON	1	S
214	Pulmosan	Ru,Su,ON	1	S
215	Binks	Ru,Su,ON	1	S
216	Cesco	Rp,Fm,FF	2	
217	US Safety	Rp,Fm,FF	2	
217	Lab Safety	Rp,Fm,FF		
220	MSA	Ru,ON	1	
221	Pulmosan	Rp,Fm,ON	1	

224	3M	Su,ON	1	
225	3M	PAPR,HH	1	
232	Survivair	Rp,Fm,ON	2	
233	3M	Su,ON	1	
234	3M	Su,ON	1	
235	3M	PAPR,HH	1	Z,AB
238	Glendale	Ru,Su,ON	1	
247	3M	Su,ON	1	Z
253	Willson	Rp,Bm,ON	2	
254	Willson	Rp,Bm,FF	2	
261	Glendale	Rp,Fm,FF	2	Z
264	Cabot Safety	Su,ON	1	
266	Cabot Safety	Rp,Fm,ON	1	
267	DeVilbiss	Rp,Fm,ON	1	Z
271	Gerson	Su,ON	1	S
274	MSA	Rp,Fm,ON	2	
279	3M	Su,ON	1	
282	Pulmosan	Rp,Fm,FF	1	
287	Moldex-Metric	Su,ON	1	

288	Pirelli	Rp,Fm,ON	2	
289	3M	Rp,Fm,ON	2	
290	Cesco	Su,ON	1	
291	US Safety	Su,ON	1	
292	Zee Med. Prod.	Su,ON	1	S
293	Safety Supply	Su,ON	1	Z,S
294	Neoterik	PAPR,HH	1	
295	Neoterik	PAPR,HH	1	
298	Racal	PAPR,HH	1	Z
299	Racal	PAPR,HH	1	Z
300	Pirelli	Rp,Fm,FF	2	
301	Safety Supply	Rp,Fm,ON	2	
302	Safety Supply	Rp,Fm,ON	2	
307	Willson	Rp,Fm,ON	2	
308	Willson	Rp,Bm,ON	2	
315	Air-Tek	Su,ON	1	S
317	Dunrite	Rp,Fm,ON	1	
318	3M	PAPR,HH	1	AB
320	NZ Safety Ltd	Su,ON	1	

322	Stewart-Warner	Su,ON	1	
328	Cabot Safety	Su,ON	1	
334	Cabot Safety	Su,ON	1	
335	Cabot Safety	Su,ON	1	
344	Eastern	Rp,Fm,FF	2	
344	Protech	Rp,Fm,FF	2	
344	Sellstrom	Rp,Fm,FF	2	
347	North	Su,ON	1	S
350	Moldex	Su,ON	1	
351	Cabot Safety	Su,ON	1	
352	Canadian Technical Tape	Su,ON	1	
361	3M	Su,ON	1	
363	3M	Rp,Fm,FF	2	
364	Balkamp	Su,ON	1	S
374	3M	Su,ON	1	
376	Willson	Rp,Fm,ON	2	
383	Willson	Rp,Fm,FF	2	
386	Willson	Rp,Fm,ON	1	
389	Scott	Rp,Fm,ON	2	

401	3M	Su,ON	1	Z
410	3M	Su,ON	1	Z
411	Koken	Rp,Fm,ON	2	Z
415	3M	Su,ON	1	Z
416	New England Thermoplastics	Su,ON	1	S
420	Cabot Safety	Rp,Fm,FF	2	
421	Glendale	Rp,Fm,ON	2	
431	MSA	Rp,Fm,FF	2	
433	MSA	Rp,Fm,FF	2	
443	3M	PAPR,HH	1	Z
444	3M	PAPR,HH	1	Z,AB
445	Akron Safety	Su,ON	1	S
464	Gerson	Su,ON	1	S
465	Masprot	Rp,Fm,ON	2	
466	Masprot	Rp,Fm,ON	2	
476	3M	Rp,Fm,FF	2	
478	Racal	PAPR,HH	1	
479	Racal	PAPR,HH	1	
501	MSA	Rp,Fm,FF	2	

518	Zee Medical	Su,ON	1	S
520	Cabot Safety	Rp,Fm,FF	2	
523	Moldex	Su,ON	1	
524	Moldex	Su,ON	1	
525	Akron Safety Equipment	Su,ON	1	Z,S
532	Gerson	Su,ON	1	Z,S
540	3M	Su,ON	1	
545	Masprot	Rp,Rm,ON	1	
549	Zee Medical	Su,ON	1	
550	Zee Medical	Su,ON	1	
551	Racal	Rp,Fm,ON	1	
552	Draeger	Rp,Fm,ON	1	
553	MSA	Rp,Fm,FF	2	
560	Lab Safety Supply	Su,ON	1	S
561	Gerson	Su,ON	1	S
564	3M	Su,ON	1	
565	Willson	Rp,Fm,ON	2	
572	MSA	Rp,Fm,FF	2	

579	MSA	Rp,Fm,FF	2	
584	UVEX Safety	Su,ON	1	S
585	Better Breathing Inc.	Su,ON	1	S
587	UVEX Safety	Su,ON	1	S
588	Eastern Safety Equipment	Su,ON	1	S
589	Cabot Safety	Rp,Fm,ON	2	
597	Gerson	Su,ON	1	S
598	Shoplyne	Su,ON	1	S
601	Better Breathing Inc.	Su,ON	1	S
602	Lab Safety Supply	Su,ON	1	S
612	3M	Rp,Fm,ON	2	
613	3M	Rp,Fm,ON	2	
614	3M	Rp,Fm,FF	2	
615	White Knight Health Care, Inc.	Su,ON	1	S
616	ESAB	PAPR,HH	1	
618	Racal	Su,ON	1	
619	3M	Rp,Fm,ON	2	

620	3M	Rp,Fm,FF	2
623	3M	Rp,Fm,ON	2
625	Racal	Su,ON	1
630	3M	Rp,Fm,ON	2
634	TecnoI	Su,ON	1
639	Alpha Pro Tech	Su,ON	1
641	Cabot Safety	Rp,Fm,FF	2

4. Dusts, Fumes and Mists

Approval

Approved for respiratory protection against dusts, fumes and mists having an exposure limit measured as a time weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists or radon daughters as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

Approval Number TC-21C-	Approval Issued to	Respirator and Facepiece Type	Number of Filters	Other Approvals
134	MSA	Rp,Bm,Fm,ON	2	R
141	Willson	Rp,Fm,ON	2	
155	MSA	Rp,Fm,ON	2	
161	Cabot Safety	Rp,Fm,ON	2	R
169	Cabot Safety	Rp,Fm,ON	1	
183	Willson	Rp,Fm,FF	2	
187	MSA	Rp,Fm,FF	2	R
189	Glendale	Rp,Fm,ON	2	
193	US Safety	Rp,Fm,ON	2	RZ
194	Cesco	Rp,Fm,ON	2	RZ
196	Eastern	Rp,Fm,ON	2	RZ
196	Protech	Rp,Fm,ON	2	RZ
196	Sellstrom	Rp,Fm,ON	2	RZ
202	3M	Su,ON	1	R
203	North	Rp,Fm,ON	2	
204	North	Rp,Bm,ON	2	
205	North	Rp,Fm,FF	2	

209	Scott REPLACED BY TC-21C-390	Rp,Fm,ON	2	R
210	Scott	Rp,Fm,FF	2	R
218	Cesco	Rp,Fm,FF	2	RZ
219	US Safety	Rp,Fm,FF	2	RZ
222	Willson	Rp,Fm,ON	2	
223	Willson	Rp,Fm,FF	2	
230	Cabot Safety	Rp,Fm,FF	2	R
236	Survivair	Rp,Fm,ON	2	R
240	US Safety	Rp,Fm,ON	2	R
240	Lab Safety Supply			
241	Cesco	Rp,Fm,ON	2	R
242	US Safety	Rp,Fm,FF	2	R
242	Lab Safety Supply	Rp,Fm,FF	2	R
243	Cesco	Rp,Fm,FF	2	R
248	Sellstrom	Rp,Fm,ON	2	
255	Willson	Rp,Bm,ON	2	
256	Willson	Rp,Bm,FF	2	
259	Willson	Rp,Bm,ON	2	

260	Willson	Rp,Bm,FF	2	
262	Glendale	Rp,Fm,FF	2	
268	Cabot Safety	Rp,Fm,ON	2	R
273	MSA	Rp,Bm,ON	2	R
280	Survivair	Rp,Fm,ON	2	R
297	Cabot Safety	Rp,Fm,ON	2	
303	Safety Supply	Rp,Fm,ON	2	
304	Safety Supply	Rp,Fm,FF	2	
305	Cabot Safety	Rp,Fm,ON	2	
306	Cabot Safety	Rp,Fm,FF	2	
309	Willson	Rp,Bm,ON	2	
310	Willson	Rp,Fm,ON	2	
311	Willson	Rp,Fm,ON	2	
312	Willson	Rp,Fm,ON	2	
323	MSA	Rp,Fm,ON	2	R
331	North	Rp,Fm,ON	2	
332	North	Rp,Fm,ON	2	
333	North	Rp,Fm,FF	2	

340	North	Rp,Fm,ON	2	
341	North	Rp,Fm,ON	2	
342	North	Rp,Fm,FF	2	
345	Protech	Rp,Fm,FF	2	RZ
345	Eastern	Rp,Fm,FF	2	
345	Sellstrom	Rp,Fm,FF	2	RZ
348	3M	Su,ON	1	R
365	Willson	Rp,Fm,ON	2	
366	Willson	Rp,Fm,ON	2	
367	Willson	Rp,Fm,FF	2	
368	Willson	Rp,Bm,ON	2	
369	Willson	Rp,Bm,FF	2	
370	Willson	Rp,Bm,ON	2	
388	North	Su,ON	1	
390	Scott	Rp,Fm,ON	2	R
392	Jackson Products	Su,ON	1	
394	Willson	Rp,Fm,ON	2	R
395	Willson	Rp,Fm,FF	2	R
400	3M	Su,ON	1	RZ

409	3M	Su,ON	1	RZ
412	Koken	Rp,Fm,ON	2	RZ
418	Moldex	Su,ON	1	R
419	Cabot Safety	Rp,FF,Fm	2	
422	Glendale	Rp,Fm,ON	2	
424	Willson	Rp,Fm,ON	1	
435	MSA	Rp,Fm,FF	2	R
507	MSA	Rp,Fm,FF	2	R
519	Gerson	Su,ON	1	R
520	Cabot Safety	Rp,Fm,FF	2	
521	Cabot Safety	Rp,Fm,FF	2	
555	MSA	Rp,Fm,FF	2	R
557	North	Su,ON	2	
566	Willson	Rp,Fm,ON	2	
568	Willson	Rp,Fm,ON	2	
569	MSA	Rp,Fm,FF	2	R
574	MSA DE CHILI	Rp,Fm,ON	2	R
576	MSA	Rp,Fm,FF	2	R

590	Cabot Safety	Rp,Fm,ON	2	R
626	UVEX	Su,ON	1	R
629	Racal	Su,ON	1	
636	Willson	Rp,Fm,ON	2	
640	Cabot Safety	Rp,Fm,FF	2	
642	Cabot Safety	Rp,Fm,ON	2	

5. High Efficiency

Approval

Approved for respiratory protection against dusts, fumes and mists having an exposure limit measured as a time weighted average less than 0.05 milligram per cubic meter and radionuclides.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists, radon daughters, as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

For Combination Type C Supplied Air Respirators with escape high efficiency respirators add the following limitations:

Use only the hose lengths and pressure ranges specified on the approval label.

When airflow is cut off, switch to filter and immediately exit to clean air.

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Filters	Other Approvals
135	MSA		Rp,Bm,Fm,ON	2	A
136A	3M		PAPR,HH	1	R
137	3M		PAPR,HH	1	AB
142	Willson		Rp,Fm,ON	2	A
149	Scott		Rp,Fm,FF	1	A
150	MSA		Rp,Fm,FF	1	A
152	North		Rp,Fm,ON	2	A
155	MSA		Rp,Fm,FF	2	A
158	Pulmosan		Rp,Fm,ON	1	RA
160	Cabot Safety		Rp,Fm,ON	2	
168	North		Rp,Bm,ON	2	A
171	North		Rp,Fm,FF	2	A
178 REPLACED BY TC-21C-391	Scott		Rp,Fm,ON	2	RA
184	Willson		Rp,Fm,FF	2	A
186	MSA		PAPR,ON,FF	2	A
198	Scott		Rp,Fm,FF	2	
199	Scott		Rp,Fm,FF	2	RA

200	MSA	SAR,FF	1	A
201	MSA	SAR,ON	1	A
208	Cabot Safety	Rp,Fm,FF	2	
212	Racal	PAPR,HH	2	RA
226	Cesco	Rp,Fm,ON	2	RA
227	Cesco	Rp,Fm,FF	2	RA
228	US Safety	Rp,Fm,ON	2	RA
228	Lab Safety Supply	Rp,Fm,ON	2	RA
229	US Safety	Rp,Fm,FF	2	RA
229	Lab Safety Supply	Rp,Fm,FF	2	RA
231	Protech	Rp,Fm,ON	2	RA
237	Racal	PAPR,HH	2	RA
239	3M	Su,ON	1	RA
244	Survivair	Rp,Fm,ON	2	RA
245	Survivair	Rp,Fm,FF	2	RA
246	3M	PAPR,HH	1	A
249	Cabot Safety	Rp,Fm,ON	2	RA
250	Cabot Safety	Rp,Fm,FF	2	RA

251	North	Su,ON	1	
252	Neoterik	PAPR,HH	1	RA
257	Willson	Rp,Bm,ON	2	A
258	Willson	Rp,Bm,FF	2	A
263	Neoterik	PAPR,HH	1	RA
265	3M	Rp,Fm,ON	2	RA
269	Neoterik	PAPR,HH	1	RA
270	Neoterik	PAPR,HH	1	RA
272	MSA	Rp,Bm,ON	2	A
275	Racal	PAPR,HH	3	RA
276	Racal	PAPR,FF	3	RA
277	Racal	PAPR,HH	3	RA
278	Racal	PAPR,HH	3	RA
281	Pulmosan	Rp,Fm,FF	1	RA
283	Pirelli	Rp,Fm,FF	1	
284	Pirelli	Rp,Fm,ON	1	
285	Neoterik	PAPR,HH	1	RA
286	Neoterik	PAPR,HH	1	RA
296	Cabot Safety	Rp,Fm,ON	1	RA

313	Willson	Rp,Fm,ON	2	A
314	Willson	Rp,Bm,ON	2	A
316	Draeger	Rp,Fm,FF	1	
319	3M	PAPR,HH	1	RA,AB
321	Racal	PAPR,HH	3	RA
324	Racal	PAPR,ON	3	RA
325	Glendale	Rp,Fm,ON	2	RA
326	Glendale	Rp,Fm,FF	2	RA
327	Neoterik	PAPR,ON	3	RA
329	Racal	PAPR,HH	3	RA
330	Neoterik	PAPR,FF	3	RA
336	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	A
337	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	A
338	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	A
339	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	A
343	MSA	Rp,Bm,FF	1	A
346	Protech	Rp,Fm,FF	2	RA
346	Eastern	Rp,Fm,FF	2	RA

346	Sellstrom	Rp,Fm,FF	2	RA
349	Eastern	Rp,Fm,ON	2	RA
353	Racal	PAPR,FF	1	RA
354	MSA	PAPR,ON NOT APPROVED FOR RADIONUCLIDES	2	A
355	MSA	PAPR,FF NOT APPROVED FOR RADIONUCLIDES	2	A
356	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	1	A
357	MSA	SAR,ON NOT APPROVED FOR RADIONUCLIDES	1	A
358	MSA	SAR,FF NOT APPROVED FOR RADIONUCLIDES	1	A
359	MSA	SAR,FF NOT APPROVED FOR RADIONUCLIDES	1	A
360	North	SAR,FF	2	A
362	3M	Rp,Fm,FF	2	RA
371	Willson	Rp,Fm,FF	1	A
372	Willson	Rp,Bm,FF	1	A
373	Willson	Rp,Bm,FF	1	A
375	North	Rp,Fm,FF	2	A
377	Willson	Rp,Fm,ON	2	A
378	Willson	Rp,Fm,ON	1	A

379	Willson	Rp,Bm,ON	1	A
380	Willson	Rp,Bm,FF	1	A
381	Willson	Rp,Bm,FF	1	A
382	Racal	Rp,Fm,FF	1	RA
384	Willson	Rp,Fm,FF	2	A
385	ISI	Rp,Fm,FF	1	
387	Willson	Rp,Fm,FF	1	A
391	Scott	Rp,Fm,ON	2	RA
393	Willson	Rp,Fm,FF		A
396	MSA	Rp,Bm,ON	1	A
397	MSA	FF,Bm,Rp	1	A
398	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	1	A
399	MSA	Rp,Bm,FF NOT APPROVED FOR RADIONUCLIDES	1	A
402	Neoterik	PAPR,HH	1	RA,AB
403	Neoterik	PAPR,ON	1	RA
404	Neoterik	PAPR,FF	1	RA
405	Neoterik	PAPR,FF	3	RA
406	Neoterik	Rp,Fm,FF	2	RA
407	Neoterik	Rp,Fm,FF	2	RA

408	Neoterik	PAPR,FF	3	RA
413	Koken	Rp,Fm,ON	2	RA
414	Survivair	Rp,Fm,FF	2	RA
417	Cabot Safety	Rp,Fm,FF	2	RA
423	Glendale	Rp,Fm,ON	2	RA
425	Neoterik	PAPR,FF	3	RA
426	MSA	Rp,Bm,FF	1	A
427	MSA	Rp,Bm,FF	1	A
428	MSA	Rp,Bm,FF	1	A
429	MSA	Rp,Bm,ON	1	A
430	MSA	Rp,Fm,FF	2	A
432	MSA	Rp,Fm,FF	2	A
434	MSA	Rp,Fm,FF	2	A
436	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	A
437	3M	Su,ON	1	
438	3M	Su, ON	1	Z
439	3M	Rp,Fm,ON	2	RA
440	3M	Rp,Fm,FF	2	RA
441	RSI	Rp,Fm,FF	1	A

442	National Draeger	Rp,Fm,FF	1	
446	Neoterik	PAPR,FF	2	RA
447	Neoterik	PAPR,FF	2	RA
448	Neoterik	PAPR,FF	2	RA
449	Neoterik	PAPR,FF	1	RA
450	Neoterik	PAPR,ON	1	RA
451	Neoterik	PAPR,FF	1	RA
452	Willson	PAPR,FF,Bm	1	A
453	Willson	PAPR,ON,Bm	1	A
454	Neoterik	Rp,Fm,FF	2	RA
455	Survivair, Inc.	Rp,Fm,FF	2	RA
456	3M	Bm,PAPR,FF	1	A
457	Neoterik	Rp,Fm,FF	2	RA
458	Neoterik	Rp,Fm,FF	2	RA
459	Kasco	PAPR,HH	1	A
460	Neoterik	PAPR,FF	1	RA
461	Neoterik	PAPR,FF	1	RA
462	Racal	Rp,Fm,FF	1	RA
463	Racal	Rp,Fm,FF	1	RA

467	Masprot	Rp,Fm,ON	2	A
468	MSA	FF,Rp,PAPR	2	A
469	MSA	FF,Rp,PAPR NOT APPROVED FOR RADIONUCLIDES	2	A
470	MSA	ON,Rp,PAPR	2	A
471	MSA	ON,Rp,PAPR	2	A
472	MSA	PAPR,HH	2	A
473	MSA	PAPR,HH NOT APPROVED FOR RADIONUCLIDES	2	A
474	Bullard	PAPR,FF	2	RA
475	3M	Rp,Fm,FF	2	RA
477	3M	Rp,Fm,FF	2	RA
480	Racal	PAPR,HH	3	RA
481	North	FF,Fm,PAPR	2	RA
482	Neoterik	PAPR,FF	1	RA
483	3M	PAPR,HH	1	A
484	Bullard	PAPR,HH	2	RA
485	Sellstrom	Rp,Fm,FF,Es	1	RA
485	Pro-Tech	Rp,Fm,FF,Es	1	RA
486	Pro-Tech	Rp,Fm,FF,Es	1	RA
487	Pro-Tech	Rp,Fm,FF	1	RA

487	Sellstrom	Rp,Fm,FF	1	RA
488	3M	Rp,Fm,ON	2	RA
489	3M	Rp,Fm,FF	2	RA
490	3M	Rp,Fm,FF	2	RA
491	Survivair, Inc.	Rp,Fm,FF	2	RA
492	ISI	PAPR,FF	1	RA
493	Cabot Safety	PAPR,FF	2	RA
495	MSA	PAPR,FF	1	A
496	MSA	PAPR,FF NOT APPROVED FOR RADIONUCLIDES	1	A
497	National Draeger	Rp,Fm,FF	1	A
498	Pro-Tech	PAPR,FF	1	A
498	Sellstrom	PAPR,FF	1	A
499	Survivair	PAPR,FF	1	RA
500	MSA	Rp,Fm,FF	2	A
502	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	A
503	MSA	Rp,Bm,FF	1	A
504	MSA	Rp,Bm,ON	1	A
505	MSA	Rp,Bm,FF NOT APPROVED FOR RADIONUCLIDES	1	A

506	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	1	A
507	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	1	A
508	Willson	Rp,Fm,FF	1	A
509	Critical Products Group	Rp,Fm,ON	2	A
510	Racal	Rp,Fm,FF	1	RA
511	Bullard	PAPR,HH	2	RA
512	MSA	PAPR,FF	2	A
513	MSA	PAPR,ON	2	A
514	MSA	PAPR,ON NOT APPROVED FOR RADIONUCLIDES	2	A
515	MSA	PAPR,FF NOT APPROVED FOR RADIONUCLIDES	2	A
516	MSA	PAPR,HH	2	A
517	MSA	PAPR,HH NOT APPROVED FOR RADIONUCLIDES	2	A
522	Cabot Safety	Rp,Fm,FF	2	RA
526	Glendale	PAPR,ON	2	RA
527	Glendale	PAPR,FF	2	RA
528	Pulsafe	PAPR,FF	1	RA
529	Pro-Tech	Rp,Fm,FF	1	HRA

530	3M	PAPR,FF	1	A
531	Cabot Safety	PAPR,FF	2	RA
533	Cabot Safety	Rp,Fm,ON	2	RA
534	Cabot Safety	Rp,Fm,FF	2	RA
535	Cabot Safety	Rp,Fm,FF	2	RA
536	Cabot Safety	Rp,Fm,FF	2	RA
537	Cabot Safety	Rp,Fm,FF	2	RA
538	Cabot Safety	Rp,Fm,FF	2	RA
539	Cabot Safety	Rp,Fm,FF	2	RA
541	Cabot Safety	Rp,Fm,FF	2	RA
542	Hornell Speedglas	PAPR,HH	3	RA
543	Cabot Safety	Rp,Fm,ON	1	RA
544	Cabot Safety	Rp,Fm,ON	1	RA
546	Survivair	PAPR,FF	3	RA
547	Willson	Su,ON	2	A

548	3M	Rp,Fm,ON	2	RA
554	MSA	Rp,Fm,FF	2	A
556	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	A
558	North	Su,ON	2	
559	Kasco	PAPR,HH	2	A
562	Racal	Rp,Fm,FF	1	RA
563	Survivair	Su,ON	2	RA
567	Willson	Rp,Fm,ON	2	A
570	MSA	Rp,Fm,FF	2	A
571	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	A
573	MSA DE CHILI LTDA	Rp,Fm,ON	2	A
575	Racal	PAPR,HH	3	RA
577	MSA	Rp,Fm,FF	2	A
578	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	A
580	Willson	PAPR,FF	1	A
581	Cabot	Rp,Fm,FF	1	RA
582	3M	Rp,Fm,ON	2	RA
583	3M	Rp,Fm,ON	2	RA

586	Cabot Safety	PAPR,ON	2	RA
591	Cabot Safety	Rp,Fm,ON	2	RA
592	Moldex-Metric	Rp,Fm,ON	2	RA
593	MSA	Rp,Fm,FF	1	A
594	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	1	A
596	3M	Rp,Fm,FF	2	RA
599	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	A
599	Critical Services	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	A
600	MSA	Rp,Fm,ON	2	A
603	MSA	PAPR,ON	2	A
604	UVEX Safety	Su,ON	1	R
605	Hornell Speedglas	PAPR,HH	3	RA
606	3M	Rp,Fm,ON	2	RA
607	3M	Rp,Fm,FF	2	RA
608	3M	Rp,Fm,ON	2	RA
609	3M	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	R
610	3M	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	R

611	3M	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	R
617	National Draeger	Rp,Fm,ON	1	A
621	3M	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	R
622	3M	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	R
624	3M	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	R
627	Kasco	PAPR,HH	2	A
628	Survivair	PAPR,ON	3	RA
631	MSA	Rp,Fm,FF	2	A
632	National Draeger	PAPR,FF	1	RA
637	MSA	Rp,Fm,FF	2	A
638	MSA	Rp,Fm,FF	2	

CHEMICAL CARTRIDGE RESPIRATORS (23C)

E. Chemical Cartridges

1. Ammonia

Approval

Approved for respiratory protection against ammonia.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations

CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
528	Pirelli	Rp,Fm,FF	2		
544	Safety Supply	Rp,Fm,ON	2		
545	Safety Supply	Rp,Fm,FF	2		
970	Cabot Safety	PAPR,FF	2		
1028	Cabot Safety	Rp,Fm,FF	1		
1029	Cabot Safety	Rp,Fm,FF	1		
1034	Cabot Safety	PAPR,FF	2		
1175	North	Es,Mp	1		
1176	North	Es,Mp	1	DM	
1213	Scott	Es,Mp	1		
1214	Cabot Safety	PAPR,ON	2		
1218	Scott	Es,Mp	1	DM	

2. Methylamine and Ammonia

Approval

Approved for respiratory protection against methylamine and ammonia.

Limitations

Not for use in atmospheres immediately dangerous to life and health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - METHYLAMINE and AMMONIA

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
43	MSA	Rp,Fm,Bm,ON	2	DM	
63	North	Rp,Fm,ON	2		
64	North	Rp,Fm,ON	2	DM	
70	Willson	Rp,Fm,ON	2		
71	Willson	Rp,Fm,ON	2	DM	
109	Cabot Safety	Rp,Fm,ON	2		
139	Willson	Rp,Fm,FF	2		
140	Willson	Rp,Fm,FF	2	DM	
147	MSA	Rp,Fm,FF	2	DM	
152	MSA	Rp,Fm,FF	2	HA	
158	MSA	Rp,Fm,Bm,ON	2	HA	
176	North	Rp,Bm,ON	2		
177	North	Rp,Bm,ON	2	DM	
182	North	Rp,Fm,FF	2		
187	North	Rp,Fm,FF	2	DM	
191	US Safety	Rp,Fm,ON	2		
192	Cesco	Rp,Fm,ON	2		
193	US Safety	Rp,Fm,ON	2	DM	

193	Lab Safety Supply	Rp,Fm,ON	2	DM
194	Cesco	Rp,Fm,ON	2	DM
213	North	Rp,Fm,ON	2	HRA
214	North	Rp,Bm,ON	2	HRA
215	North	Rp,Fm,FF	2	HRA
217	3M	Su,ON	1	DM
235	Cabot Safety	Rp,Fm,FF	2	
252 REPLACED BY TC-23C-772	Scott	Rp,Fm,ON	2	
253	Scott	Rp,Fm,FF	2	
254	Scott	Rp,Fm,ON	2	DM
255	Scott	Rp,Fm,FF	2	DM
256	Scott	Rp,Fm,ON	2	DFMR
257	Scott	Rp,Fm,FF	2	DFMR
269	Cesco	Rp,Fm,FF	2	DM
270	US Safety	Rp,Fm,FF	2	DM
270	Lab Safety Supply	Rp,Fm,FF	2	DM
279	Protech	Rp,Fm,ON	2	
280	Protech	Rp,Fm,ON	2	DM

280	Sellstrom	Rp,Fm,ON	2	DM
283	Pulmosan	Rp,Fm,ON	1	
284	Pulmosan	Rp,Fm,ON	1	DM
289	Willson	Rp,Fm,ON	2	
290	Willson	Rp,Fm,FF	2	
291	Willson	Rp,Fm,ON	2	HA
292	Willson	Rp,Fm,FF	2	HA
314	Cesco	Rp,Fm,ON	2	HRA
315	US Safety	Rp,Fm,ON	2	HRA
315	Lab Safety Supply	Rp,Fm,ON	2	HRA
316	Cesco	Rp,Fm,FF	2	HRA
317	US Safety	Rp,Fm,FF	2	HRA
317	Lab Safety Supply	Rp,Fm,FF	2	HRA
319	Sellstrom	Rp,Fm,ON	2	
329	Cabot Safety	Rp,Fm,ON	2	
330	Cabot Safety	Rp,Fm,FF	2	
331	Cabot Safety	Rp,Fm,ON	2	DM

332	Cabot Safety	Rp,Fm,FF	2	DM
347	Eastern	Rp,Fm,ON	2	
350	North	Su,ON	1	
358	North	Su,ON	1	DM
364	Willson	Rp,Bm,ON	2	
365	Willson	Rp,Bm,FF	2	
366	Willson	Rp,Bm,ON	2	
367	Willson	Rp,Bm,FF	2	
378	Willson	Rp,Bm,ON	2	DM
379	Willson	Rp,Bm,FF	2	
384	Willson	Rp,Bm,ON	2	HA
385	Willson	Rp,Bm,FF	2	HA
403	Glendale	Rp,Fm,ON	2	
412	Glendale	Rp,Fm,FF	2	DM
419	Cabot Safety	Rp,Fm,ON	2	HRA
420	Cabot Safety	Rp,Fm,FF	2	HRA
422	Survivair	Rp,Fm,ON	2	
423	Survivair	Rp,Fm,ON	2	

440	3M	Rp,Fm,ON	2	
441	3M	Rp,Fm,ON	2	DM
442	3M	Rp,Fm,ON	2	HRA
457	Protech	Rp,Fm,ON	2	HRA
457	Sellstrom	Rp,Fm,ON	2	HRA
463	MSA	Rp,Bm,ON	2	DM
468	MSA	Rp,Bm,ON	2	HA
498	Pulmosan	Rp,Fm,FF	1	
502	Pulmosan	Rp,Fm,FF	1	DM
513	MSA	Rp,Fm,ON	1	
515	Pirelli	Rp,Fm,ON	2	
519 REPLACED BY TC-23C-775	Scott	Rp,Fm,ON	2	HRA
520	Scott	Rp,Fm,FF	2	HAR
559	Willson	Rp,Fm,ON	2	
560	Willson	Rp,Fm,ON	2	
561	Willson	Rp,Fm,ON	2	
562	Willson	Rp,Fm,ON	2	
575	Willson	Rp,Fm,ON	2	DM
576	Willson	Rp,Fm,ON	2	DM

581	Willson	Rp,Fm,ON	2	HA
582	Willson	Rp,Fm,ON	2	HA
589	Racal	PAPR,HH	3	
590	Racal	PAPR,FF	3	
591	Racal	PAPR,HH	3	
592	Racal	PAPR,HH	3	
612	Racal	PAPR,ON	3	
623	Glendale	Rp,Fm,ON	2	HRA
624	Glendale	Rp,Fm,FF	2	HRA
628	Neoterik	PAPR,ON	3	
633	Racal	PAPR,HH	3	
639	Neoterik	PAPR,FF	3	
641	Racal	PAPR,HH	3	HRA
642	Racal	PAPR,FF	3	HRA
643	Racal	PAPR,HH	3	HRA
644	Racal	PAPR,HH	3	HRA
645	Racal	PAPR,HH	3	HRA
646	Racal	PAPR,ON	3	HRA
658	North	Rp,Fm,ON	2	DFM

659	North	Rp,Bm,ON	2	DFM
660	North	Rp,Fm,FF	2	DFM
666	Protech	Rp,Fm,FF	2	
666	Sellstrom	Rp,Fm,FF	2	
666	Eastern	Rp,Fm,FF	2	
667	Protech	Rp,Fm,FF	2	DM
667	Sellstrom	Rp,Fm,FF	2	DM
674	Protech	Rp,Fm,FF	2	HRA
674	Sellstrom	Rp,Fm,FF	2	HRA
686	3M	Rp,Fm,FF	2	
692	3M	Rp,Fm,FF	2	DM
696	3M	Rp,Fm,FF	2	HRA
723	Willson	Rp,Fm,ON	2	DFM
724	Willson	Rp,Fm,FF	2	DFM
725	Willson	Rp,Fm,ON	2	DFM
726	Willson	Rp,Bm,ON	2	DFM
727	Willson	Rp,Bm,FF	2	DFM
728	Willson	Rp,Bm,ON	2	DFM
735	Willson	Rp,Fm,ON	2	

739	Willson	Rp,Fm,ON	1	
744	Willson	Rp,Fm,FF	2	
750	Willson	Rp,Fm,FF	2	DM
752	Willson	Rp,Fm,ON	2	DM
758	Willson	Rp,Fm,ON	1	DM
761	Willson	Rp,Fm,ON	2	HA
762	Willson	Rp,Fm,FF	2	HA
772	Scott	Rp,Fm,ON	2	
773	Scott	Rp,Fm,ON	2	DM
774	Scott	Rp,Fm,ON	2	DFMR
775	Scott	Rp,Fm,ON	2	HRA
785	Willson	Rp,Fm,ON	2	DFMR
786	Willson	Rp,Fm,FF	2	DFMR
795	Cabot Safety	Rp,Fm,FF	2	HRA
800	Cabot Safety	Rp,Fm,FF	2	
810	Cabot Safety	Rp,Fm,FF	2	DM
823	Glendale	Rp,Fm,ON	2	
824	Glendale	Rp,Fm,ON	2	HRA

827	Willson	Rp,Fm,ON	1	DFM
834	MSA	Rp,Fm,FF	2	DM
840	MSA	Rp,Fm,FF	2	HA
845	MSA	Rp,Fm,FF	2	DM
856	MSA	Rp,Fm,FF	2	HA
858	Cabot Safety	Es,MP	1	
861	3M	Su,ON	2	
862	3M	Su,ON	2	DM
879	3M	Rp,Fm,FF	2	
885	3M	Rp,Fm,FF	2	DM
889	3M	Rp,Fm,FF	2	HRA
895	Racal	PAPR,HH	3	
898	Racal	PAPR,HH	3	HRA
908	Cabot Safety	Rp,Fm,ON	2	DFMR
909	Cabot Safety	Rp,Fm,FF	2	DFMR
910	Cabot Safety	Rp,Fm,FF	2	DFMR
935	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA

936	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA
937	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA
938	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA
939	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA
940	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA
948	MSA	Rp,Fm,FF	2	DM
954	MSA	Rp,Fm,FF	2	HA
959	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA
962	Masprot	Rp,Fm,ON	2	
964	Critical Products Group	Rp,Fm,ON	2	HA
975	National Draeger	Rp,Fm,FF	1	HA
976	National Draeger	Rp,Fm,FF	1	
987	Cabot Safety	Rp,Fm,FF	2	
988	Cabot Safety	Rp,Fm,FF	2	DM

989	Cabot Safety	Rp,Fm,FF	2	DFMR
1002	Cabot Safety	Rp,Fm,FF	2	HRA
1011	3M	Su,ON	2	HRA
1016	Survivair	Rp,Fm,ON	2	DM
1017	Survivair	Rp,Fm,FF	2	DM
1018	Survivair	Rp,Fm,ON	2	HRA
1019	Survivair	Rp,Fm,FF	2	HRA
1040	Willson	Su,ON	2	
1041	Willson	Su,ON	2	DM
1049	Willson	Su,ON	2	HA
1055	MSA	PAPR,FF	2	
1058	MSA	PAPR,FF	2	HA
1059	MSA	PAPR,FF NOT APPROVED FOR RADIONUCLIDES	2	HA
1066	3M	Rp,Fm,ON	2	
1070	3M	Rp,Fm,ON	2	DM
1075	3M	Rp,Fm,ON	2	HRA
1079	MSA	Rp,Fm,FF	2	DM
1090	MSA	Rp,Fm,FF	2	HA

1094	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA
1098	North	Su,ON	2	
1102	North	Su,ON	2	DM
1108	North	Su,ON	2	HR
1112	North	Su,ON	2	DFM
1120	Racal	Rp,Fm,FF	1	
1121	Racal	Rp,Fm,FF	1	HRA
1133	Survivair	Su,ON	2	
1135	Glendale	Rp,Fm,ON	2	DM
1136	Glendale	Rp,Fm,ON	2	DM
1138	Glendale	Rp,Fm,ON	2	DM
1139	Willson	Rp,Fm,ON	2	
1143	Willson	Rp,Fm,ON	2	
1146	Willson	Rp,Fm,ON	2	DM
1151	Willson	Rp,Fm,ON	2	DFM
1155	Willson	Rp,Fm,ON	2	HA
1160	MSA	Rp,Fm,FF	2	DM
1166	MSA	Rp,Fm,FF	2	HA

1173	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA
1187	Racal	PAPR,HH	3	
1188	Racal	PAPR,HH	3	HRA
1192	MSA	Rp,Fm,FF	2	DM
1198	MSA	Rp,Fm,FF	2	HA
1205	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA
1220	National Draeger	Rp,Fm,FF	1	DM
1239	Cabot Safety	Rp,Fm,ON	2	
1240	Cabot Safety	Rp,Fm,ON	2	DM
1241	Cabot Safety	Rp,Fm,ON	2	DFMR
1242	Cabot Safety	Rp,Fm,ON	2	HRA
1251	MSA	PAPR,ON	2	
1254	MSA	PAPR,ON	2	HA
1255	MSA	PAPR,ON NOT APPROVED FOR RADIONUCLIDES	2	HA
1273	Survivair	Su,ON	2	DM
1279	MSA	Rp,Fm,ON	2	

1284	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	A
1284	Critical Services	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HA
1285	MSA	Rp,Fm,ON	2	A
1306	National Draeger	Rp,Fm,ON	1	
1307	National Draeger	Rp,Fm,ON	1	HA
1324	3M	Su,ON	2	DM
1325	3M	Rp,Fm,ON	2	DM
1334	3M	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HR
1335	3M	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HR
1369	Moldex-Metric	Rp,Fm,ON	2	
1372	MSA	Rp,Fm,FF	2	
1376	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HRA
1377	MSA	Rp,Fm,FF	2	HRA
1394	Cabot Safety	Rp,Fm,FF	2	
1395	Cabot Safety	Rp,Fm,FF	2	DM
1396	Cabot Safety	Rp,Fm,FF	2	DFMR
1397	Cabot Safety	Rp,Fm,FF	2	HRA

3. Chlorine

Approval

Approved as respiratory protection against chlorine.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
55	Scott Replaced by TC-23C-492	Es,MP	1		
108	MSA	Es,MP	1	DM	HCl
195	3M	Su,ON	1	DM	
196	3M	Su,ON	1	DM	OV
479	Racal	PAPR,HH	3		HCl
480	Racal	PAPR,HH	3		HCl
481	Racal	PAPR,HH	3		HCl
492	Scott	Es,MP	1		HCl/H ₂ S
525	Scott REPLACED BY TC-23C-784	Rp,Fm,ON	2	HRA	
526	Scott	Rp,Fm,FF	2		
534	Racal	PAPR,FF	3		HCl
604	Cabot Safety	Es,MP	1		ClO ₂ /H ₂ S
610	Racal	PAPR,ON	3		HCl
629	MSA	Rp,Bm,ON	2		HG
631	Racal	PAPR,HH	3		HCl
680	Survivair	Rp,Fm,ON	2	HRA	

681	Survivair	Rp,Fm,FF	2	HRA	
784	Scott	Rp,Fm,ON	2	HRA	
916	Glendale	Rp,Bm,ON	2		HG
1031	Cabot Safety	Rp,Bm,ON	2		HG
1032	Cabot Safety	Rp,Bm,FF	2		HG
1046	MSA	Rp,Bm,ON	2	HA	HG
1348	MSA	Rp,Bm,FF	2	HA	HG
1349	MSA	Rp,Bm,ON	2	HA	HG
1354	MSA	Rp,Bm,FF	2		HG
1355	MSA	Rp,Bm,FF	2	HA	HG
1356	Willson	Rp,Bm,ON	2		HG
1357	Willson	Rp,Bm,FF	2		HG

4. Hydrogen Chloride

Approval

Approved as respiratory protection against not more than 50 parts per million hydrogen chloride.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Model Number(s)	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
108	MSA		Es,MP	1	DM	Cl
479	Racal		PAPR,HH	3		Cl
480	Racal		PAPR,HH	3		Cl
481	Racal		PAPR,HH	3		Cl
492	Scott		Es,MP	1		Cl/H2S
534	Racal		PAPR,FF	3		Cl
610	Racal		PAPR,ON	3		Cl
631	Racal		PAPR,HH	3		Cl

5. Chlorine, Sulfur Dioxide, and Hydrogen Chloride

Approval

Approved as respiratory protection against chlorine, hydrogen chloride, or sulfur dioxide.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - CHLORINE, SULFUR DIOXIDE, AND HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
41	MSA	Rp,Fm,Bm,ON	2	DM	H2S/CLO2
47	MSA	Rp,Fm,Bm,ON	2	DM	OV/H2S CLO2
60	Cabot Safety	Rp,Fm,ON	2		
65	North	Rp,Fm,ON	2		OV
66	North	Rp,Fm,ON	2	DM	OV
76	Willson	Rp,Fm,ON	2		OV/CLO2/ H2S/HF
77	Willson	Rp,Fm,ON	2	DM	OV/CLO2/ H2S/HF
82	Cabot Safety	Rp,Fm,ON	2		OV
85	Cabot Safety	Rp,Fm,ON	1		OV
104	North	Rp,Bm,ON	2		OV
105	North	Rp,Bm,ON	2	DM	OV
111	Cabot Safety	Es,Mp	1	DM	
115	Scott	Rp,Fm,ON	2		CH2-O/H2S CLO2
REPLACED BY TC-23C-768					
116	Scott	Rp,Fm,ON	2	DM	CH2-O/H2S CLO2
122	North	Rp,Fm,ON	2	DMZ	

129	3M	Su,ON	1	DM	
141	Willson	Rp,Fm,ON	2		OV/CLO2/ H2S/HF
142	Willson	Rp,Fm,ON	2	DM	OV/CLO2/ H2S/HF
145	MSA	Rp,Fm,FF	2	DM	H2S/CLO2
146	MSA	Rp,Fm,FF	2	DM	OV H2S/CLO2
150	MSA	Rp,Fm,FF	2	HA	H2S/CLO2
153	MSA	Rp,Fm,FF	2	HA	OV/Pest CLO2/H2S
154	MSA	Rp,Fm,FF	2	DFMR	OV/Pest CLO2/H2S
156	MSA	Rp,Fm,Bm,ON	2	HA	H2S/CLO2
159	MSA	Rp,Fm,Bm,ON	2	HA	OV/Pest CLO2/H2S
160	MSA	Rp,Fm,Bm,ON	2	DFMR	OV/Pest CLO2/H2S
163	Protech	Rp,Fm,ON	2	DM	OV
163	Sellstrom	Rp,Fm,ON	2	DM	OV
163	Eastern	Rp,Fm,ON	2	DM	OV
164	Cesco	Rp,Fm,ON	2		
165	Cesco	Rp,Fm,ON	2	DM	
166	Cesco	Rp,Fm,ON	2		OV

167	Cesco	Rp,Fm,ON	2	DM	OV
168	US Safety	Rp,Fm,ON	2		
169	US Safety	Rp,Fm,ON	2	DM	
169	Lab Safety Supply	Rp,Fm,ON	2	DM	
170	US Safety	Fm,ON	2		OV
171	US Safety	Rp,Fm,ON	2	DM	OV
171	Lab Safety Supply	Rp,Fm,ON	2	DM	OV
172	Scott	Rp,Fm,ON	2		OVCH2-O H2S/ CLO2
REPLACED BY TC-23C-776					
174	Scott	Rp,Fm,ON	2	DM	OV CH2-O/H2S CLO2
179	North	Rp,Bm,ON	2	DMZ	
181	North	Rp,Fm,FF	2		OV
183	Glendale	Rp,Fm,ON	2		CH2-O/ CLO2
184	Glendale	Rp,Fm,ON	2	DM	CH2-O
186	North	Rp,Fm,FF	2	DM	OV
189	North	Rp,Fm,FF	2	DMZ	
203	Pulmosan	Rp,Fm,ON	1		
207	North	Rp,Fm,ON	2	HRA	CH2-O

208	North	Rp,Bm,ON	2	HRA	CH2-O
209	North	Rp,Fm,FF	2	HRA	CH2-O
210	North	Rp,Fm,ON	2	HRA	OV
211	North	Rp,Bm,ON	2	HRA	OV
212	North	Rp,Fm,FF	2	HRA	OV
216	3M	Su,ON	1	DM	OV
218	Scott	Rp,Fm,FF	2	DM	CH2-O/H2S CLO2
221	Scott	Rp,Fm,FF	2		OV/CH2-O H2S/CLO2
222	Scott	Rp,Fm,FF	2	DM	OV/CH2-O H2S/CLO2
225	Scott	Rp,Fm,FF	2		CH2-O/H2S CLO2
226	North	Rp,Fm,ON	2		CH2-O
227	North	Rp,Bm,ON	2		CH2-O
228	North	Rp,Fm,FF	2		CH2-O
229	North	Rp,Fm,ON	2	DM	CH2-O
230	North	Rp,Bm,ON	2	DM	CH2-O
231	North	Rp,Fm,FF	2	DM	CH2-O
232	Pulmosan	Rp,Fm,ON	1	DM	
233	Cabot Safety	Rp,Fm,FF	2		

234	Cabot Safety	Rp,Fm,FF	2		OV
241	Glendale	Rp,Fm,ON	2		OV CH2-O
242	Glendale	Rp,Fm,ON	2	DM	OV CH2-O
246	Scott	Rp,Fm,ON	2	DFMR	CH2-O/H2S CLO2
247	Scott	Rp,Fm,FF	2	DFMR	CH2-O/H2S CLO2
250	Scott	Rp,Fm,ON	2	DFMR	OV CH2-O/H2S CLO2
251	Scott	Rp,Fm,FF	2	DFMR	OV H2S/CLO2 CH2-O
260	MSA	Rp,Fm,ON	2	DM	OV/CH2-O H2S/CLO2
261	MSA	Rp,Bm,ON	2	DM	OV CLO2/H2S
262	MSA	Rp,Fm,FF	2	DM	OV CLO2/H2S
265	Cesco	Rp,Fm,FF	2	DM	
266	US Safety	Rp,Fm,FF	2	DM	
266	Lab Safety Supply	Rp,Fm,FF	2	DM	
267	Cesco	Rp,Fm,FF	2	DM	OV
268	US Safety	Rp,Fm,FF	2	DM	OV

268	Lab Safety Supply	Rp,Fm,FF	2	DM	OV
281	Cabot Safety	Rp,Fm,ON	2	DFM	OV/CLO2 Pest
282	Cabot Safety	Rp,Fm,FF	2	DFM	OV/CLO2 Pest
288	North	Es,Mp	1		H2S/CLO2
298	Willson	Rp,Fm,ON	2		OV/H2S
299	Willson	Rp,Fm,ON	2	HA	OV/H2S
300	Willson	Rp,Fm,FF	2		OV/H2S
301	Willson	Rp,Fm,FF	2	HA	OV/H2S
306	Cesco	Rp,Fm,ON	2	HRA	
307	US Safety	Rp,Fm,ON	2	HRA	
307	Lab Safety Supply	Rp,Fm,ON	2	HRA	
308	Cesco	Rp,Fm,FF	2	HRA	
309	US Safety	Rp,Fm,FF	2	HRA	
309	Lab Safety Supply	Rp,Fm,FF	2	HRA	
310	Cesco	Rp,Fm,ON	2	HRA	OV
311	US Safety	Rp,Fm,ON	2	HRA	OV
311	Lab Safety Supply	Rp,Fm,ON	2	HRA	OV

312	Cesco	Rp,Fm,FF	2	HRA	OV
313	US Safety	Rp,Fm,FF	2	HRA	OV
313	Lab Safety Supply	Rp,Fm,FF	2	HRA	OV
318	Survivair	Rp,Fm,ON	2		OV
320	Pulmosan	Rp,Fm,ON	1		OV
324	Pulmosan	Rp,Fm,ON	1	DM	OV
339	Cabot Safety	Rp,Fm,ON	2		H2S/CLO2
340	Cabot Safety	Rp,Fm,FF	2		H2S/CLO2
341	Cabot Safety	Rp,Fm,ON	2	DM	H2S/CLO2
342	Cabot Safety	Rp,Fm,FF	2	DM	H2S/CLO2
343	Cabot Safety	Rp,Fm,ON	2		OV CLO2
344	Cabot Safety	Rp,Bm,FF	2		OV CLO2
345	Cabot Safety	Rp,Fm,ON	2	DM	OV CLO2
346	Cabot Safety	Rp,Fm,FF	2	DM	OV CLO2
352	North	Su,ON	1		OV CH2-O
353	North	Su,ON	1		CH2-O

356	North	Su,ON	1	DM	CH2-O
357	North	Su,ON	1	DM	OV CH2-O
359	Protech	Rp,Fm,ON	2		CH2-O
359	Sellstrom	Rp,Fm,ON	2		CH2-O
368	Willson	Rp,Bm,ON	2		OV
369	Willson	Rp,Bm,FF	2		OV
370	Willson	Rp,Bm,ON	2		OV
371	Willson	Rp,Bm,FF	2		OV
380	Willson	Rp,Bm,ON	2	DM	OV
381	Willson	Rp,Bm,FF	2	DM	OV
386	Willson	Rp,Bm,ON	2	HA	OV
387	Willson	Rp,Bm,FF	2	HA	OV
393	Survivair	Rp,Fm,ON	2	DFMR	OV
394	Survivair	Rp,Fm,FF	2	DFMR	OV
395	Survivair	Rp,Fm,ON	2	HA	
396	Survivair	Rp,Fm,FF	2	HA	
407	Glendale	Rp,Fm,FF	2		CH2-O/ CLO2
408	Glendale	Rp,Fm,FF	2	DM	CH2-O

410	Glendale	Rp,Fm,FF	2		OV CH2-O
411	Glendale	Rp,Fm,FF	2	DM	OV CH2-O
415	Cabot Safety	Rp,Fm,ON	2	HRA	CLO2/H2S
416	Cabot Safety	Rp,Fm,FF	2	HRA	CLO2/H2S
417	Cabot Safety	Rp,Fm,ON	2	HRA	OV CLO2/Pest
418	Cabot Safety	Rp,Fm,FF	2	HRA	OV CLO2/Pest
421	Protech	Rp,Fm,ON	2	HRA	OV
421	Sellstrom	Rp,Fm,ON	2	HRA	OV
429	Survivair	Rp,Fm,FF	2		CH2-O
430	Survivair	Rp,Fm,ON	2		CH2-O
431	Survivair	Rp,Fm,ON	2	DM	CH2-O
432	Survivair	Rp,Fm,FF	2	DM	CH2-O
433	Survivair	Rp,Fm,ON	2	DM	OV
434	Survivair	Rp,Fm,ON	2	DM	OV
443	3M	Rp,Fm,ON	2		H2S/CLO2
444	3M	Rp,Fm,ON	2	DM	H2S/CLO2
445	3M	Rp,Fm,ON	2	HRA	H2S/CLO2

446	3M	Rp,Fm,ON	2		OV/HF
447	3M	Rp,Fm,ON	2	DM	OV/HF
448	3M	Rp,Fm,ON	2	HRA	OV/HF
449	North	Es,Mp	1	DM	H2S/CLO2
450	Survivair	Rp,Fm,ON	2	HRA	OV/Pest
451	Survivair	Rp,Fm,FF	2	HRA	OV
454	Survivair	Rp,Fm,FF	2		OV
459	Protech	Rp,Fm,ON	2	HRA	CH2-O
459	Sellstrom	Rp,Fm,ON	2	HRA	CH2-O
461	MSA	Rp,Bm,ON	2	DM	H2S/CLO2
462	MSA	Rp,Bm,ON	2	DM	OV CLO2/H2S
466	MSA	Rp,Bm,ON	2	HA	OV/Pest/ CLO2/H2S
467	MSA	Rp,Bm,ON	2	DFMR	OV/Pest/ CLO2/H2S
470	MSA	Rp,Bm,ON	2	HA	H2S/CLO2
472	MSA	Rp,Bm,ON	2	DM	OV/H2S CLO2
487	Sellstrom	Rp,Fm,ON	2	HRA	
496	Pulmosan	Rp,Fm,FF	1		
497	Pulmosan	Rp,Fm,FF	1		OV

500	Pulmosan	Rp,Fm,FF	1	DM	
501	Pulmosan	Rp,Fm,FF	1	DM	OV
511	MSA	Rp,Fm,ON	1	DM	CH2-O
512	MSA	Rp,Fm,ON	1	DM	OV CH2-O
514	MSA	Es,Mp	1	DM	H2S/CLO2
516	Pirelli	Rp,Fm,ON	2		
517	Scott	Rp,Fm,ON	2	HRA	CH2-O/H2S CLO2
REPLACED BY TC-23C-771					
518	Scott	Rp,Fm,FF	2	HRA	CH2-O/H2S CLO2
521	Scott	Rp,Fm,ON	2	HRA	OV CH2-O/H2S CLO2
REPLACED BY TC-23C-779					
522	Scott	Rp,Fm,FF	2	HRA	OV/CH2-O H2S/CLO2
527	Pirelli	Rp,Fm,FF	2		
532	Survivair	Rp,Fm,ON	2	DFMR	OV
533	Survivair	Rp,Fm,FF	2	DFMR	OV
536	Safety Supply	Rp,Fm,ON	2		
537	Safety Supply	Rp,Fm,FF	2		
542	Safety Supply	Rp,Fm,ON	2		OV

543	Safety Supply	Rp,Fm,FF	2		OV
550	Safety Supply	Rp,Fm,ON	2	DM	
551	Safety Supply	Rp,Fm,FF	2	DM	
552	Safety Supply	Rp,Fm,ON	2	DM	OV
553	Safety Supply	Rp,Fm,FF	2	DM	OV
563	Willson	Rp,Fm,ON	2		OV/CLO2/ H2S/HF
564	Willson	Rp,Fm,ON	2		OV
565	Willson	Rp,Fm,ON	2		OV/H2S/HF
566	Willson	Rp,Fm,ON	2		OV
577	Willson	Rp,Fm,ON	2	DM	OV/CLO2 H2S/HF
578	Willson	Rp,Fm,ON	2	DM	OV
583	Willson	Rp,Fm,ON	2	HA	OV/H2S/HF
584	Willson	Rp,Fm,ON	2	HA	OV
587	Cabot Safety	Rp,Fm,ON	2	DFM	OV CLO2/Pest
588	Cabot Safety	Rp,Fm,FF	2	DFM	OV CLO2/Pest
593	Racal	PAPR,HH	3		CH2-O

594	Racal	PAPR,FF	3		CH2-O
595	Racal	PAPR,HH	3		CH2-O
596	Racal	PAPR,HH	3		CH2-O
597	Racal	PAPR,HH	3	HRA	CH2-O
598	Racal	PAPR,FF	3	HRA	CH2-O
599	Racal	PAPR,HH	3	HRA	CH2-O
600	Racal	PAPR,HH	1	HRA	CH2-O
601	Cabot Safety	Es,Mp	1		
603	Racal	PAPR,HH	3	HRA	CH2-O
605	Racal	PAPR,HH	3		OV
606	Racal	PAPR,FF	3		OV
607	Racal	PAPR,HH	3		OV
608	Racal	PAPR,HH	3		OV
613	Racal	PAPR,ON	3		CH2-O
614	Racal	PAPR,ON	3	HRA	CH2-O
615	Racal	PAPR,ON	3		OV
619	Glendale	Rp,Fm,ON	2	HRA	CH2-O/ CLO2
620	Glendale	Rp,Fm,FF	2	HRA	CH2-O/ CLO2

621	Glendale	Rp,Fm,ON	2	HRA	OV CH2-O
622	Glendale	Rp,Fm,FF	2	HRA	OV CH2-O
626	Neoterik	PAPR,ON	3		OV
627	Neoterik	PAPR,ON	3		
634	Racal	PAPR,HH	3		CH2-O
635	Racal	PAPR,HH	3	HRA	CH2-O
636	Racal	PAPR,HH	3		OV
638	Neoterik	PAPR,FF	3		OV
640	Neoterik	PAPR,FF	3		
647	Racal	PAPR,FF	3	HRA	OV
648	Racal	PAPR,ON	3	HRA	OV
652	North	Rp,Fm,ON	2	DFM	CH2-O
653	North	Rp,Bm,ON	2	DFM	CH2-O
654	North	Rp,Fm,FF	2	DFM	
655	North	Rp,Fm,ON	2	DFM	OV
656	North	Rp,Bm,ON	2	DFM	OV
657	North	Rp,Fm,FF	2	DFM	OV
664	Protech	Rp,Fm,FF	2		OV
664	Sellstrom	Rp,Fm,FF	2		OV

665	Protech	Rp,Fm,FF	2	DM	OV
665	Eastern	Rp,Fm,FF	2	DM	OV
670	Protech	Rp,Fm,FF	2	HRA	OV
670	Sellstrom	Rp,Fm,FF	2	HRA	OV
670	Eastern	Rp,Fm,FF	2	HRA	OV
671	Protech	Rp,Fm,FF	2		CH2-O
671	Sellstrom	Rp,Fm,FF	2		CH2-O
673	Protech	Rp,Fm,FF	2	HRA	CH2-O
678	Eastern	Rp,Fm,ON	2	HRA	OV
673	Protech	Rp,Fm,FF	2	HRA	CH2-O
679	Cabot Safety	Rp,Fm,FF	2		OV CLO2
684	3M	Rp,Fm,FF	2		H2S/CLO2
685	3M	Rp,Fm,FF	2		OV/HF
689	3M	Rp,Fm,FF	2	DM	H2S/CLO2
690	3M	Rp,Fm,FF	2	DM	OV/HF
694	3M	Rp,Fm,FF	2	HRA	H2S/CLO2
695	3M	Rp,Fm,FF	2	HRA	OV/HF
699	Willson	Rp,Fm,ON	2		H2S/HF CH2-O

700	Willson	Rp,Fm,FF	2		H2S/HF CH2-O
701	Willson	Rp,Fm,ON	2		H2S/HF CH2-O
702	Willson	Rp,Bm,ON	2		CH2-O
703	Willson	Rp,Bm,FF	2		CH2-O
704	Willson	Rp,Bm,ON	2		CH2-O
705	Willson	Rp,Fm,ON	2	DM	H2S/HF CH2-O
706	Willson	Rp,Fm,ON	2	DM	H2S/HF CH2-O
707	Willson	Rp,Fm,FF	2	DM	H2S/HF CH2-O
708	Willson	Rp,Bm,ON	2	DM	CH2-O
709	Willson	Rp,Bm,FF	2	DM	CH2-O
710	Willson	Rp,Bm,ON	2	DM	CH2-O
711	Willson	Rp,Fm,ON	2	DFMR	H2S/HF CH2-O
712	Willson	Rp,Fm,FF	2	DFMR	H2S/HF CH2-O
713	Willson	Rp,Fm,FF	2	DFMR	H2S/HF CH2-O
714	Willson	Rp,Bm,ON	2	DFM	CH2-O
715	Willson	Rp,Bm,FF	2	DFM	CH2-O
716	Willson	Rp,Bm,ON	2	DFM	CH2-O

717	Willson	Rp,Fm,ON	2	DFMR	OV/CLO2/ H2S/HF
718	Willson	Rp,Fm,FF	2	DFMR	OV/CLO2/ H2S/HF
719	Willson	Rp,Fm,ON	2	DFMR	OV/CLO2/ H2S/HF
720	Willson	Rp,Bm,ON	2	DFM	OV
721	Willson	Rp,Fm,FF	2	DFM	OV
722	Willson	Rp,Bm,ON	2	DFM	OV
736	Willson	Rp,Fm,ON	2		OV
740	Willson	Rp,Fm,ON	1		OV
741	Willson	Rp,Fm,ON	2		CH2-O
742	Willson	Rp,Fm,ON	1		CH2-O
745	Willson	Rp,Fm,FF	2		OV
746	Willson	Rp,Fm,FF	2		CH2-O
748	Willson	Rp,Fm,FF	2	DM	OV
749	Willson	Rp,Fm,FF	2	DM	CH2-O
753	Willson	Rp,Fm,ON	2	DM	OV
754	Willson	Rp,Fm,ON	2	DM	CH2-O
756	Willson	Rp,Fm,ON	1	DM	OV
757	Willson	Rp,Fm,ON	1	DM	CH2-O

763	Willson	Rp,Fm,ON	2	HA	OV
764	Willson	Rp,Fm,FF	2	HA	OV
765	Willson	Rp,Fm,ON	2	HA	CH2-O
766	Willson	Rp,Fm,FF	2	HA	CH2-O
768	Scott	Rp,Fm,ON	2		CH2-O/H2S CLO2
769	Scott	Rp,Fm,ON	2	DM	CH2-O/H2S CLO2
770	Scott	Rp,Fm,ON	2	DFMR	CH2-O/H2S CLO2
771	Scott	Rp,Fm,ON	2	HRA	CH2-O/H2S CLO2
776	Scott	Rp,Fm,ON	2		OV H2S/CLO2
777	Scott	Rp,Fm,ON	2	DM	OV CH2-O/H2S CLO2
778	Scott	Rp,Fm,ON	2	DFMR	OV H2S/CLO2
779	Scott	Rp,Fm,ON	2	HRA	OV H2S/CLO2
787	Willson	Rp,Fm,ON	2	DFMR	OV
788	Willson	Rp,Fm,FF	2	DFMR	OV
789	Willson	Rp,Fm,ON	2	DFMR	CH2-O
790	Willson	Rp,Fm,FF	2	DFMR	CH2-O

794	Cabot Safety	Rp,Fm,FF	2	HRA Pest	CLO2/OV
798	Cabot Safety	Rp,Fm,FF	2		H2S/CLO2
799	Cabot Safety	Rp,Fm,FF	2		OV CLO2
803	Cabot Safety	Rp,Fm,FF	2	HRA	
805	Cabot Safety	Rp,Fm,FF	2		OV CLO2
808	Cabot Safety	Rp,Fm,FF	2	DM	H2S/CLO2
809	Cabot Safety	Rp,Fm,FF	2	DM	OV CLO2
812	Cabot Safety	Rp,Fm,FF	2	DFM	OV CLO2
817	Glendale	Rp,Fm,ON	2		CH2-O/ CLO2
818	Glendale	Rp,Fm,ON	2	DM	CH2-O
819	Glendale	Rp,Fm,ON	2	HRA	CH2-O/ CLO2
820	Glendale	Rp,Fm,ON	2		OV CH2-O
821	Glendale	Rp,Fm,ON	2	DM	OV CH2-O
822	Glendale	Rp,Fm,ON	2	HRA	OV CH2-O
828	Willson	Rp,Fm,ON	1	DFM	OV

829	Willson	Rp,Fm,ON	1	DFM	CH2-O
832	MSA	Rp,Fm,FF	2	DM	H2S/CLO2
833	MSA	Rp,Fm,FF	2	DM	OV CLO2/H2S
836	MSA	Rp,Fm,FF	2	HA	H2S/CLO2
837	MSA	Rp,Fm,FF	2	DM	OV CLO2/H2S
839	MSA	Rp,Fm,FF	2	HA	OV/Pest/ H2S/CLO2
843	MSA	Rp,Fm,FF	2	DM	H2S/CLO2
844	MSA	Rp,Fm,FF	2	DM	OV/H2S CLO2
851	MSA	Rp,Fm,FF	2	HA	H2S/CLO2
852	MSA	Rp,Fm,FF	2	DM	OV/H2S CLO2
853	MSA	Rp,Fm,FF	2	DFMR	OV/H2S/ CLO2/Pest
854	MSA	Rp,Fm,FF	2	HRA	OV/H2S/ CLO2/Pest
865	3M	Su,ON	2		OV/HF
866	3M	Su,ON	2		H2S/CLO2
868	3M	Su,ON	2	DM	OV/HF
869	3M	Su,ON	2	DM	H2S/CLO2
872	Masprot	Rp,Fm,ON	2	DM	

874	Masprot	Rp,Fm,ON	2	HA	
877	3M	Rp,Fm,FF	2		H2S/CLO2
878	3M	Rp,Fm,FF	2		OV/HF
882	3M	Rp,Fm,FF	2	DM	H2S/CLO2
883	3M	Rp,Fm,FF	2	DM	OV/HF
887	3M	Rp,Fm,FF	2	HRA	H2S/CLO2
888	3M	Rp,Fm,FF	2	HRA	OV/HF
894	Racal	PAPR,HH	3		CH2-O
896	Racal	PAPR,HH	3	HRA	CH2-O
897	Racal	PAPR,HH	3		OV
902	Cabot Safety	Rp,Fm,ON	2	DFMR	CLO2
903	Cabot Safety	Rp,Fm,FF	2	DFMR	CLO2
904	Cabot Safety	Rp,Fm,FF	2	DFMR	CLO2
905	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/CLO2 Pest
906	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/CLO2 Pest
907	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/CLO2 Pest
914	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/CLO2 Pest

915	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/CLO2 Pest
917	MSA	Rp,Fm,ON	2	DM	OV/CH2-O
918	MSA	Rp,Bm,ON	2	DM	OV/CH2-O
919	MSA	Rp,Fm,FF	2	DM	OV/CH2-O
920	MSA	Rp,Bm,ON	2	DM	OV/CH2-O
921	MSA	Rp,Fm,FF	2	DM	OV/CH2-O
922	MSA	Rp,Fm,FF	2	DM	OV/CH2-O
923	MSA	Rp,Fm,ON	2	HA	OV/CH2-O
924	MSA	Rp,Bm,ON	2	HA	OV/CH2-O
925	MSA	Rp,Bm,ON	2	HA	OV/CH2-O
926	MSA	Rp,Fm,FF	2	HA	OV/CH2-O
927	MSA	Rp,Fm,FF	2	HA	OV/CH2-O
928	MSA	Rp,Fm,FF	2	HA	OV/CH2-O
929	MSA	Rp,Fm,ON	2	HA	OV/H2S/ CLO2/Pest NOT APPROVED FOR RADIONUCLIDES
930	MSA	Rp,Bm,ON	2	HA	OV/H2S/ CLO2/Pest NOT APPROVED FOR RADIONUCLIDES
931	MSA	Rp,Fm,FF	2	HA	OV/H2S/ CLO2/Pest NOT APPROVED FOR RADIONUCLIDES

932	MSA	Rp,Bm,ON	2	HA	OV/H2S/ CLO2/Pest NOT APPROVED FOR RADIONUCLIDES
933	MSA	Rp,Fm,FF	2	HA	OV/H2S/ CLO2/Pest NOT APPROVED FOR RADIONUCLIDES
934	MSA	Rp,Fm,FF	2	HA	OV/H2S/ CLO2/Pest NOT APPROVED FOR RADIONUCLIDES
942	National Draeger	Rp,Fm,FF	1	HA	
946	MSA	Rp,Fm,FF	2	DM	H2S/CLO2
947	MSA	Rp,Fm,FF	2	DM	OV/H2S CLO2
951	MSA	Rp,Fm,FF	2	HA	H2S/CLO2
952	MSA	Rp,Fm,FF	2	HA	H2S/CLO2/ OV/Pest
953	MSA	Rp,Fm,FF	2	DFMR	H2S/CLO2/ OV/Pest
957	MSA	Rp,Fm,FF	2	DM	H2S/CLO2
958	MSA	Rp,Fm,FF	2	DM	OV/CH2-O
960	MSA	Rp,Fm,FF	2	HA	OV/CH2-O
961	MSA	Rp,Fm,FF	2	HA	H2S/CLO2/ OV/Pest NOT APPROVED FOR RADIONUCLIDES
965	Critical Products Group	Rp,Fm,ON	2	HA	OV

966	Critical Products Group	Rp,Fm,ON	2	HA	CH2-O
967	Masprot	Rp,Fm,ON	2		OV
968	Masprot	Rp,Fm,ON	2	HA	OV
973	National Draeger	Rp,Fm,FF	1		
981	Cabot Safety	Rp,Fm,FF	2		CLO2/H2S
982	Cabot Safety	Rp,Fm,FF	2	DM	CLO2/H2S
983	Cabot Safety	Rp,Fm,FF	2	DFM	CLO2/H2S
984	Cabot Safety	Rp,Fm,FF	2		CLO2/OV
985	Cabot Safety	Rp,Fm,FF	2	DM	CLO2/OV
986	Cabot Safety	Rp,Fm,FF	2	DFMR	CLO2/OV Pest
995	Cabot Safety	Rp,Fm,FF	2		CLO2/OV
996	Cabot Safety	Rp,Fm,FF	2	DFMR	CLO2/OV Pest
998	Cabot Safety	Rp,Fm,FF	2	DFM	CLO2/OV Pest
1000	Cabot Safety	Rp,Fm,FF	2	HRA	CLO2/H2S
1001	Cabot Safety	Rp,Fm,FF	2	HRA	CLO2/H2S OV/Pest

1008	National Draeger	Rp,Fm,FF	1	OV	
1010	3M	Su,ON	2	HRA	OV/HF
1014	National Draeger	Rp,Fm,FF	1	HA	OV
1020	3M	Su,ON	2	HRA	H2S/CLO2
1021	National Draeger	Rp,Fm,FF	1		
1022	National Draeger	Rp,Fm,FF	1	HA	
1023	Racal	PAPR,HH	3	HRA	OV
1024	Racal	PAPR,HH	3	HRA	OV
1025	Racal	PAPR,HH	3	HRA	OV
1026	Racal	PAPR,HH	3	HRA	OV
1027	Racal	PAPR,HH	3	HRA	OV
1037	Racal	PAPR,FF	1		OV
1042	Willson	Su,ON	2		OV/CLO2
1043	Willson	Su,ON	2	DM	OV/CLO2
1044	Willson	Su,ON	2		CH2-O
1045	Willson	Su,ON	2	DM	
1050	Willson	Su,ON	2	HA	OV/CLO2
1051	Willson	Su,ON	2	HA	CH2-O

1053	Survivair	PAPR,FF	3	HRA	OV
1054	MSA	PAPR,FF	2		CLO2/OV
1056	MSA	PAPR,FF	2	HA	CLO2/OV/ Pest
1057	MSA	PAPR,FF	2	HA	CLO2/OV/ Pest NOT APPROVED FOR RADIONUCLIDES
1060	Hornell Speedglas	PAPR,HH	3	HRA	CH2-O
1061	Scott	Es,Mp	1		H2S/CLO2
1063	3M	Rp,Fm,ON	2		H2S/CLO2
1064	3M	Rp,Fm,ON	2		OV/HF
1068	3M	Rp,Fm,ON	2	DM	CLO2/H2S
1069	3M	Rp,Fm,ON	2	DM	OV/HF
1073	3M	Rp,Fm,ON	2	HRA	H2S/CLO2
1074	3M	Rp,Fm,ON	2	HRA	OV/HF
1077	MSA	Rp,Fm,FF	2	DM	CLO2/H2S
1078	MSA	Rp,Fm,FF	2	DM	CLO2/H2S/ OV
1085	MSA	Rp,Fm,FF	2	HA	CLO2/H2S
1086	MSA	Rp,Fm,FF	2	DM	CLO2/H2S/ OV
1087	MSA	Rp,Fm,FF	2	DFMR	CLO2/H2S/ OV/Pest

1088	MSA	Rp,Fm,FF	2	HA	CLO2/H2S/ OV/Pest
1093	MSA	Rp,Fm,FF	2	HA	CLO2/H2S OV/Pest NOT APPROVED FOR RADIONUCLIDES
1096	North	Su,ON	2		CH2-O
1097	North	Su,ON	2		OV
1100	North	Su,ON	2	DM	CH2-O
1101	North	Su,ON	2	DM	OV
1106	North	Su,ON	2	HR	CH2-O
1107	North	Su,ON	2	HR	OV
1110	North	Su,ON	2	DFM	CH2-O
1111	North	Su,ON	2	DFM	OV
1124	Racal	Rp,Fm,FF	1		OV
1125	Racal	Rp,Fm,FF	1	HRA	OV
1126	Racal	Rp,Fm,FF			CH2-O
1127	Racal	Rp,Fm,FF		HRA	CH2-O
1131	Survivair	Su,ON	2		CH2-O
1132	Survivair	Su,ON	2		OV/CLO2
1140	Willson	Rp,Fm,ON	2		OV/CLO2 H2S/HF
1141	Willson	Rp,Fm,ON	2		CH2-O/H2S

1144	Willson	Rp,Fm,ON	2		OV/CLO2/ H2S
1147	Willson	Rp,Fm,ON	2	DM	OV/CLO2 H2S/HF
1148	Willson	Rp,Fm,ON	2	DM	CH2-O/H2S
1152	Willson	Rp,Fm,ON	2	DFM	OV/CLO2 H2S/HF
1153	Willson	Rp,Fm,ON	2	DFM	CH2-O/H2S
1156	Willson	Rp,Fm,ON	2	HA	OV/H2S
1158	MSA	Rp,Fm,FF	2	DM	CLO2/H2S
1159	MSA	Rp,Fm,FF	2	DM H2S	OV/CLO2/ H2S
1163	MSA	Rp,Fm,FF	2	HA	H2S/CLO2
1164	MSA	Rp,Fm,FF	2	HA	OV/CLO2/ H2S/Pest
1165	MSA	Rp,Fm,FF	2	DFMR	OV/CLO2/ H2S/Pest
1169	MSA	Rp,Fm,FF	2	DM	OV/CLO2/ H2S
1170	MSA	Rp,Fm,FF	2	DM	OV/CH2-O
1171	MSA	Rp,Fm,FF	2	HA	OV/CH2-O
1172	MSA	Rp,Fm,FF	2	HA	OV/CLO2/ H2S/Pest NOT APPROVED FOR RADIONUCLIDES
1177	MSA DE CHILI	Rp,Fm,ON	2		CLO2/H2S

1178	MSA DE CHILI	Rp,Fm,ON	2		OV/CLO2/ H2S
1179	MSA DE CHILI	Rp,Fm,ON	2	HA	CLO2/H2S
1180	MSA DE CHILI	Rp,Fm,ON	2	DFMR	OV/CLO2/ H2S
1182	Racal	PAPR,HH	3	HRA	OV
1183	Racal	PAPR,HH	3		OV
1190	MSA	Rp,Fm,FF	2	DM	CLO2/H2S
1191	MSA	Rp,Fm,FF	2	DM	OV/CLO2/ H2S
1195	MSA	Rp,Fm,FF	2	HA	CLO2/H2S
1196	MSA	Rp,Fm,FF	2	HA	OV/CLO2/ H2S/Pest
1197	MSA	Rp,Fm,FF	2	DFMR	OV/CLO2/ H2S/Pest
1201	MSA	Rp,Fm,FF	2	DM	OV/CLO2/ H2S
1202	MSA	Rp,Fm,FF	2	DM	OV/CH2-O
1203	MSA	Rp,Fm,FF	2	HA	OV/CH2-O
1204	MSA	Rp,Fm,FF	2	HA	OV/CLO2/ H2S/Pest NOT APPROVED FOR RADIONUCLIDES
1216	Racal	PAPR,FF	1	HRA	OV
1217	Scott	Es,Mp	1	DM	H2S/CLO2

1219	National Draeger	Rp,Fm,FF	1	DM	OV
1221	National Draeger	Rp,Fm,FF	1	DM	CH2-O
1224	Moldex	Rp,Fm,Su,ON	2		CLO2/HF/ H2S
1225	Moldex	Rp,Fm,Su,ON	2		CLO2/HF/ OV
1231	Cabot Safety	Rp,Fm,ON	2		H2S/CLO2
1232	Cabot Safety	Rp,Fm,ON	2	DM	H2S/CLO2
1233	Cabot Safety	Rp,Fm,ON	2	DFMR	H2S/CLO2
1234	Cabot Safety	Rp,Fm,ON	2	HRA	H2S/CLO2
1235	Cabot Safety	Rp,Fm,ON	2		OV/CLO2
1236	Cabot Safety	Rp,Fm,ON	2	DM	OV/CLO2
1237	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/CLO2/ Pest
1238	Cabot Safety	Rp,Fm,ON	2	HRA	OV/CLO2/ Pest
1248	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/CLO2/ Pest
1250	MSA	PAPR,ON	2		OV/CLO2

1252	MSA	PAPR,ON	2	HA	OV/CLO2/ Pest
1253	MSA	PAPR,ON	2	HA	OV/CLO2/ Pest NOT APPROVED FOR RADIONUCLIDES
1271	Survivair	Su,ON	2	DM	CH2-O
1272	Survivair	Su,ON	2	DM	CLO2/H2S/ OV
1275	Survivair	Su,ON	2	DFM	CLO2/H2S/ OV
1277	MSA	Rp,Fm,ON	2		H2S/CLO2
1278	MSA	Rp,Fm,ON	2		H2S/CLO2/ OV
1281	MSA	Rp,Fm,ON	2	HA	H2S/CLO2
1282	MSA	Rp,Fm,ON	2	HA	H2S/CLO2/ OV NOT APPROVED FOR RADIONUCLIDES
1282	Critical Services	Su,ON	2	HA	H2S/CLO2/ OV/Pest NOT APPROVED FOR RADIONUCLIDES
1283	MSA	Rp,Fm,ON	2	HA	H2S/CLO2/ OV/Pest
1287	Hornell Speedglas	PAPR,HH	3	HRA	CH2-O
1304	National Draeger	Rp,Fm,ON	1		CH2-O
1307	National Draeger	Rp,Fm,ON	1		OV

1310	National Draeger	Rp,Fm,ON	1	HA	OV
1311	National Draeger	Rp,Fm,ON	1	HA	
1312	MSA	PAPR,ON	2		CLO2/H2S
1313	MSA	PAPR,ON	2	HA	CLO2/H2S
1314	MSA	PAPR,ON	2	HA	CLO2/H2S NOT APPROVED FOR RADIONUCLIDES
1315	MSA	PAPR,FF	2		CLO2/H2S
1316	MSA	PAPR,FF	2	HA	CLO2/H2S
1317	MSA	PAPR,FF	2	HA	CLO2/H2S NOT APPROVED FOR RADIONUCLIDES
1320	3M	Su,ON	2	DM	CLO2/H2S
1321	3M	Rp,Fm,ON	2	DM	CLO2/H2S
1322	3M	Su,ON	2	DM	OV/HF
1323	3M	Rp,Fm,ON	2	DM	OV/HF
1330	3M	Su,ON	2	HR	H2S/CLO2 NOT APPROVED FOR RADIONUCLIDES
1331	3M	Rp,Fm,ON	2	HR	H2S/CLO2 NOT APPROVED FOR RADIONUCLIDES
1332	3M	Su,ON	2	HR	OV,HF NOT APPROVED FOR RADIONUCLIDES
1333	3M	Rp,Fm,ON	2	HR	OV,HF NOT APPROVED FOR RADIONUCLIDES

1339	Moldex-Metric	Rp,Fm,ON	2	DM	HF/CLO2/ H2S
1340	Moldex-Metric	Rp,Fm,ON	2	DM	OV/CLO2
1342	Moldex-Metric	Rp,Fm,ON	2	DM	CLO2/H2S/ HF
1343	Moldex-Metric	Rp,Fm,ON	2	DM	CLO2/HF
1347	Survivair	PAPR,ON	3	HRA	OV
1360	Cabot	Rp,Fm,FF	2		OV/CLO2
1362	Cabot	Rp,Fm,FF	2	HRA	OV/CLO2 Pest
1366	MSA	Rp,Fm,ON	2		OV/CH2-O
1367	MSA	Rp,Fm,ON	2	HRA	OV/CH2-O
1371	MSA	Rp,Fm,FF	2		
1374	MSA	Rp,Fm,FF	2	HRA	
1375	MSA	Rp,Fm,FF	2	HRA	NOT APPROVED FOR RADIONUCLIDES
1379	MSA	Rp,Fm,FF	2		OV/CH2-O
1380	MSA	Rp,Fm,FF	2	HRA	OV/CH2-O
1382	MSA	Rp,Fm,FF	2		OV/CLO2/H2S

1383	MSA	Rp,Fm,FF	2	HRA	OV/CIO2/H2S Pest
1388	Cabot	Rp,Fm,FF	2		CLO2/H2S
1389	Cabot	Rp,Fm,FF	2	DM	CLO2/H2S
1390	Cabot	Rp,Fm,FF	2	DFMR	CLO2/H2S
1391	Cabot	Rp,Fm,FF	2	HRA	CLO2/H2S
1392	Cabot	Rp,Fm,FF	2	DM	OV/CLO2
1393	Cabot	Rp,Fm,FF	2	DFMR	OV/CLO2 Pest
1403	Cabot	Rp,Fm,FF	2	DFM	OV/CLO2 Pest
1404	Cabot	Es,Mp	2	DM	CLO2/H2S

6. Organic Vapor

Approval

Approved as respiratory protection against organic vapors.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - ORGANIC VAPOR

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
40	MSA	Rp,Fm,Bm,ON	2	DM	
47	MSA	Rp,Fm,Bm,ON	2	DM	SO2/HCl Cl/ClO2 H2S
49	North	Rp,Fm,ON	2		
50	Willson	Rp,Fm,ON	2		
51	Willson	Rp,Fm,ON	2	DM	
52	Willson	Rp,Fm,ON	2	DFM	
54	WGM	Rp,Fm,ON	2	DM	PLE/Pest
56	Cabot Safety	Rp,Fm,ON	2		
59	DeVilbiss	Rp,Fm,ON	2		
65	North	Rp,Fm,ON	2		SO2/HCl Cl
66	North	Rp,Fm,ON	2	DM	SO2/HCl Cl
73	North	Rp,Fm,ON	2	DM	
74	North	Rp,Fm,ON	2		Pest
75	North	Rp,Fm,ON	2		PLE
75	Acme	Rp,Fm,ON	2		PLE
76	Willson	Rp,Fm,ON	2		SO2/HCl Cl/HF/H2S

77	Willson	Rp,Fm,ON	2	DM	SO2/HCl Cl/HF/H2S
79	MSA	Rp,Fm,Bm,ON	2	DM	PLE/Pest
80	MSA	Rp,Fm,Bm,ON	2	DM	PLE
81	Pulmosan	Rp,Fm,ON	1		
82	Cabot Safety	Rp,Fm,ON	2		SO2/HCl Cl
83	Cabot Safety	Rp,Fm,ON	2	DM	
84	Cabot Safety	Rp,Fm,ON	1		
85	Cabot Safety	Rp,Fm,ON	1		SO2/HCl Cl
86	Binks	Rp,Fm,ON	2		
87	Binks	Rp,Fm,ON	2	DM	PLE
88	Glendale	Rp,Fm,ON	2		
89	Glendale	Rp,Fm,ON	2	DM	
90	Glendale	Rp,Fm,ON	2		PLE
91	Pulmosan	Rp,Fm,ON	1	DM	
92	Cabot Safety	Rp,Fm,ON	1	DM	PLE
93	Cabot Safety	Rp,Fm,ON	1	DM	PLE

94	Cabot Safety	Rp,Fm,ON	2	DM	PLE
96	DeVilbiss	Rp,Fm,ON	2	DM	PLE
97	Cabot Safety	Rp,Fm,ON	2	DM	PLE
99	Cesco	Rp,Fm,ON	2		
100	Pulmosan	Rp,Fm,ON	1		PLE
100	Fibre Metal	Rp,Fm,ON	1		PLE
100	Shoplyne	Rp,Fm,ON	1		PLE
101	North	Rp,Fm,ON	1		
102	North	Rp,Bm,ON	2		
103	North	Rp,Bm,ON	2	DM	
104	North	Rp,Bm,ON	2		SO2/HCl Cl
105	North	Rp,Bm,ON	2	DM	SO2/HCl Cl
106	Cabot Safety	Rp,Fm,ON	2	DFM	Pest
107	Protech	Rp,Fm,ON	2		
107	Sellstrom	Rp,Fm,ON	2		
107	Eastern	Rp,Fm,ON	2		
107	Safe-Tex	Rp,Fm,ON	2		

113	Scott REPLACED BY TC-23C-780	Rp,Fm,ON	2		
114	Scott	Rp,Fm,ON	2	DM	
117	Scott	Rp,Fm,ON	2	DFMR	PLE/Pest
118	US Safety	Rp,Fm,ON	2		
119	Cesco	Fm,ON	2		
120	US Safety	Rp,Fm,ON	2	DM	
120	Lab Safety Supply	Rp,Fm,ON	2	DM	
121	Cesco	Rp,Fm,ON	2	DM	
123	3M	Su,ON	1		
124	Protech	Rp,Fm,ON	2		PLE
124	Eastern	Rp,Fm,ON	2		PLE
124	Sellstrom	Rp,Fm,ON	2		PLE
124	Safe-Tex	Rp,Fm,ON	2		PLE
125	US Safety	Rp,Fm,ON	2		PLE
126	Cesco	Rp,Fm,ON	2		PLE
127	Stewart- Warner	Rp,Fm,ON	2		PLE
128	Northcott	Rp,Fm,ON	2		PLE
130	Willson	Rp,Fm,FF	2		

131	Willson	Rp,Fm,FF	2	DFM	
133	Willson	Rp,Fm,FF	2	DM	PLE/Pest
134	Willson	Rp,Fm,FF	2	DM	
141	Willson	Rp,Fm,FF	2		SO2/HCl Cl/HF/H2S
142	Willson	Rp,Fm,FF	2	DM	SO2/HCl Cl/HF/H2S
144	MSA	Rp,Fm,FF	2	DM	
146	MSA	Rp,Fm,FF	2	DM	SO2/HCl H2S/Cl ClO2
148	MSA	Rp,Fm,FF	2	DM	PLE/Pest
149	MSA	Rp,Fm,FF	2	DM	PLE
151	MSA	Rp,Fm,FF	2	DM	
153	MSA	Rp,Fm,FF	2	HA	SO2/HCl ClO2/Cl H2S/Pest
154	MSA	Rp,Fm,FF	2	DFMR	SO2/HCl ClO2/Cl H2S/Pest
155	MSA	Rp,Fm,FF	2	HA	PLE/Pest
157	MSA	Rp,Fm,Bm,ON	2	DM	
159	MSA	Rp,Fm,Bm,ON	2	HA	SO2/HCl ClO2/Cl H2S/Pest

160	MSA	Rp,Fm,Bm,ON	2	DFMR	SO2/HCl ClO2/Cl H2S/Pest
161	MSA	Rp,Fm,Bm,ON	2	HA	PLE/Pest
163	Protech	Rp,Fm,ON	2	DMZ	SO2/HCl Cl
163	Sellstrom	Rp,Fm,ON	2	DMZ	SO2/HCl Cl
163	Eastern	Rp,Fm,ON	2	DMZ	SO2/HCl Cl
166	Cesco	Rp,Fm,ON	2		SO2/HCl Cl
167	Cesco	Rp,Fm,ON	2	DM	SO2/HCl Cl
170	US Safety	Rp,Fm,ON	2		SO2/HCl Cl
171	US Safety	Rp,Fm,ON	2	DM	SO2/HCl Cl
171	Lab Safety Supply	Rp,Fm,ON	2	DM	SO2/HCl Cl
172	Scott	Rp,Fm,ON	2		SO2/HCl CH2-O/Cl H2S/ClO2
REPLACED BY TC-23C-776					
174	Scott	Rp,Fm,ON	2	DM	SO2/HCl CH2-O/Cl H2S/ClO2
175	North	Rp,Bm,ON	2		PLE
178	North	Rp,Bm,ON	2		Pest

180	North	Rp,Fm,FF	2		
181	North	Rp,Fm,FF	2		SO2/HCl Cl
185	North	Rp,Fm,FF	2	DM	
186	North	Rp,Fm,FF	2	DM	SO2/HCl Cl
188	North	Rp,Fm,FF	2		PLE
190	North	Rp,Fm,FF	2		Pest
196	3M	Su,ON	1	DM	Cl
198	US Safety	Rp,Fm,ON	2		Pest
199	Cesco	Rp,Fm,ON	2		Pest
201	MSA	Rp,Fm,ON	2	DM	PLE
202	Protech	Rp,Fm,ON	2	DM	Pest
202	Eastern	Rp,Fm,ON	2	DM	Pest
202	Sellstrom	Rp,Fm,ON	2	DM	Pest
204	North	Rp,Fm,ON	2	HRA	PLE/Pest
205	North	Rp,Bm,ON	2	HRA	PLE/Pest
206	North	Rp,Fm,FF	2	HRA	PLE/Pest
210	North	Rp,Fm,ON	2	HRA	SO2/HCl Cl
211	North	Rp,Bm,ON	2	HRA	SO2/HCl Cl

212	North	Rp,Fm,FF	2	HRA	SO2/HCl Cl
216	3M	Su,ON	1	DM	SO2/HCl Cl
219	Scott	Rp,Fm,FF	2		
220	Scott	Rp,Fm,FF	2	DM	
221	Scott	Rp,Fm,FF	2		SO2/HCl Cl/H2S ClO2/CH2-O
222	Scott	Rp,Fm,FF	2	DM	SO2/HCl Cl/H2S ClO2/CH2-O
224	Scott	Rp,Fm,FF	2	DFMR	PLE/Pest
234	Cabot Safety	Rp,Fm,FF	2		SO2/HCl Cl
236	Cabot Safety	Rp,Fm,FF	2		
237	Cabot Safety	Rp,Fm,FF	2	DM	
238	Cabot Safety	Rp,Fm,FF	2	DFM	Pest
239	Cabot Safety	Rp,Fm,FF	2		PLE
240	Cabot Safety	Rp,Fm,FF	2	DM	PLE
241	Glendale	Rp,Fm,ON	2		SO2/HCl Cl/CH2-O
242	Glendale	Rp,Fm,ON	2	DM	SO2/HCl Cl/CH2-O

243	MSA	Rp,Fm,ON	2	HA	
244	MSA	Rp,Bm,ON	2	HA	
245	MSA	Rp,Fm,FF	2	HA	
250	Scott	Rp,Fm,ON	2	DFMR	SO2/HCl CH2-O/Cl H2S/ClO2
251	Scott	Rp,Fm,FF	2	DFMR	SO2/HCl Cl/H2S ClO2/CH2-O
258	Willson	Rp,Fm,ON	2	DM	PLE
259	Willson	Rp,Fm,FF	2	DM	PLE
260	MSA	Rp,Fm,ON	2	DM	SO2/HCl ClO2/Cl H2S
261	MSA	Rp,Bm,ON	2	DM	SO2/HCl ClO2/Cl H2S
262	MSA	Rp,Fm,FF	2	DM	SO2/HCl ClO2/Cl H2S
263	Cesco	Rp,Fm,FF	2	DM	
264	US Safety	Rp,Fm,FF	2	DM	
264	Lab Safety Supply	Rp,Fm,FF	2	DM	
267	Cesco	Rp,Fm,FF	2	DM	SO2/HCl Cl
268	US Safety	Rp,Fm,FF	2	DM	SO2/HCl Cl

268	Lab Safety Supply	Rp,Fm,FF	2	DM	SO2/HCl Cl
271	Cesco	Rp,Fm,FF	2		PLE
272	US Safety	Rp,Fm,FF	2		PLE
275	Protech	Rp,Fm,ON	2	DFM	
275	Sellstrom	Rp,Fm,ON	2	DFM	
276	Sellstrom	Rp,Fm,ON	2	DM	
276	Protech	Rp,Fm,ON	2	DM	
277	DeVilbiss	Rp,Fm,ON	1		
278	DeVilbiss	Rp,Fm,ON	1	DM	PLE
281	Cabot Safety	Rp,Fm,ON	2	DFM	SO2/HCl ClO2/Pest Cl
282	Cabot Safety	Rp,Fm,FF	2	DFM	SO2/HCl ClO2/Pest Cl
285	MSA	Rp,Fm,FF	2	DM	PLE
286	MSA	Rp,Bm,ON	2	DM	PLE
287	Survivair	Rp,Fm,ON	2		
293	Willson	Rp,Fm,ON	2		
294	Willson	Rp,Fm,ON	2	HA	
295	Willson	Rp,Fm,FF	2		
296	Willson	Rp,Fm,FF	2	HA	

297	3M	Su,ON	1		
298	Willson	Rp,Fm,ON	2		SO2/HCl Cl/H2S
299	Willson	Rp,Fm,ON	2	HA	SO2/HCl Cl/H2S
300	Willson	Rp,Fm,FF	2		SO2/HCl Cl/H2S
301	Willson	Rp,Fm,FF	2	HA	SO2/HCl Cl/H2S
302	Cesco	Rp,Fm,ON	2	HRA	
303	US Safety	Rp,Fm,ON	2	HRA	
303	Lab Safety Supply	Rp,Fm,ON	2	HRA	
304	Cesco	Rp,Fm,FF	2	HRA	
305	US Safety	Rp,Fm,FF	2	HRA	
305	Lab Safety Supply	Rp,Fm,FF	2	HRA	
310	Cesco	Rp,Fm,ON	2	HRA	SO2/HCl Cl
311	US Safety	Rp,Fm,ON	2	HRA	SO2/HCl Cl
311	Lab Safety Supply	Rp,Fm,ON	2	HRA	SO2/HCl Cl
312	Cesco	Rp,Fm,FF	2	HRA	SO2/HCl Cl
313	US Safety	Rp,Fm,FF	2	HRA	SO2/HCl Cl

313	Lab Safety Supply	Rp,Fm,FF	2	HRA	SO2/HCl/Cl
318	Survivair	Rp,Fm,ON	2		SO2/HCl/Cl
320	Pulmosan	Rp,Fm,ON	1		SO2/HCl/Cl
321	Survivair	Rp,Fm,ON	2	DM	PLE
322	Survivair	Rp,Fm,ON	2	DM	
323	Survivair	Rp,Fm,ON	2	DFMR	Pest
324	Pulmosan	Rp,Fm,ON	1	DM	SO2/HCl/Cl
325	Cabot Safety	Rp,Fm,ON	2		
326	Cabot Safety	Rp,Fm,FF	2		
327	Cabot Safety	Rp,Fm,ON	2	DM	
328	Cabot Safety	Rp,Fm,FF	2	DM	
333	Cabot Safety	Rp,Fm,ON	2	DM	PLE
334	Cabot Safety	Rp,Fm,FF	2	DM	PLE
335	DeVilbiss	Rp,Fm,ON	2	DM	PLE
336	US Safety	Rp,Fm,ON	2	DFMR	PLE/Pest
336	Lab Safety Supply	Rp,Fm,ON	2	DFMR	PLE/Pest

337	Cesco	Rp,Fm,ON	2	DFMR	PLE/Pest
338	US Safety	Rp,Fm,FF	2	DFMR	PLE/Pest
338	Lab Safety Supply	Rp,Fm,FF	2	DFMR	PLE/Pest
343	Cabot Safety	Rp,Fm,ON	2		SO2/HCl ClO2/Cl
344	Cabot Safety	Rp,Bm,FF	2		SO2/HCl ClO2/Cl
345	Cabot Safety	Rp,Fm,ON	2	DM	SO2/HCl ClO2/Cl
346	Cabot Safety	Rp,Fm,FF	2	DM	SO2/HCl ClO2/Cl
348	Cesco	Rp,Fm,FF	2	DFM	PLE/Pest
349	North	Su,ON	1		
351	Survivair	Rp,Fm,FF	2		
352	North	Su,ON	1		SO2/HCl Cl/CH2-O
354	North	Su,ON	1	DM	PLE/Pest
355	North	Su,ON	1	DM	
357	North	Su,ON	1	DM	SO2/HCl Cl/CH2-O
360	Willson	Rp,Bm,ON	2		
361	Willson	Rp,Bm,FF	2		
362	Willson	Rp,Bm,ON	2		

363	Willson	Rp,Bm,FF	2		
368	Willson	Rp,Bm,ON	2		SO2/HCl Cl
369	Willson	Rp,Bm,FF	2		SO2/HCl Cl
370	Willson	Rp,Bm,ON	2		SO2/HCl Cl
371	Willson	Rp,Bm,FF	2		SO2/HCl Cl
373	Stewart Warner	Rp,Fm,ON	2	DFMR	PLE/Pest
374	Willson	Rp,Bm,ON	2	DM	PLE/Pest
375	Willson	Rp,Bm,FF	2	DM	PLE/Pest
376	Willson	Rp,Bm,ON	2	DM	PLE
377	Willson	Rp,Bm,FF	2	DM	PLE
380	Willson	Rp,Bm,ON	2	DM	SO2/HCl Cl
381	Willson	Rp,Bm,FF	2	DM	SO2/HCl Cl
382	Willson	Rp,Bm,ON	2	HA	
383	Willson	Rp,Bm,FF	2	HA	
386	Willson	Rp,Bm,ON	2	HA	SO2/HCl Cl
387	Willson	Rp,Bm,FF	2	HA	SO2/HCl Cl

388	Willson	Rp,Fm,FF	2	DM	
389	Willson	Rp,Bm,ON	2	DM	
390	Willson	Rp,Bm,FF	2	DFM	
391	Willson	Rp,Bm,ON	2	DFM	
392	Northcott	Rp,Fm,ON	2	DFMR	PLE/Pest
393	Survivair	Rp,Fm,ON	2	DFMR	SO2/HCl Cl
394	Survivair	Rp,Fm,FF	2	DFMR	SO2/HCl Cl
404	Glendale	Rp,Fm,FF	2		
405	Glendale	Rp,Fm,FF	2	DM	
406	Glendale	Rp,Fm,FF	2		PLE
410	Glendale	Rp,Fm,FF	2		SO2/HCl Cl/CH2-O
411	Glendale	Rp,Fm,FF	2	DM	SO2/HCl Cl/CH2-O
413	Cabot Safety	Rp,Fm,ON	2	HRA	Pest/PLE
414	Cabot Safety	Rp,Fm,FF	2	HRA	Pest/PLE
417	Cabot Safety	Rp,Fm,ON	2	HRA	SO2/HCl ClO2/Pest Cl
418	Cabot Safety	Rp,Fm,FF	2	HRA	SO2/HCl ClO2/Pest Cl

421	Protech	Rp,Fm,ON	2	HRA	SO2/HCl Cl
421	Sellstrom	Rp,Fm,ON	2	HRA	SO2/HCl Cl
424	Cabot Safety	Rp,Fm,ON	2		
425	Cabot Safety	Rp,Fm,FF	2		
426	Cabot Safety	Rp,Fm,ON	2	DMZ	PLE
427	Cabot Safety	Rp,Fm,FF	2	DMZ	PLE
428	DeVilbiss	Rp,Fm,ON	2	DMZ	PLE
433	Survivair	Rp,Fm,ON	2	DM	SO2/HCl Cl
434	Survivair	Rp,Fm,ON	2	DM	SO2/HCl Cl/CH2-O
435	3M	Rp,Fm,ON	2		
436	3M	Rp,Fm,ON	2	DM	PLE
437	3M	Rp,Fm,ON	2	DM	
438	3M	Rp,Fm,ON	2	HRA	
446	3M	Rp,Fm,ON	2		SO2/HCl Cl/HF
447	3M	Rp,Fm,ON	2	DM	SO2/HCl Cl/HF

448	3M	Rp,Fm,ON	2	HRA	SO2/HCl Cl/HF
450	Survivair	Rp,Fm,ON	2	HRA	SO2/HCl Cl/Pest
451	Survivair	Rp,Fm,FF	2	HRA	SO2/HCl Cl/Pest
452	Survivair	Rp,Fm,ON	2	HRA	Pest
453	Survivair	Rp,Fm,FF	2	HRA	Pest
454	Survivair	Rp,Fm,FF	2		SO2/HCl Cl/CH2-O
455	Survivair	Rp,Fm,FF	2	DM	PLE
456	Survivair	Rp,Fm,FF	2	DFMR	Pest
458	Protech	Rp,Fm,ON	2	HRA	
458	Sellstrom	Rp,Fm,ON	2	HRA	
460	MSA	Rp,Bm,ON	2	DM	
462	MSA	Rp,Bm,ON	2	DM	SO2/HCl ClO2/Cl H2S
464	MSA	Rp,Bm,ON	2	DM	Pest/PLE
465	MSA	Rp,Bm,ON	2	HA	PLE/Pest
466	MSA	Rp,Bm,ON	2	HA	SO2/HCl ClO2/Cl H2S/Pest
467	MSA	Rp,Bm,ON	2	DFMR	SO2/HCl ClO2/Cl H2S/Pest

469	MSA	Rp,Bm,ON	2	DM	
471	MSA	Rp,Bm,ON	2	HA	
472	MSA	Rp,Bm,ON	2	DM	SO2/HCl ClO2/Cl H2S
473	MSA	Rp,Bm,ON	2	DM	PLE
474	MSA	Rp,Bm,ON	2	DM	PLE
475	3M	Rp,Fm,ON	2		CH2-O
476	Racal	PAPR,HH	3		
477	Racal	PAPR,HH	3		
478	Racal	PAPR,HH	3		
482	Racal	PAPR,HH	3	HRA	Pest
483	Racal	PAPR,FF	3	HRA	Pest
484	Racal	PAPR,HH	3	HRA	Pest
485	Racal	PAPR,HH	3	HRA	Pest
488	Cabot Safety	Rp,Fm,ON	2	DM	
489	Cabot Safety	Rp,Fm,FF	2	DM	
490	Cabot Safety	Rp,Fm,ON	2	DM	PLE
491	Cabot Safety	Rp,Fm,FF	2	DM	PLE

494	Pulmosan	Rp,Fm,FF	1		PLE
495	Pulmosan	Rp,Fm,FF	1		
497	Pulmosan	Rp,Fm,FF	1		SO2/HCl Cl
499	Pulmosan	Rp,Fm,FF	1	DM	
501	Pulmosan	Rp,Fm,FF	1	DM	SO2/HCl Cl
503	3M	Rp,Fm,ON	2	DM	CH2-O
504	Pirelli	Rp,Fm,ON	2		
509	MSA	Rp,Fm,ON	1		
510	MSA	Rp,Fm,ON	1	DM	PLE
512	MSA	Rp,Fm,ON	1	DM	SO2/HCl CH2-O/Cl
521	Scott	Rp,Fm,ON	2	HRA	SO2/HCl CH2-O/Cl H2S/ClO2
REPLACED BY TC-23C-779					
522	Scott	Rp,Fm,FF	2	HRA	SO2/HCl Cl/H2S ClO2/CH2-O
523	Scott	Rp,Fm,ON	2	HRA	PLE/Pest
REPLACED BY TC-23C-783					
524	Scott	Rp,Fm,FF	2	HRA	PLE/Pest
529	Pirelli	Rp,Fm,FF	2		
530	Survivair	Rp,Fm,ON	2	DFMR	Pest

531	Survivair	Rp,Fm,FF	2	DFMR	Pest
532	Survivair	Rp,Fm,ON	2	DFMR	SO2/HCl Cl
533	Survivair	Rp,Fm,FF	2	DFMR	SO2/HCl Cl/CH2-O
535	Racal	PAPR,FF	3		
538	Safety Supply	Rp,Fm,ON	2		
539	Safety Supply	Rp,Fm,FF	2		
540	Safety Supply	Rp,Fm,ON	2		PLE
541	Safety Supply	Rp,Fm,FF	2		PLE
542	Safety Supply	Rp,Fm,ON	2		SO2/HCl Cl
543	Safety Supply	Rp,Fm,FF	2		SO2/HCl Cl
548	Safety Supply	Rp,Fm,ON	2	DM	
549	Safety Supply	Rp,Fm,FF	2	DM	
552	Safety Supply	Rp,Fm,ON	2	DM	HCl/SO2 Cl
553	Safety Supply	Rp,Fm,FF	2	DM	SO2/HCl Cl
554	Pulmosan	Rp,Fm,ON	2	DM	PLE

555	Willson	Rp,Fm,ON	2		
556	Willson	Rp,Fm,ON	2		
557	Willson	Rp,Fm,ON	2		
558	Willson	Rp,Fm,ON	2		
563	Willson	Rp,Fm,ON	2		SO2/HCl Cl/HF/H2S
564	Willson	Rp,Fm,ON	2		SO2/HCl Cl
565	Willson	Rp,Fm,ON	2		SO2/HCl Cl/H2S
566	Willson	Rp,Fm,ON	2		SO2/HCl Cl
567	Willson	Rp,Fm,ON	2	DM	
568	Willson	Rp,Fm,ON	2	DM	
569	Willson	Rp,Fm,ON	2	DFM	
570	Willson	Rp,Fm,ON	2	DFM	
571	Willson	Rp,Fm,ON	2	DM	PLE/Pest
572	Willson	Rp,Fm,ON	2	DM	PLE/Pest
573	Willson	Rp,Fm,ON	2	DM	PLE
574	Willson	Rp,Fm,ON	2	DM	PLE
577	Willson	Rp,Fm,ON	2	DM	SO2/HCl Cl/HF/H2S

578	Willson	Rp,Fm,ON	2	DM	SO2/HCl Cl
579	Willson	Rp,Fm,ON	2	HA	
580	Willson	Rp,Fm,ON	2	HA	
583	Willson	Rp,Fm,ON	2	HA	SO2/HCl Cl/H2S
584	Willson	Rp,Fm,ON	2	HA	SO2/HCl Cl
585	Cabot Safety	Rp,Fm,ON	2	DFM	Pest
586	Cabot Safety	Rp,Fm,ON	2	DFM	Pest
587	Cabot Safety	Rp,Fm,ON	2	DFM	SO2/HCl ClO2/Pest Cl
588	Cabot Safety	Rp,Fm,FF	2	DFM	SO2/HCl ClO2/Pest Cl
602	Racal	PAPR,HH	3	HRA	Pest
605	Racal	PAPR,HH	3		SO2/HCl Cl
606	Racal	PAPR,FF	3		SO2/HCl Cl
607	Racal	PAPR,HH	3		SO2/HCl Cl
608	Racal	PAPR,HH	3		SO2/HCl Cl
609	Racal	PAPR,ON	3		

611	Racal	PAPR,ON	3	HRA	Pest
615	Racal	PAPR,ON	3		SO2/HCl Cl
616	Shoplyne	Rp,Fm,ON	2	DM	PLE
617	Glendale	Rp,Fm,ON	2	HRA	
618	Glendale	Rp,Fm,FF	2	HRA	
621	Glendale	Rp,Fm,ON	2	HRA	SO2/HCl Cl/CH2-O
622	Glendale	Rp,Fm,FF	2	HRA	SO2/HCl Cl/CH2-O
625	Neoterik	PAPR,ON	3		
626	Neoterik	PAPR,ON	3		SO2/HCl Cl
630	Racal	PAPR,HH	3		
632	Racal	PAPR,HH	3	HRA	Pest
636	Racal	PAPR,HH	3		SO2/HCl Cl
637	Neoterik	PAPR,FF	3		
638	Neoterik	PAPR,FF	3		SO2/HCl Cl
647	Racal	PAPR,FF	2	HRA	SO2/HCl Cl
648	Racal	PAPR,ON	3	HRA	SO2/HCl Cl
649	North	Rp,Fm,ON	2	DFM	

650	North	Rp,Bm,ON	2	DFM	
651	North	Rp,Fm,FF	2	DFM	
655	North	Rp,Fm,ON	2	DFM	SO2/HCl Cl
656	North	Rp,Bm,ON	2	DFM	SO2/HCl Cl
657	North	Rp,Fm,FF	2	DFM	SO2/HCl Cl
661	Eastern	Rp,Fm,FF	2		
661	Sellstrom	Rp,Fm,FF	2		
662	Protech	Rp,Fm,FF	2	DM	
662	Sellstrom	Rp,Fm,FF	2	DM	
663	Protech	Rp,Fm,FF	2	DFM	
663	Sellstrom	Rp,Fm,FF	2	DFM	
664	Sellstrom	Rp,Fm,FF	2		SO2/HCl Cl
664	Protech	Rp,Fm,FF	2		SO2/HCl Cl
665	Protech	Rp,Fm,FF	2	DM	SO2/HCl Cl
665	Eastern	Rp,Fm,FF	2	DM	SO2/Cl HCl
668	Protech	Rp,Fm,FF	2		PLE
668	Eastern	Rp,Fm,FF	2		PLE

668	Sellstrom	Rp,Fm,FF	2		PLE
669	Protech	Rp,Fm,FF	2	DM	Pest
669	Eastern	Rp,Fm,FF	2	DM	Pest
669	Sellstrom	Rp,Fm,FF	2	DM	Pest
670	Protech	Rp,Fm,FF	2	HRA	SO2/HCl Cl
670	Eastern	Rp,Fm,FF	2	HRA	SO2/Cl/ HCl
670	Sellstrom	Rp,Fm,FF	2	HRA	SO2/HCl Cl
672	Protech	Rp,Fm,FF	2	HRA	
672	Sellstrom	Rp,Fm,FF	2	HRA	
675	Binks	Rp,Fm,ON	2	HA	PLE
676	Cabot Safety	Rp,Fm,ON	1		
677	Cabot Safety	Rp,Fm,ON	1	DM	PLE
678	Eastern	Rp,Fm,ON	2	HRA	SO2/HCl Cl
679	Cabot Safety	Rp,Fm,FF	2		SO2/HCl ClO2/Cl
683	3M	Rp,Fm,FF	2		
685	3M	Rp,Fm,FF	2		Cl/HCl SO2/HF
688	3M	Rp,Fm,FF	2	DM	

690	3M	Rp,Fm,FF	2	DM	SO2/CI HCI/HF
691	3M	Rp,Fm,FF	2	DM	PLE
693	3M	Rp,Fm,FF	2	HRA	
695	3M	Rp,Fm,FF	2	HRA	SO2/HCI CI/HF
697	3M	Rp,Fm,FF	2		CH2-O
698	3M	Rp,Fm,FF	2	DM	CH2-O
717	Willson	Rp,Fm,ON	2	DFM	HCI/SO2 CI/HF/H2S
718	Willson	Rp,Fm,FF	2	DFM	HCI/SO2 CI/HF/H2S
719	Willson	Rp,Fm,ON	2	DFM	HCI/SO2 CI/HF/H2S
720	Willson	Rp,Bm,ON	2	DFM	HCI/SO2 CI
721	Willson	Rp,Bm,FF	2	DFM	HCI/SO2 CI
722	Willson	Rp,Bm,ON	2	DFM	HCI/SO2 CI
729	Willson	Rp,Fm,ON	2	DFM	Pest/PLE
730	Willson	Rp,Fm,FF	2	DFM	Pest/PLE
731	Willson	Rp,Fm,ON	2	DFM	Pest/PLE
732	Willson	Rp,Bm,ON	2	DFM	Pest/PLE
733	Willson	Rp,Bm,FF	2	DFM	Pest/PLE

734	Willson	Rp,Bm,ON	2	DFM	Pest/PLE
736	Willson	Rp,Fm,ON	2		SO2/Cl HCl
737	Willson	Rp,Fm,ON	2		
738	Willson	Rp,Fm,ON	1		
740	Willson	Rp,Fm,ON	1		SO2/Cl HCl
743	Willson	Rp,Fm,FF	2		
745	Willson	Rp,Fm,FF	2		SO2/Cl HCl
747	Willson	Rp,Fm,FF	2	DM	PLE/Pest
748	Willson	Rp,Fm,FF	2	DM	SO2/Cl HCl
751	Willson	Rp,Fm,ON	2	DM	PLE/Pest
753	Willson	Rp,Fm,ON	2	DM	SO2/Cl HCl
755	Willson	Rp,Fm,ON	1	DM	PLE/Pest
756	Willson	Rp,Fm,ON	1	DM	SO2/Cl HCl
759	Willson	Rp,Fm,ON	2	HA	
760	Willson	Rp,Fm,FF	2	HA	
763	Willson	Rp,Fm,ON	2	HA	SO2/Cl HCl
764	Willson	Rp,Fm,FF	2	HA	SO2/Cl HCl

776	Scott	Rp,Fm,ON	2		HCl/Cl SO2/H2S ClO2
777	Scott	Rp,Fm,ON	2	DM	HCl/SO2 CH2-O/H2S ClO2/Cl
778	Scott	Rp,Fm,ON	2	DFMR	HCl/SO2 H2S/ClO2 Cl
779	Scott	Rp,Fm,ON	2	HRA	HCl/SO2 H2S/ClO2 Cl
780	Scott	Rp,Fm,ON	2		
781	Scott	Rp,Fm,ON	2	DM	
782	Scott	Rp,Fm,ON	2	DFRM	PLE/Pest
783	Scott	Rp,Fm,ON	2	HRA	PLE/Pest
787	Willson	Rp,Fm,ON	2	DFMR	SO2/Cl HCl
788	Willson	Rp,Fm,FF	2	DFMR	SO2/HCl Cl
791	Willson	Rp,Fm,ON	2	PLE	Pest/PLE
792	Willson	Rp,Fm,FF	2	PLE	Pest/PLE
793	Cabot Safety	Rp,Fm,FF	2	HRA	PLE/Pest
794	Cabot Safety	Rp,Fm,FF	2	HRA	SO2/HCl ClO2/Cl Pest
796	Cabot Safety	Rp,Fm,FF	2	DM	PLE

797	Cabot Safety	Rp,Fm,FF	2		
799	Cabot Safety	Rp,Fm,FF	2		SO2/HCl Cl/ClO2
801	Cabot Safety	Rp,Fm,FF	2	DM	
802	Cabot Safety	Rp,Fm,FF	2	DFM	Pest
805	Cabot Safety	Rp,Fm,FF	2		Cl/SO2/HCl ClO2
806	Cabot Safety	Rp,Fm,FF	2	DM	
807	Cabot Safety	Rp,Fm,FF	2	DM	PLE
809	Cabot Safety	Rp,Fm,FF	2	DM	SO2/HCl Cl/ClO2
812	Cabot Safety	Rp,Fm,FF	2	DFM	Cl/SO2/HCl ClO2
813	Glendale	Rp,Fm,ON	2		
814	Glendale	Rp,Fm,ON	2	DM	
815	Glendale	Rp,Fm,ON	2	HRA	
816	Glendale	Rp,Fm,ON	2		PLE
820	Glendale	Rp,Fm,ON	2		SO2/Cl/HCl CH2-O
821	Glendale	Rp,Fm,ON	2	DM	SO2/Cl/HCl CH2-O

822	Glendale	Rp,Fm,ON	2	HRA	SO2/Cl/HCl CH2-O
826	Willson	Rp,Fm,ON	1	DFM	Pest/PLE
828	Willson	Rp,Fm,ON	1	DFM	SO2/Cl HCl
830	MSA	Rp,Fm,FF	2	DM	PLE
831	MSA	Rp,Fm,FF	2	DM	
833	MSA	Rp,Fm,FF	2	DM	SO2/Cl HCl/H2S ClO2
835	MSA	Rp,Fm,FF	2	DM	
837	MSA	Rp,Fm,FF	2	DM	SO2/Cl HCl/H2S ClO2
838	MSA	Rp,Fm,FF	2	HA	Pest/PLE
839	MSA	Rp,Fm,FF	2	HA	SO2/HCl Cl/H2S ClO2/Pest
841	MSA	Rp,Fm,FF	2	HA	Pest/PLE
842	MSA	Rp,Fm,FF	2	HA	
844	MSA	Rp,Fm,FF	2	DM	SO2/Cl HCl/H2S ClO2
846	MSA	Rp,Fm,FF	2	DM	PLE
847	MSA	Rp,Fm,FF	2	DM	Pest/PLE
848	MSA	Rp,Fm,FF	2	HA	

849	MSA	Rp,Fm,FF	2	DM	
850	MSA	Rp,Fm,FF	2	HA	Pest/PLE
852	MSA	Rp,Fm,FF	2	DM	SO2/Cl HCl/H2S ClO2
853	MSA	Rp,Fm,FF	2	DFMR	SO2/Cl HCl/H2S ClO2/Pest
854	MSA	Rp,Fm,FF	2	HRA	SO2/Cl HCl/H2S ClO2/Pest
855	MSA	Rp,Fm,FF	2	DM	
857	3M	Su,ON	1		Pest
859	3M	Su,ON	2		
860	3M	Su,ON	2	DM	Pest,PLE
863	Devilbiss	Rp,Fm,ON	2	DM	PLE
864	3M	Su,ON	2		CH2-O
865	3M	Su,ON	2		SO2/Cl/ HCl/HF
867	3M	Su,ON	2	DM	CH2-O
868	3M	Su,ON	2	DM	SO2/Cl/ HCl/HF
870	Binks	Rp,Fm,FF	2	DM	PLE
871	Binks	Rp,Fm,FF	2	HA	PLE
873	Masprot	Rp,Fm,ON	2	DM	

875	DeVilbiss	Rp,Fm,FF	2	DM	PLE
876	3M	Rp,Fm,FF	2		
878	3M	Rp,Fm,FF	2		HF/SO2 Cl/HCl
881	3M	Rp,Fm,FF	2	DM	
883	3M	Rp,Fm,FF	2	DM	HF/SO2 Cl/HCl
884	3M	Rp,Fm,FF	2	DM	PLE
886	3M	Rp,Fm,FF	2	HRA	PLE
888	3M	Rp,Fm,FF	2	HRA	HF/SO2 Cl/HCl
890	3M	Rp,Fm,FF	2		CH2-O
891	3M	Rp,Fm,FF	2	DM	CH2-O
892	Racal	PAPR,HH	3		
893	Racal	PAPR,HH	3	HRA	Pest
897	Racal	PAPR,HH	3		SO2/Cl/HCl
899	Cabot Safety	Rp,Fm,ON	2	DFMR	Pest/PLE
900	Cabot Safety	Rp,Fm,FF	2	DFMR	Pest/PLE
901	Cabot Safety	Rp,Fm,FF	2	DFMR	Pest/PLE
905	Cabot Safety	Rp,Fm,ON	2	DFMR	SO2/ClO2/ HCl/Pest/ Cl

906	Cabot Safety	Rp,Fm,FF	2	DFMR	SO2/ClO2/ HCl/Pest/ Cl
907	Cabot Safety	Rp,Fm,FF	2	DFMR	SO2/ClO2/ Pest/HCl/ Cl
914	Cabot Safety	Rp,Fm,FF	2	DFMR	SO2/ClO2/ HCl/Pest/ Cl
915	Cabot Safety	Rp,Fm,FF	2	DFMR	SO2/ClO2/ Pest/HCl/ Cl
917	MSA	Rp,Fm,ON	2	DM	CH2-O/SO2/ Cl/HCl
918	MSA	Rp,Fm,ON	2	DM	CH2-O/SO2/ Cl/HCl
919	MSA	Rp,Fm,FF	2	DM	CH2-O/SO2/ Cl/HCl
920	MSA	Rp,Bm,ON	2	DM	CH2-O/SO2/ Cl/HCl
921	MSA	Rp,Fm,FF	2	DM	CH2-O/SO2/ Cl/HCl
922	MSA	Rp,Fm,FF	2	DM	CH2-O/SO2/ Cl/HCl
923	MSA	Rp,Fm,ON	2	HA	CH2-O/SO2/ Cl/HCl
924	MSA	Rp,Bm,ON	2	HA	CH2-O/SO2/ Cl/HCl
925	MSA	Rp,Bm,ON	2	HA	CH2-O/SO2/ Cl/HCl

926	MSA	Rp,Fm,FF	2	HA	CH2-O/SO2/ Cl/HCl
927	MSA	Rp,Fm,FF	2	HA	CH2-O/SO2/ Cl/HCl
928	MSA	Rp,Fm,FF	2	HA	CH2-O/SO2/ Cl/HCl
929	MSA	Rp,Fm,ON	2	HA	SO2/Cl/HCl H2S/ClO2 Pest NOT APPROVED FOR RADIONUCLIDES
930	MSA	Rp,Bm,ON	2	HA	SO2/Cl/HCl H2S/ClO2 Pest NOT APPROVED FOR RADIONUCLIDES
931	MSA	Rp,Fm,FF	2	HA	SO2/Cl/HCl H2S/ClO2 Pest NOT APPROVED FOR RADIONUCLIDES
932	MSA	Rp,Bm,ON	2	HA	SO2/Cl/HCl H2S/ClO2 Pest NOT APPROVED FOR RADIONUCLIDES
933	MSA	Rp,Fm,FF	2	HA	SO2/Cl HCl/H2S ClO2/Pest NOT APPROVED FOR RADIONUCLIDES
934	MSA	Rp,Fm,FF	2	HA	SO2/Cl/HCl H2S/ClO2 Pest NOT APPROVED FOR RADIONUCLIDES
941	National Draeger	Rp,Fm,FF	1	HA	
944	MSA	Rp,Fm,FF	2	DM	PLE
945	MSA	Rp,Fm,FF	2	DM	
947	MSA	Rp,Fm,FF	2	DM	SO2/Cl HCl/ClO2 H2S

949	MSA	Rp,Fm,FF	2	DM	
950	MSA	Rp,Fm,FF	2	HA	PLE/Pest
952	MSA	Rp,Fm,FF	2	HA	SO2/CI HCl/CLO2 H2S/Pest
953	MSA	Rp,Fm,FF	2	DFMR	SO2/CI HCl/CLO2 H2S/Pest
955	MSA	Rp,Fm,FF	2	DM	PLE/Pest
956	MSA	Rp,Fm,FF	2	HA	
957	MSA	Rp,Fm,FF	2	DM	SO2/CI HCl/CLO2 H2S
958	MSA	Rp,Fm,FF	2	DM	CH2-O/SO2/ Cl/HCl
960	MSA	Rp,Fm,FF	2	HA	CH2-O/SO2/ Cl/HCl
961	MSA	Rp,Fm,FF	2	HA	SO2/CI HCl/CLO2 H2S/Pest NOT APPROVED FOR RADIONUCLIDES
963	Critical Products Group	Rp,Fm,ON	2	HA	
965	Critical Products Group	Rp,Fm,ON	2	HA	SO2/CI HCl
967	Masprot	Rp,Fm,ON	2		SO2/CI HCl

968	Masprot	Rp,Fm,ON	2	HA	SO2/CI HCl
969	Cabot Safety	PAPR,FF	2		
971	National Draeger	Rp,Fm,FF	1		
977	Cabot Safety	Rp,Fm,FF	2		
978	Cabot Safety	Rp,Fm,FF	2	DM	
979	Cabot Safety	Rp,Fm,FF	2	DM	PLE
980	Cabot Safety	Rp,Fm,FF	2	DFMR	PLE/Pest
984	Cabot Safety	Rp,Fm,FF	2		SO2/CI HCl/CLO2
985	Cabot Safety	Rp,Fm,FF	2	DM	SO2/CI HCl/CLO2
986	Cabot Safety	Rp,Fm,FF	2	DFMR	SO2/CI HCl/CLO2 Pest
990	Cabot Safety	Rp,Fm,FF	2	DM	
991	Cabot Safety	Rp,Fm,FF	2	DFM	Pest
995	Cabot Safety	Rp,Fm,FF	2		SO2/CI HCl/CLO2
996	Cabot Safety	Rp,Fm,FF	2	DMFR	SO2/CI HCl/CLO2

997	Cabot Safety	Rp,Fm,FF	2	DM	PLE
998	Cabot Safety	Rp,Fm,FF	2	DFM	SO2/CI HCl/CLO2 Pest
999	Cabot Safety	Rp,Fm,FF	2	HRA	Pest/PLE
1001	Cabot Safety	Rp,Fm,FF	2	HRA	SO2/CI HCl/CLO2 Pest
1008	National Draeger	Rp,Fm,FF	1		SO2/CI HCl
1009	Masprot	Rp,Fm,ON	2	HA	Pest/PLE
1010	3M	Su,ON	2	HRA	SO2/CI HCl/HF
1012	3M	Su,ON	2	HRA	CH2-O
1013	3M	Su,ON	2	HRA	Pest/PLE
1014	National Draeger	Rp,Fm,FF	1	HA	SO2/CI HCl
1015	Cabot Safety	Rp,Fm,FF	1		
1023	Racal	PAPR,HH	3	HRA	SO2/CI HCl
1024	Racal	PAPR,HH	3	HRA	SO2/CI HCl
1025	Racal	PAPR,HH	3	HRA	SO2/CI HCl

1026	Racal	PAPR,HH	3	HRA	SO2/CI HCl
1027	Racal	PAPR,HH	3	HRA	SO2/CI HCl
1030	Masprot	Rp,Fm,ON	2	DM PLE	
1033	Cabot Safety	PAPR,FF	2		
1035	Hornell Speedglas	PAPR,HH	3	HRA	Pest
1036	Racal	PAPR,FF	1		
1037	Racal	PAPR,FF	1		SO2/CI HCl
1038	Willson	Su,ON	2		
1039	Willson	Su,ON	2	DM	Pest/PLE
1042	Willson	Su,ON	2		SO2/CI HCl/CLO2
1043	Willson	Su,ON	2	DM	SO2/CI HCl/CLO2
1047	Survivair	PAPR,FF	3		
1048	Willson	Su,ON	2	HA	
1050	Willson	Su,ON	2	HA	SO2/CI HCl/CLO2
1052	Survivair	PAPR,FF	3	HRA	Pest
1053	Survivair	PAPR,FF	3	HRA	SO2/CI HCl/Pest

1054	MSA	PAPR,FF	2		SO2/HCl Cl2/ClO2
1056	MSA	PAPR,FF	2	HA	SO2/HCl Cl2/ClO2 Pest
1057	MSA	PAPR,FF	2	HA	SO2/HCl Cl2/ClO2 Pest
NOT APPROVED FOR RADIONUCLIDES					
1062	3M	Rp,Fm,ON	2		
1064	3M	Rp,Fm,ON	2		SO2/Cl HCl/HF
1065	3M	Rp,Fm,ON	2		CH2-O
1067	3M	Rp,Fm,ON	2	DM	Pest/PLE
1069	3M	Rp,Fm,ON	2	DM	SO2/Cl HCl/HF
1071	3M	Rp,Fm,ON	2	DM	CH2-O
1072	3M	Rp,Fm,ON	2	HRA	Pest/PLE
1074	3M	Rp,Fm,ON	2	HRA	SO2/Cl HCl/HF
1076	3M	Rp,Fm,ON	2	HRA	CH2-O
1078	MSA	Rp,Fm,FF	2	DM	ClO2/SO2 Cl/HCl H2S
1080	MSA	Rp,Fm,FF	2	DM	PLE
1081	MSA	Rp,Fm,FF	2	DM	PLE/Pest
1082	MSA	Rp,Fm,FF	2	HA	

1083	MSA	Rp,Fm,FF	2	DM	
1084	MSA	Rp,Fm,FF	2	HA	PLE/Pest
1086	MSA	Rp,Fm,FF	2	DM	SO2/Cl HCl/CLO2 H2S
1087	MSA	Rp,Fm,FF	2	DFMR	SO2/Cl HCl/CLO2 H2S/Pest
1088	MSA	Rp,Fm,FF	2	HA	SO2/Cl HCl/CLO2 H2S/Pest
1089	MSA	Rp,Fm,FF	2	DM	
1093	MSA	Rp,Fm,FF	2	HA	SO2/Cl HCl/CLO2 H2S/Pest
NOT APPROVED FOR RADIONUCLIDES					
1095	North	Su,ON	2		
1097	North	Su,ON	2		SO2/Cl HCl
1099	North	Su,ON	2	DM	
1101	North	Su,ON	2	DM	SO2/Cl HCl
1103	North	Su,ON	2		PLE
1105	North	Su,ON	2	HR	PLE/Pest
1107	North	Su,ON	2	HR	SO2/Cl HCl
1109	North	Su,ON	2	DFM	

1111	North	Su,ON	2	DFM	SO2/Cl HCl
1113	North	Su,ON	2	DM	PLE/Pest
1114	Racal	PAPR,HH	3	HRA	SO2/HF
1115	Racal	PAPR,HH	3	HRA	SO2/HF
1122	Racal	Rp,Fm,FF	1		
1123	Racal	Rp,Fm,FF	1	HRA	Pest
1124	Racal	Rp,Fm,FF	1		SO2/Cl/ HCl
1125	Racal	Rp,Fm,FF	1	HRA	SO2/Cl/ HCl
1128	North	Rp,Fm,FF	2	HRA	PLE/Pest
1129	North	Rp,Fm,FF	2		PLE
1130	Survivair	Su,ON	2		
1132	Survivair	Su,ON	2		SO2/Cl/ HCl/ClO2
1134	Survivair	Su,ON	2	DM	PLE
1138	Willson	Rp,Fm,ON	2		
1140	Willson	Rp,Fm,ON	2		SO2/Cl/ HCl/ClO2/ HF/H2S
1142	Willson	Rp,Fm,ON	2		

1144	Willson	Rp,Fm,ON	2		SO2/Cl/ ClO2/HCl/ H2S
1145	Willson	Rp,Fm,ON	2	DM	
1147	Willson	Rp,Fm,ON	2	DM	SO2/Cl/ ClO2/HCl/ HF/H2S
1149	Willson	Rp,Fm,ON	2	DM	Pest/PLE
1150	Willson	Rp,Fm,ON	2	DFM	Pest/PLE
1152	Willson	Rp,Fm,ON	2	DFM	SO2/Cl/ ClO2/HCl/ HF/H2S
1154	Willson	Rp,Fm,ON	2	HA	
1156	Willson	Rp,Fm,ON	2	HA	SO2/Cl/ ClO2/HCl/ H2S
1157	MSA	Rp,Fm,FF	2	DM	
1159	MSA	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/H2S/ ClO2
1161	MSA	Rp,Fm,FF	2	DM	
1162	MSA	Rp,Fm,FF	2	HA	Pest/PLE
1164	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/H2S/ ClO2/Pest
1165	MSA	Rp,Fm,FF	2	DFMR	SO2/Cl/ HCl/H2S/
1167	MSA	Rp,Fm,FF	2	DM	Pest/PLE

1168	MSA	Rp,Fm,FF	2	HA	
1169	MSA	Rp,Fm,FF	2	DM	Cl/HCl/ SO2/ClO2/ H2S
1170	MSA	Rp,Fm,FF	2	DM	CH20/SO2/
1171	MSA	Rp,Fm,FF	2	HA	CH20/SO2/
1172	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/ClO2/ H2S/Pest
NOT APPROVED FOR RADIONUCLIDES					
1174	MSA	Rp,Fm,FF	2	DM	PLE
1178	MSA DE CHILI	Rp,Fm,ON	2		SO2/Cl/ HCl/ClO2/ H2S
1180	MSA DE CHILI	Rp,Fm,ON	2	DFMR	SO2/Cl/ HCl/ClO2/ H2S
1181	Racal	PAPR,HH	3		
1182	Racal	PAPR,HH	3	HRA	SO2/Cl/ HCl
1183	Racal	PAPR,HH	3		SO2/Cl/ HCl
1184	Racal	PAPR,HH	3	HRA	Pest
1189	MSA	Rp,Fm,FF	2	DM	
1191	MSA	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/ClO2/ H2S
1193	MSA	Rp,Fm,FF	2	DM	

1194	MSA	Rp,Fm,FF	2	HA	Pest/PLE
1196	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/ClO2/ H2S/Pest
1197	MSA	Rp,Fm,FF	2	DFMR	SO2/Cl/ HCl/ClO2/ H2S/Pest
1199	MSA	Rp,Fm,FF	2	DM	Pest/PLE
1200	MSA	Rp,Fm,FF	2	HA	
1201	MSA	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/ClO2/ H2S
1202	MSA	Rp,Fm,FF	2	DM	CH2-O/SO2/
1203	MSA	Rp,Fm,FF	2	HA	CH2-O/SO2/
1204	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/ClO2/ H2S/Pest NOT APPROVED FOR RADIONUCLIDES
1206	MSA	Rp,Fm,FF	2	DM	PLE
1207	Racal	PAPR,FF	3	HRA	HF/SO2
1208	Racal	PAPR,HH	3	HRA	HF/SO2
1209	Racal	PAPR,HH	3	HRA	HF/SO2
1210	Racal	PAPR,ON	3	HRA	HF/SO2
1211	Racal	PAPR,HH	3	HRA	HF/SO2
1212	Racal	PAPR,HH	3	HRA	HF/SO2

1215	Cabot Safety	PAPR,ON	2		
1216	Racal	PAPR,FF	1	HRA	SO2/Cl/HCl
1219	National Draeger	Rp,Fm,FF	1	DM	SO2/Cl/HCl
1222	National Draeger	Rp,Fm,FF	1	DM	
1223	Moldex	Rp,Fm,ON	2		
1225	Moldex	Rp,Fm,Su,ON	2		HF/SO2/Cl/ HCl/CLO2
1226	Cabot Safety	Rp,Fm,ON	2		
1227	Cabot Safety	Rp,Fm,ON	2	DM	
1228	Cabot Safety	Rp,Fm,ON	2	DFMR	Pest/PLE
1229	Cabot Safety	Rp,Fm,ON	2	DM	PLE
1230	Cabot Safety	Rp,Fm,ON	2	HRA	Pest/PLE
1235	Cabot Safety	Rp,Fm,ON	2		SO2/Cl/ HCl/CLO2
1236	Cabot Safety	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/CLO2
1237	Cabot Safety	Rp,Fm,ON	2	DFMR	SO2/Cl/ HCl/CLO2/Pest
1238	Cabot Safety	Rp,Fm,ON	2	HRA	SO2/Cl/ HCl/CLO2/Pest

1246	Cabot Safety	Rp,Fm,ON	2	DFM	Pest
1247	Cabot Safety	Rp,Fm,ON	2	DM	PLE
1248	Cabot Safety	Rp,Fm,ON	2	DFMR	SO2/Cl/ HCl/CLO2 Pest
1249	Cabot Safety	Rp,Fm,ON	2	DM	
1250	MSA	PAPR,ON	2		SO2/Cl/HCl/ CLO2
1252	MSA	PAPR,ON	2	HA	SO2/Cl/ HCl/CLO2/ Pest
1253	MSA	PAPR,ON	2	HA	SO2/Cl/ HCl/CLO2/ Pest NOT APPROVED FOR RADIONUCLIDES
1256	MSA	PAPR,ON	2		
1257	MSA	PAPR,ON	2	HA	Pest
1258	MSA	PAPR,ON	2	HA	Pest NOT APPROVED FOR RADIONUCLIDES
1262	MSA	PAPR,FF	2		
1263	MSA	PAPR,FF	2	HA	Pest
1264	MSA	PAPR,FF	2	HA	Pest NOT APPROVED FOR RADIONUCLIDES
1269	MSA	PAPR,FF	2	HA	
1270	Survivair	Su,ON	2	DM	

1272	Survivair	Su,ON	2	DM	SO2/Cl/ HCl/CLO2/ H2S
1274	Survivair	Su,ON	2	DFM	Pest
1275	Survivair	Su,ON	2	DFM	SO2/Cl/ HCl/CLO2/ H2S
1276	MSA	Rp,Fm,ON	2		
1278	MSA	Rp,Fm,ON	2		SO2/Cl/ HCl/H2S/ CLO2
1280	MSA	Rp,Fm,ON	2	HA	PLE/Pest
1282	MSA	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/H2S/ CLO2/Pest NOT APPROVED FOR RADIONUCLIDES
1282	Critical Services	Su,ON	2	HA	SO2/H2S/ HCl/CLO2/ OV/Pest NOT APPROVED FOR RADIONUCIDLES
1283	MSA	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/H2S/ CLO2 Pest
1286	Hornell Speedglas	PAPR,HH	3	HRA	Pest
1288	North	Su,ON	2		CH2-O
1289	North	Su,ON	2	DM	CH2-O
1290	North	Su,ON	2	HR	CH2-O
1291	North	Su,ON	2	DFM	CH2-O

1292	North	Rp,Fm,ON	2		CH2-O
1293	North	Rp,Fm,ON	2	DM	CH2-O
1294	North	Rp,Fm,ON	2	HRA	CH2-O
1295	North	Rp,Fm,ON	2	DFM	CH2-O
1296	North	Rp,Bm,ON	2		CH2-O
1297	North	Rp,Bm,ON	2	DM	CH2-O
1298	North	Rp,Bm,ON	2	HRA	CH2-O
1299	North	Rp,Bm,ON	2	DFM	CH2-O
1300	North	Rp,Fm,FF	2		CH2-O
1301	North	Rp,Fm,FF	2	DM	CH2-O
1302	North	Rp,Fm,FF	2	HRA	CH2-O
1303	North	Rp,Fm,FF	2	DFM	CH2-O
1305	National Draeger	Rp,Fm,ON	1		
1307	National Draeger	Rp,Fm,ON	1		SO2/CV HCL
1308	National Draeger	Rp,Fm,ON	1	HA	
1310	National Draeger	Rp,Fm,ON	1	HA	SO2/CV HCL
1318	3M	Su,ON	2	DM	Pest/PLE
1319	3M	Rp,Fm,ON	2	DM	Pest/PLE

1322	3M	Su,ON	2	DM	SO2/CL/ HCL/HF
1323	3M	Rp,Fm,ON	2	DM	SO2/CL/ HCL/HF
1326	3M	Su,ON	2	DM	CH2-O
1327	3M	Rp,Fm,ON	2	DM	CH2-O
1328	3M	Su,ON	2	HR	Pest/PLE NOT APPROVED FOR RADIONUCLIDES
1329	3M	Rp,Fm,ON	2	HR	Pest/PLE NOT APPROVED FOR RADIONUCLIDES
1332	3M	Su,ON	2	HR	SO2/CL/HCL/ HF NOT APPROVED FOR RADIONUCLIDES
1333	3M	Rp,Fm,ON	2	HR	SO2/CL/HCL/ HF NOT APPROVED FOR RADIONUCLIDES
1336	3M	Su,ON	2	HR	CH2-O NOT APPROVED FOR RADIONUCLIDES
1337	3M	Rp,Fm,ON	2	HR	CH2-O NOT APPROVED FOR RADIONUCLIDES
1338	Moldex-Metric	Rp,Fm,ON	2	DM	Pest/PLE
1340	Moldex-Metric	Rp,Fm,ON	2	DM	SO2/CL/ HCL/CLO2
1341	Moldex-Metric	Rp,Fm,ON	2	DM	
1343	Moldex-Metric	Rp,Fm,ON	2	DM	CLO2/HF/ SO2/CL/HCI
1345	Survivair	PAPR,ON	3		

1346	Survivair	PAPR,ON	3	HRA	Pest
1347	Survivair	PAPR,ON	3	HRA	SO2/Cl/HCl
1358	Cabot	Rp,Fm,FF	2		
1359	Cabot	Rp,Fm,FF	2	DM	PLE
1360	Cabot	Rp,Fm,FF	2		SO2/Cl/ HCl/CLO2
1361	Cabot	Rp,Fm,FF	2	DM	PLE
1362	Cabot	Rp,Fm,FF	2	HRA	SO2/Cl/Pest HCl/CLO2
1363	MSA	Rp,Fm,ON	2	DM	PLE
1366	MSA	Rp,Fm,ON	2		SO2/Cl/ HCl/H2S/ CH2-O
1367	MSA	Rp,Fm,ON	2	HRA	SO2/Cl/ HCl/H2S/ CH2-O
1370	MSA	Rp,Fm,FF	2		
1373	MSA	Rp,Fm,FF	2	HRA	Pest/PLE
1378	MSA	Rp,Fm,FF	2	HRA	
1379	MSA	Rp,Fm,FF	2		SO2/Cl/ HCl/CH2-O
1380	MSA	Rp,Fm,FF	2	HRA	SO2/Cl/ HCl/CH2-O
1381	MSA	Rp,Fm,FF	2	DM	PLE

1382	MSA	Rp,Fm,FF	2		SO2/Cl/ HCl/H2S/ ClO2/
1383	MSA	Rp,Fm,FF	2	HRA	SO2/Cl/ HCl/H2S/ ClO2/Pest
1385	Cabot	Rp,Fm,FF	2	DM	
1386	Cabot	Rp,Fm,FF	2	DFMR	Pest/PLE
1387	Cabot	Rp,Fm,FF	2	HRA	Pest/PLE
1392	Cabot	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/ClO2
1393	Cabot	Rp,Fm,FF	2	DFMR	SO2/Cl/Pest HCl/ClO2
1398	Cabot	Rp,Fm,FF	2	DM	
1399	Cabot	Rp,Fm,FF	2	DFM	Pest
1403	Cabot	Rp,Fm,FF	2	DFM	SO2/Cl/Pest HCl/ClO2

7. Paints, Lacquers and Enamels

Approval

Approved as respiratory protection against (1) mists of paints, lacquers and enamels; (2) organic vapors.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges and filters or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
54	WGM	Rp,Fm,ON	2	DM	OV/Pest
75	North	Rp,Fm,ON	2		OV
75	Acme	Rp,Fm,ON	2		OV
79	MSA	Rp,Fm,Bm,ON	2	DM	OV/Pest
80	MSA	Rp,Fm,Bm,ON	2	DM	OV
87	Binks	Rp,Fm,ON	2	DM	OV
90	Glendale	Rp,Fm,ON	2		OV
92	Cabot Safety	Rp,Fm,ON	1	DM	OV
93	Cabot Safety	Rp,Fm,ON	1	DM	OV
94	Cabot Safety	Rp,Fm,ON	2	DM	OV
96	DeVilbiss	Rp,Fm,ON	2	DM	OV
97	Cabot Safety	Rp,Fm,ON	2	DM	OV
100	Pulmosan	Rp,Fm,ON	1		OV
100	Fibre Metal	Rp,Fm,ON	1		OV
100	Shoplyne	Rp,Fm,ON	1		OV
117	Scott	Rp,Fm,ON	2	DFMR	OV/Pest
123	3M	Su,ON	1		OV/Pest

124	Protech	Rp,Fm,ON	2		OV
124	Eastern	Rp,Fm,ON	2		OV
124	Sellstrom	Rp,Fm,ON	2		OV
124	Safe-Tex	Rp,Fm,ON	2		OV
125	US Safety	Rp,Fm,ON	2		OV
126	Cesco	Rp,Fm,ON	2		OV
127	Stewart-Warner	Rp,Fm,ON	2		OV
128	Northcott	Rp,Fm,ON	2		OV
133	Willson	Rp,Fm,FF	2	DM	OV/Pest
148	MSA	Rp,Fm,FF	2	DM	OV/Pest
149	MSA	Rp,Fm,FF	2	DM	OV
155	MSA	Rp,Fm,FF	2	HA	OV/Pest
161	MSA	Rp,Fm,Bm,ON	2	HA	OV/Pest
175	North	Rp,Bm,ON	2		OV
188	North	Rp,Fm,FF	2		OV
201	MSA	Rp,Fm,ON	2	DM	OV
204	North	Rp,Fm,ON	2	HRA	OV/Pest
205	North	Rp,Bm,ON	2	HRA	OV/Pest
206	North	Rp,Fm,FF	2	HRA	OV/Pest

224	Scott	Rp,Fm,FF	2	DFMR	OV/Pest
239	Cabot Safety	Rp,Fm,FF	2		OV
240	Cabot Safety	Rp,Fm,FF	2	DM	OV
258	Willson	Rp,Fm,ON	2	DM	OV
259	Willson	Rp,Fm,FF	2	DM	OV
271	Cesco	Rp,Fm,FF	2		OV
272	US Safety	Rp,Fm,FF	2		OV
278	DeVilbiss	Rp,Fm,ON	1	DM	OV
285	MSA	Rp,Fm,FF	2	DM	OV
286	MSA	Rp,Bm,ON	2	DM	OV
321	Survivair	Rp,Fm,ON	2	DM	OV
333	Cabot Safety	Rp,Fm,ON	2	DM	OV
334	Cabot Safety	Rp,Fm,FF	2	DM	OV
335	DeVilbiss	Rp,Fm,ON	2	DM	OV
336	US Safety	Rp,Fm,ON	2	DFMR	OV/Pest
336	Lab Safety Supply	Rp,Fm,ON	2	DFMR	OV/Pest
337	Cesco	Rp,Fm,ON	2	DFMR	OV/Pest
338	US Safety	Rp,Fm,FF	2	DFMR	OV/Pest

338	Lab Safety Supply	Rp,Fm,FF	2	DFMR	OV/Pest
348	Cesco	Rp,Fm,FF	2	DFM	OV/Pest
354	North	Su,ON	1	DM	OV/Pest
373	Stewart Warner	Rp,Fm,ON	2	DFMR	OV/Pest
374	Willson	Rp,Bm,ON	2	DM	OV/Pest
375	Willson	Rp,Bm,FF	2	DM	OV/Pest
376	Willson	Rp,Bm,ON	2	DM	OV
377	Willson	Rp,Bm,FF	2	DM	OV
392	Northcott	Rp,Fm,ON	2	DFMR	OV/Pest
406	Glendale	Rp,Fm,FF	2		OV
413	Cabot Safety	Rp,Fm,ON	2	HRA	OV/Pest
414	Cabot Safety	Rp,Fm,FF	2	HRA	OV/Pest
426	Cabot Safety	Rp,Fm,ON	2	DMZ	OV
427	Cabot Safety	Rp,Fm,FF	2	DMZ	OV
428	DeVilbiss	Rp,Fm,ON	2	DMZ	OV
436	3M	Rp,Fm,ON	2	DM	OV
455	Survivair	Rp,Fm,FF	2	DM	OV

464	MSA	Rp,Bm,ON	2	DM	OV/Pest
465	MSA	Rp,Bm,ON	2	HA	OV/Pest
473	MSA	Rp,Bm,ON	2	DM	OV
474	MSA	Rp,Bm,ON	2	DM	OV
490	Cabot Safety	Rp,Fm,ON	2	DM	OV
491	Cabot Safety	Rp,Fm,FF	2	DM	OV
494	Pulmosan	Rp,Fm,FF	1		OV
510	MSA	Rp,Fm,ON	1	DM	OV
523	Scott REPLACED BY TC-23C-783	Rp,Fm,ON	2	HRA	OV/Pest
524	Scott	Rp,Fm,FF	2	HRA	OV/Pest
540	Safety Supply	Rp,Fm,ON	2		OV
541	Safety Supply	Rp,Fm,FF	2		OV
554	Pulmosan	Rp,Fm,ON	2	DM	OV
571	Willson	Rp,Fm,ON	2	DM	OV/Pest
572	Willson	Rp,Fm,ON	2	DM	OV/Pest
573	Willson	Rp,Fm,ON	2	DM	OV
574	Willson	Rp,Fm,ON	2	DM	OV
616	Shoplyne	Rp,Fm,ON	2	DM	OV

668	Protech	Rp,Fm,FF	2		OV
668	Eastern	Rp,Fm,FF	2		OV
668	Sellstrom	Rp,Fm,FF	2		OV
675	Binks	Rp,Fm,ON	2	HA	OV
677	Cabot Safety	Rp,Fm,ON	1	DM	OV
691	3M	Rp,Fm,FF	2	DM	OV
729	Willson	Rp,Fm,ON	2	DFM	OV/Pest
730	Willson	Rp,Fm,FF	2	DFM	OV/Pest
731	Willson	Rp,Fm,ON	2	DFM	OV/Pest
732	Willson	Rp,Bm,ON	2	DFM	OV/Pest
733	Willson	Rp,Bm,FF	2	DFM	OV/Pest
734	Willson	Rp,Bm,ON	2	DFM	OV/Pest
747	Willson	Rp,Fm,FF	2	DM	OV/Pest
751	Willson	Rp,Fm,ON	2	DM	OV/Pest
755	Willson	Rp,Fm,ON	1	DM	OV/Pest
782	Scott	Rp,Fm,ON	2	DFMR	OV/Pest
783	Scott	Rp,Fm,ON	2	HRA	OV/Pest
791	Willson	Rp,Fm,ON	2	DFMR	OV/Pest
792	Willson	Rp,Fm,FF	2	DFMR	OV/Pest

793	Cabot Safety	Rp,Fm,FF	2	HRA	OV/Pest
796	Cabot Safety	Rp,Fm,FF	2	DM	OV
807	Cabot Safety	Rp,Fm,FF	2	DM	OV
816	Glendale	Rp,Fm,ON	2		OV
826	Willson	Rp,Fm,ON	1	DFM	OV/Pest
830	MSA	Rp,Fm,FF	2	DM	OV
838	MSA	Rp,Fm,FF	2	HA	OV/Pest
841	MSA	Rp,Fm,FF	2	HA	OV/Pest
846	MSA	Rp,Fm,FF	2	DM	OV
847	MSA	Rp,Fm,FF	2	DM	OV/Pest
850	MSA	Rp,Fm,FF	2	HA	OV/Pest
860	3M	Su,ON	2	DM	OV/Pest
863	Devilbiss	Rp,Fm,ON	2	DM	OV
870	Binks	Rp,Fm,FF	2	DM	OV
871	Binks	Rp,Fm,FF	2	A	OV
875	DeVilbiss	Rp,Fm,FF	2	DM	OV
884	3M	Rp,Fm,FF	2	DM	OV
886	3M	Rp,Fm,FF	2	HRA	OV

899	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/Pest
900	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/Pest
901	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/Pest
944	MSA	Rp,Fm,FF	2	DM	OV
950	MSA	Rp,Fm,FF	2	HA	OV/Pest
955	MSA	Rp,Fm,FF	2	DM	OV/Pest
979	Cabot Safety	Rp,Fm,FF	2	DM	OV
980	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/Pest
997	Cabot Safety	Rp,Fm,FF	2	DM	OV
999	Cabot Safety	Rp,Fm,FF	2	HRA	OV/Pest
1009	Masprot	Rp,Fm,ON	2	HA	OV/Pest
1013	3M	Su,ON	2	HRA	OV/Pest
1030	Masprot	Rp,Fm,ON	2	DM	OV
1039	Willson	Su,ON	2	DM	Pest/OV
1067	3M	Rp,Fm,ON	2	DM	OV/Pest
1072	3M	Rp,Fm,ON	2	HRA	OV/Pest
1080	MSA	Rp,Fm,FF	2	DM	OV

1081	MSA	Rp,Fm,FF	2	DM	OV/Pest
1084	MSA	Rp,Fm,FF	2	HA	OV/Pest
1103	North	Su,ON	2		OV
1105	North	Su,ON	2	HR	OV/Pest
1113	North	Su,ON	2	DM	OV/Pest
1128	North	Rp,Fm,FF	2	HRA	OV/Pest
1129	North	Rp,Fm,FF	2		OV
1134	Survivair	Su,ON	2	DM	OV
1149	Willson	Rp,Fm,ON	2	DM	OV/Pest
1150	Willson	Rp,Fm,ON	2	DFM	OV/Pest
1162	MSA	Rp,Fm,FF	2	HA	OV/Pest
1167	MSA	Rp,Fm,FF	2	DM	OV/Pest
1174	MSA	Rp,Fm,FF	2	DM	OV
1194	MSA	Rp,Fm,FF	2	HA	Pest/OV
1199	MSA	Rp,Fm,FF	2	DM	OV/Pest
1206	MSA	Rp,Fm,FF	2	DM	OV
1228	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/Pest
1229	Cabot Safety	Rp,Fm,ON	2	DM	OV

1230	Cabot Safety	Rp,Fm,ON	2	HRA	OV/Pest
1247	Cabot Safety	Rp,Fm,ON	2	DM	OV
1280	MSA	Rp,Fm,ON	2	HA	Pest/OV
1318	3M	Su,ON	2	DM	Pest/OV
1319	3M	Rp,Fm,ON	2	DM	Pest/OV
1328	3M	Su,ON	2	HR	Pest/OV NOT APPROVED FOR RADIONUCLIDES
1329	3M	Rp,Fm,ON	2	HR	Pest/OV NOT APPROVED FOR RADIONUCLIDES
1338	Moldex	Rp,Fm,ON	2	DM	Pest/OV
1359	Cabot	Rp,Fm,FF	2	DM	OV
1361	Cabot	Rp,Fm,FF	2	DM	OV
1363	MSA	Rp,Fm,ON	2	DM	OV
1373	MSA	Rp,Fm,FF	2	HA	OV/Pest
1381	MSA	Rp,Fm,FF	2	DM	OV
1386	Cabot	Rp,Fm,FF	2	DFMR	OV/Pest
1387	Cabot	Rp,Fm,FF	2	HRA	OV/Pest

8. Pesticides

Approval

Approved as respiratory protection against pesticides.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

Not approved for fumigants.

Refer to pesticide label for limitations on respirator use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
54	WGM	Rp,Fm,ON	2	DM	OV/PLE
74	North	Rp,Fm,ON	2		OV
78	3M	PAPR,HH	1		
79	MSA	Rp,Fm,Bm,ON	2	DM	OV/PLE
106	Cabot Safety	Rp,Fm,ON	2	DFM	OV
110	Pulmosan	Rp,Fm,ON	1		
110	Fibre Metal	Rp,Fm,ON	1		
110	Shoplyne	Rp,Fm,ON	1		
117	Scott	Rp,Fm,ON	2	DFM	OV/PLE
123	3M	Su,ON	1		OV
133	Willson	Rp,Fm,FF	2	DM	OV/PLE
148	MSA	Rp,Fm,FF	2	DM	OV/PLE
153	MSA	Rp,Fm,FF	2	HA	OV/SO2/ Cl/HCl ClO2/H2S
154	MSA	Rp,Fm,FF	2	DFMR	OV/SO2/ Cl/HCl ClO2/H2S
155	MSA	Rp,Fm,FF	2	HA	OV/PLE
159	MSA	Rp,Fm,Bm,ON	2	HA	OV/SO2/ Cl/HCl ClO2/H2S

160	MSA	Rp,Fm,Bm,ON	2	DFMR	OV/SO2/ Cl/HCl/ ClO2/H2S
161	MSA	Rp,Fm,Bm,ON	2	HA	OV/PLE
178	North	Rp,Bm, ON	2		OV
190	North	Rp,Fm,FF	2		OV
197	Glendale	Rp,Fm,ON	2		
198	US Safety	Rp,Fm,ON	2		OV
199	Cesco	Rp,Fm,ON	2		OV
202	Protech	Rp,Fm,ON	2	DM	OV
202	Eastern	Rp,Fm,ON	2	DM	OV
202	Sellstrom	Rp,Fm,ON	2	DM	OV
204	North	Rp,Fm,ON	2	HRA	OV/PLE
205	North	Rp,Bm,ON	2	HRA	OV/PLE
206	North	Rp,Fm,FF	2	HRA	OV/PLE
223	Scott	Rp,Fm,ON	2		
224	Scott	Rp,Fm,FF	2	DFMR	OV/PLE
238	Cabot Safety	Rp,Fm,FF	2	DFM	OV
273	Cesco	Rp,Fm,FF	2		
274	US Safety	Rp,Fm,FF	2		

281	Cabot Safety	Rp,Fm,ON	2	DFM	SO2/HCl/OV Cl/CLO2
282	Cabot Safety	Rp,Fm,FF	2	DFM	SO2/HCl/Cl OV/CLO2
323	Survivair	Rp,Fm,ON	2	DFMR	OV
336	US Safety	Rp,Fm,ON	2	DFMR	OV/PLE
336	Lab Safety Supply	Rp,Fm,ON	2	DFMR	OV/PLE
337	Cesco	Rp,Fm,ON	2	DFMR	OV/PLE
338	US Safety	Rp,Fm,FF	2	DFMR	OV/PLE
338	Lab Safety Supply	Rp,Fm,FF	2	DFMR	OV/PLE
348	Cesco	Rp,Fm,FF	2	DFM	OV/PLE
354	North	Su,ON	1	DM	OV/PLE
373	Stewart Warner	Rp,Fm,ON	2	DFMR	OV/PLE
374	Willson	Rp,Bm,ON	2	DM	OV/PLE
375	Willson	Rp,Bm,FF	2	DM	OV/PLE
392	Northcott	Rp,Fm,ON	2	DFMR	OV/PLE
409	Glendale	Rp,Fm,FF	2		
413	Cabot Safety	Rp,Fm,ON	2	HRA	OV/PLE
414	Cabot Safety	Rp,Fm,FF	2	HRA	OV/PLE

417	Cabot Safety	Rp,Fm,ON	2	HRA	OV/CLO2/ Cl/HCl SO2
418	Cabot Safety	Rp,Fm,FF	2	HRA	OV/CLO2/ Cl2/HCl/SO2
439	3M	Rp,Fm,ON	2		
450	Survivair	Rp,Fm,ON	2	HRA	SO2/HCl Cl/OV
451	Survivair	Rp,Fm,FF	2	HRA	SO2/HCl Cl/OV
452	Survivair	Rp,Fm,ON	2	HRA	OV
453	Survivair	Rp,Fm,FF	2	HRA	OV
456	Survivair	Rp,Fm,FF	2	DFMR	OV
464	MSA	Rp,Bm,ON	2	DM	OV
465	MSA	Rp,Bm,ON	2	HA	OV/PLE
466	MSA	Rp,Bm,ON	2	HA	OV/SO2/ Cl/HCl/ CLO2/H2S
467	MSA	Rp,Bm,ON	2	DFMR	OV/SO2/ Cl/HCl/ CLO2/H2S
482	Racal	PAPR,HH	3	HRA	OV
483	Racal	PAPR,FF	3	HRA	OV
484	Racal	PAPR,HH	3	HRA	OV
485	Racal	PAPR,HH	3	HRA	OV

493	Pulmosan	Rp,Fm,FF	1		
523	Scott REPLACED BY TC-23C-783	Rp,Fm,ON	2	HRA	OV/PLE
524	Scott	Rp,Fm,FF	2	HRA	OV/PLE
530	Survivair	Rp,Fm,ON	2	DFMR	OV
531	Survivair	Rp,Fm,FF	2	DFMR	OV
546	Safety Supply	Rp,Fm,ON	2		
547	Safety Supply	Rp,Fm,FF	2		
571	Willson	Rp,Fm,ON	2	DM	OV/PLE
572	Willson	Rp,Fm,ON	2	DM	OV/PLE
585	Cabot Safety	Rp,Fm,ON	2	DFM	OV
586	Cabot Safety	Rp,Fm,ON	2	DFM	OV
587	Cabot Safety	Rp,Fm,ON	2	DFM	SO2/HCl/Cl OV/CLO2
588	Cabot Safety	Rp,Fm,FF	2	DFM	SO2/HCl/Cl OV/CLO2
602	Racal	PAPR,HH	3	HRA	OV
611	Racal	PAPR,ON	3	HRA	OV
632	Racal	PAPR,HH	3	HRA	OV
669	Protech	Rp,Fm,FF	2	DM	OV

669	Eastern	Rp,Fm,FF	2	DM	OV
669	Sellstrom	Rp,Fm,FF	2	DM	OV
682	Kasco	PAPR,HH	3	HA	
687	3M	Rp,Fm,FF	2		
729	Willson	Rp,Fm,ON	2	DFM	OV/PLE
730	Willson	Rp,Fm,FF	2	DFM	OV/PLE
731	Willson	Rp,Fm,ON	2	DFM	OV/PLE
732	Willson	Rp,Bm,ON	2	DFM	OV/PLE
733	Willson	Rp,Bm,FF	2	DFM	OV/PLE
734	Willson	Rp,Bm,ON	2	DFM	OV/PLE
747	Willson	Rp,Fm,FF	2	DM	OV/PLE
751	Willson	Rp,Fm,ON	2	DM	OV/PLE
755	Willson	Rp,Fm,ON	1	DM	OV/PLE
767	Kasco	PAPR,HH	3		
782	Scott	Rp,Fm,ON	2	DFMR	OV/PLE
783	Scott	Rp,Fm,ON	2	HRA	OV/PLE
791	Willson	Rp,Fm,ON	2	PLE	OV
792	Willson	Rp,Fm,FF	2	PLE	OV
793	Cabot Safety	Rp,Fm,FF	2	HRA	OV/PLE

794	Cabot Safety	Rp,Fm,FF	2	HRA	SO2/HCl Cl2/CLO2 OV
802	Cabot Safety	Rp,Fm,FF	2	DFM	OV
812	Cabot Safety	Rp,Fm,FF	2	DFM	Cl/SO2/HCl CLO2
825	Glendale	Rp,Fm,ON	2		
826	Willson	Rp,Fm,ON	1	DFM	OV/PLE
838	MSA	Rp,Fm,FF	2	HA	OV/PLE
839	MSA	Rp,Fm,FF	2	HA	OV/Cl/ H2S/CLO2/ SO2/HCl
841	MSA	Rp,Fm,FF	2	HA	OV/PLE
847	MSA	Rp,Fm,FF	2	DM	OV/PLE
850	MSA	Rp,Fm,FF	2	HA	OV/PLE
853	MSA	Rp,Fm,FF	2	DFMR	OV/H2S/ CLO2/SO2/ Cl/HCl
854	MSA	Rp,Fm,FF	2	HRA	OV/H2S/ CLO2/SO2/ Cl/HCl
857	3M	Su,ON	1		OV
860	3M	Su,ON	2	DM	OV/PLE
880	3M	Rp,Fm,FF	2		
893	Racal	PAPR,HH		HRA	OV

899	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/PLE
900	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/PLE
901	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/PLE
905	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/Cl/ HCl/ClO2/ SO2
906	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/Cl/ HCl/ClO2/ SO2
907	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/Cl/ HCl/ClO2/ SO2
914	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/Cl/ HCl/ClO2/ SO2
915	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/Cl/ HCl/ClO2/ SO2
929	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/H2S/ ClO2/SO2/ Cl/HCl
930	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/H2S/ ClO2/SO2/ Cl/HCl
931	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/H2S/ ClO2/SO2/ Cl/HCl
932	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/H2S/ ClO2/SO2/ Cl/HCl

933	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/H2S/ CL02/SO2/ Cl/HCl
934	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/H2S/ CL02/SO2/ Cl/HCl
950	MSA	Rp,FF,Fm	2	HA	OV/PLE
952	MSA	Rp,Fm,FF	2	HA	H2S/CL02 OV/SO2/ Cl/HCl
953	MSA	Rp,Fm,FF	2	DFMR	H2S/CL02/ OV/SO2/ Cl/HCl
955	MSA	Rp,FF,Fm	2	DM	OV/PLE
961	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	H2S/CL02/ OV/SO2/ Cl/HCl
980	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/PLE
986	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/SO2 Cl/HCl CL02
991	Cabot Safety	Rp,Fm,FF	2	DFM	OV
996	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/SO2 Cl/HCl CL02
998	Cabot Safety	Rp,Fm,FF	2	DFM	OV/SO2 Cl/HCl CL02
999	Cabot Safety	Rp,Fm,FF	2	HRA	OV/PLE

1001	Cabot Safety	Rp,Fm,FF	2	HRA	OV/SO2 Cl/HCl CL02
1003	Spring Protezione s.r.l.	PAPR,HH	3		
1009	Masprot	Rp,Fm,ON	2	HA	OV/PLE
1013	3M	Su,ON	2	HRA	OV/PLE
1035	Hornell Speedglas	PAPR,HH	3	HRA	OV
1039	Willson	Su,ON	2	DM	PLE/OV
1052	Survivair	PAPR,FF	3	HRA	OV
1053	Survivair	PAPR,FF	3	HRA	OV/SO2/Cl HCl
1056	MSA	PAPR,FF	2	HA	CL02/OV/ SO2/Cl/ HCl
1057	MSA	PAPR,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	CL02/OV/ SO2/Cl/ HCl
1067	3M	Rp,Fm,ON	2	DM	OV/PLE
1072	3M	Rp,Fm,ON	2	HRA	OV/PLE
1081	MSA	Rp,Fm,FF	2	DM	PLE/OV
1084	MSA	Rp,Fm,FF	2	HA	PLE/OV
1087	MSA	Rp,Fm,FF	2	DFMR	CL02/H2S OV/SO2/ Cl/HCl

1088	MSA	Rp,Fm,FF	2	HA	CL02/H2S/ OV/SO2/ Cl/HCl
1093	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	CL02/H2S/ OV/SO2/ Cl/HCl
1104	North	Su,ON	2		
1105	North	Su,ON	2	HR	OV/PLE
1113	North	Su,ON	2	DM	OV/PLE
1123	Racal	Rp,Fm,FF	1	HRA	OV
1128	North	Rp,Fm,FF	2	HRA	OV/PLE
1149	Willson	Rp,Fm,ON	2	DM	OV/PLE
1150	Willson	Rp,Fm,ON	2	DFM	OV/PLE
1162	MSA	Rp,Fm,FF	2	HA	OV/PLE
1164	MSA	Rp,Fm,FF	2	HA	OV/CL02/ H2S/SO2/ Cl/HCl
1165	MSA	Rp,Fm,FF	2	DFMR	OV/CL02/ H2S/SO2/ Cl
1167	MSA	Rp,Fm,FF	2	DM	OV/PLE
1172	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/CL02/ H2S/SO2/ Cl
1184	Racal	PAPR,HH	3	HRA	OV

1194	MSA	Rp,Fm,FF	2	HA	OV/PLE
1196	MSA	Rp,Fm,FF	2	HA	OV/CLO2/ H2S/SO2/ Cl
1197	MSA	Rp,Fm,FF	2	DFMR	OV/CLO2/ H2S/SO2/ Cl
1199	MSA	Rp,Fm,FF	2	DM	OV/PLE
1204	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/CLO2/ H2S/SO2/ Cl/HCl
1228	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/PLE
1230	Cabot Safety	Rp,Fm,ON	2	HRA	OV/PLE
1246	Cabot Safety	Rp,Fm,ON	2	DFM	OV
1248	Cabot Safety	Rp,Fm,ON	2	DFMR	SO2/Cl/OV/ HCl/CLO2
1252	MSA	PAPR,ON	2	HA	SO2/Cl/OV/ HCl/CLO2/ Pest
1253	MSA	PAPR,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	SO2/Cl/OV/ HCl/CLO2/ Pest
1257	MSA	PAPR,ON	2	HA	OV
1258	MSA	PAPR,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV
1263	MSA	PAPR,FF	2	HA	OV

1264	MSA	PAPR,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV
1274	Survivair	Su,ON	2	DFM	OV
1280	MSA	Rp,Fm,ON	2	HA	PLE/OV
1282	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	SO2/Cl/ HCl/CLO2/ OV/H2S
1282	Critical Services	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	SO2/Cl/ HCl/CLO2/ OV/H2S
1283	MSA	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/CLO2/ OV/H2S
1286	Hornell Speedglas	PAPR,HH	3	HRA	OV
1318	3M	Su,ON	2	DM	OV/PLE
1319	3M	Rp,Fm,ON	2	DM	OV/PLE
1328	3M	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HR	OV/PLE
1329	3M	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HR	OV/PLE
1338	Moldex	Rp,Fm,ON	2	DM	OV/PLE
1346	Survivair	PAPR,ON	3	HRA	OV
1362	Cabot	Rp,Fm,FF		HRA Cl/HCl	OV/SO2/
1373	MSA	Rp,Fm,FF	2	HRA	OV/PLE

1383	MSA	Rp,Fm,FF	2	HRA	SO2/Cl/ HCl/CLO2/ OV/H2S
1386	Cabot	Rp,Fm,FF		DFMR	OV/PLE
1387	Cabot	Rp,Fm,FF		HRA	OV/PLE
1399	Cabot	Rp,Fm,FF		DFM	OV
1403	Cabot	Rp,Fm,FF		DFM	OV/SO2/ Cl/HCl/CLO2

9. Sulfur Dioxide

Approval

Approved as respiratory protection against sulfur dioxide.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
1114	Racal	PAPR,HH	3	HRA	OV/HF
1115	Racal	PAPR,HH	3	HRA	OV/HF
1207	Racal	PAPR,FF	3	HRA	OV/HF
1208	Racal	PAPR,HH	3	HRA	OV/HF
1209	Racal	PAPR,HH	3	HRA	OV/HF
1210	Racal	PAPR,ON	3	HRA	OV/HF
1211	Racal	PAPR,HH	3	HRA	OV/HF
1212	Racal	PAPR,HH	3	HRA	OV/HF

10. Vinyl Chloride

Approval

Approved as respiratory protection against 10 parts per million vinyl chloride or until indicator change.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - VINYL CHLORIDE

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
200	3M	Su,ON	1		

Approval

See approval labels for approved maximum use concentration and for specific limitations.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - HYDROGEN FLUORIDE

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Approvals Cartridges	Other and DFM	Gas Vapor
76	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ ClO2/H2S
77	Willson	Rp,Fm,ON	2	DM	OV/SO2/ Cl/HCl/ ClO2/H2S
141	Willson	Rp,Fm,FF	2		OV/SO2/ Cl/HCl/ ClO2/H2S
142	Willson	Rp,Fm,FF	2	DM	OV/SO2/ Cl/HCl/ ClO2/H2S
446	3M	Rp,Fm,ON	2		OV/SO2 Cl/HCl
447	3M	Rp,Fm,ON	2	DM	OV/SO2 Cl/HCl
448	3M	Rp,Fm,ON	2	HRA	OV/SO2 Cl/HCl
563	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ ClO2/H2S
565	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ ClO2/H2S
577	Willson	Rp,Fm,ON	2	DM	OV/SO2/ Cl/HCl/ ClO2/H2S
583	Willson	Rp,Fm,ON	2	HA	OV/SO2/ Cl/HCl/ H2S

685	3M	Rp,Fm,FF	2		Cl/HCl SO2/OV
690	3M	Rp,Fm,FF	2	DM	SO2/Cl HCl/OV
695	3M	Rp,Fm,FF	2	HRA	SO2/HCl Cl/OV
699	Willson	Rp,Fm,ON	2		SO2/Cl/ HCl/H2S CH2-O
700	Willson	Rp,Fm,FF	2		SO2/ Cl/HCl/ H2S/CH2-O
701	Willson	Rp,Fm,ON	2		SO2/ Cl/HCl/ H2S/CH2-O
705	Willson	Rp,Fm,ON	2	DM	SO2/ Cl/HCl/ H2S/CH2-O
706	Willson	Rp,Fm,ON	2	DM	SO2/ Cl/HCl/ H2S/CH2-O
707	Willson	Rp,Fm,FF	2	DM	SO2/ Cl/HCl/ H2S/CH2-O
711	Willson	Rp,Fm,ON	2	DFMR	SO2/ Cl/HCl/ H2S/CH2-O
712	Willson	Rp,Fm,FF	2	DFMR	SO2/ Cl/HCl/ H2S/CH2-O
713	Willson	Rp,Fm,FF	2	DFMR	SO2/ Cl/HCl/ H2S/CH2-O

717	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ Cl/HCl/ ClO2/H2S
718	Willson	Rp,Fm,FF	2	DFMR	OV/SO2/ Cl/HCl/ ClO2/H2S
719	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ Cl/HCl/ ClO2/H2S
865	3M	Su,ON	2		OV/SO2/ Cl/HCl
868	3M	Su,ON	2	DM	OV/SO2/ Cl/HCl
878	3M	Rp,Fm,FF	2		OV/SO2 Cl/HCl
883	3M	Rp,Fm,FF	2	DM	OV/SO2 Cl/HCl
888	3M	Rp,Fm,FF	2	HRA	OV/SO2 Cl/HCl
972	North	Su,ON	1	DM	
1010	3M	Su,ON	2	HRA	OV/SO2/ Cl/HCl
1064	3M	Rp,Fm,ON	2		OV/SO2/ Cl/HCl
1069	3M	Rp,Fm,ON	2	DM	OV/SO2/ Cl/HCl
1074	3M	Rp,Fm,ON	2	HRA	OV/SO2/ Cl/HCl
1114	Racal	PAPR,HH	3	HRA	SO2/OV

1115	Racal	PAPR,HH	3	HRA	SO2/OV
1116	3M	Rp,Fm,ON	2	DM	
1117	3M	Rp,Fm,FF	2	DM	
1118	3M	Rp,Fm,ON	2	DM	
1119	3M	Rp,Fm,FF	2	DM	
1140	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ ClO2/H2S
1147	Willson	Rp,Fm,ON	2	DM	OV/SO2/ Cl/HCl/ ClO2/H2S
1152	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ Cl/HCl/ ClO2/H2S
1207	Racal	PAPR,FF	3	HRA	OV/SO2
1208	Racal	PAPR,HH	3	HRA	OV/SO2
1209	Racal	PAPR,HH	3	HRA	OV/SO2
1210	Racal	PAPR,ON	3	HRA	OV/SO2
1211	Racal	PAPR,HH	3	HRA	OV/SO2
1212	Racal	PAPR,HH	3	HRA	OV/SO2
1224	Moldex	Rp,Fm,Su,ON	2		SO2/Cl/ HCl/ClO2/ H2S
1225	Moldex	Rp,Fm,Su,ON	2		OV/SO2/Cl/ HCl/ClO2/

1322	3M	Su,ON	2	DM	OV/SO2/ HCl/Cl
1323	3M	Rp,Fm,ON	2	DM	OV/SO2/ HCl/Cl
1332	3M	Su,ON	2	HR	OV/SO2/ HCl/Cl
		NOT APPROVED FOR RADIONUCLIDES			
1333	3M	Rp,Fm,ON	2	HR	OV/SO2/ HCl/Cl
		NOT APPROVED FOR RADIONUCLIDES			
1339	Moldex	Rp,Fm,ON	2	DM	ClO2/H2S/ SO2/Cl/HCl
1342	Moldex	Rp,Fm,ON	2	DM	ClO2/H2S/ SO2/Cl/HCl
1343	Moldex	Rp,Fm,ON	2	DM	ClO2/OV/ SO2/Cl/HCl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - MERCURY

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Approvals Cartridges	Other and DFM	Gas Vapor
629	MSA	Rp,Bm,ON	2		Cl
916	Glendale	Rp,Bm,ON	2		Cl
1031	Cabot Safety	Rp,Bm,ON	2		Cl
1032	Cabot Safety	Rp,Bm,FF	2		Cl
1046	MSA	Rp,Bm,ON	2	HA	Cl
1348	MSA	Rp,Bm,FF	2	HA	Cl
1349	MSA	Rp,Bm,ON	2	HA	Cl
1354	MSA	Rp,Bm,FF	2		Cl
1355	MSA	Rp,Bm,FF	2	HA	Cl
1356	Willson	Rp,Bm,ON	2		Cl
1357	Willson	Rp,Bm,FF	2		Cl
1364	MSA	PAPR,ON	2	HRA	Cl
1365	MSA	PAPR,FF	2	HRA	Cl
1384	Cabot Safety	Rp,Fm,FF	2		Cl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - HYDROGEN SULFIDE (escape only)

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Approvals Cartridges	Other and DFM	Gas Vapor
41	MSA	Rp,Fm,ON	2	DM	SO ₂ /Cl HCl/ClO ₂
47	MSA	Rp,Fm,Bm,ON	2	DM	OV/HCL/Cl ClO ₂ /SO ₂
76	Willson	Rp,Fm,ON	2		OV/SO ₂ / Cl/HCl/ ClO ₂ /HF
77	Willson	Rp,Fm,ON	2	DM	OV/SO ₂ / Cl/HCl/ ClO ₂ /HF
115	Scott	Rp,Fm,ON	2		HCL/Cl ClO ₂ /SO ₂ CH ₂ -O
REPLACED BY TC-23C-768					
116	Scott	Rp,Fm,ON	2	DM	HCL/Cl ClO ₂ /SO ₂ CH ₂ -O
141	Willson	Rp,Fm,ON	2		OV/SO ₂ / Cl/HCl/ ClO ₂ /HF
142	Willson	Rp,Fm,ON	2	DM	OV/SO ₂ / Cl/HCl/ ClO ₂ /HF
145	MSA	Rp,Fm,ON	2	DM	SO ₂ /Cl HCl/ClO ₂
146	MSA	Rp,Fm,FF	2	DM	OV/HCL/Cl ClO ₂ /SO ₂
150	MSA	Rp,Fm,FF	2	HA	SO ₂ /Cl HCl/ClO ₂

153	MSA	Rp,Fm,FF	2	HA	OV/HCL/CI ClO2/SO2 Pest
154	MSA	Rp,Fm,FF	2	DFMR	OV/HCL/CI ClO2/SO2 Pest
156	MSA	Rp,Fm,ON	2	HA	HCL/CI ClO2/SO2
159	MSA	Rp,Fm,Bm,ON	2	HA	OV/HCL/CI ClO2/SO2 Pest
160	MSA	Rp,Fm,Bm,ON	2	DFMR	OV/HCL/CI ClO2/SO2 Pest
172	Scott	Rp,Fm,ON	2		OV/HCL/CI ClO2/SO2 CH2-O
REPLACED BY TC-23C-776					
174	Scott	Rp,Fm,ON	2	DM	OV/HCL/CI ClO2/SO2 CH2-O
218	Scott	Rp,Fm,FF	2	DM	HCL/CI ClO2/SO2 CH2-O
221	Scott	Rp,Fm,FF	2		OV/HCL/CI ClO2/SO2 CH2-O
222	Scott	Rp,Fm,FF	2	DM	OV/HCL CI/ClO2 SO2/CH2-O
225	Scott	Rp,Fm,FF	2		HCL/CI ClO2/SO2 CH2-O
246	Scott	Rp,Fm,ON	2	DFMR	HCL/CI ClO2/SO2

247	Scott	Rp,Fm,FF	2	DFMR	HCl/Cl ClO2/SO2 CH2-O
250	Scott	Rp,Fm,ON	2	DFMR	OV/HCL/Cl ClO2/SO2 CH2-O
251	Scott	Rp,Fm,FF	2	DFMR	OV/HCL/Cl ClO2/SO2 CH2-O
260	MSA	Rp,Fm,ON	2	DM	OV/HCL/Cl ClO2/SO2
261	MSA	Rp,Bm,ON	2	DM	OV/HCL/Cl ClO2/SO2
262	MSA	Rp,Bm,FF	2	DM	OV/HCL/Cl ClO2/SO2
288	North	Es,Mp	1		SO2/Cl HCl
298	Willson	Rp,Fm,ON	2		OV/HCL/Cl ClO2/SO2
299	Willson	Rp,Fm,ON	2	HA	OV/HCL/Cl ClO2/SO2
300	Willson	Rp,Fm,FF	2		OV/HCL/Cl ClO2/SO2
301	Willson	Rp,Fm,FF	2		OV/HCL/Cl ClO2/SO2
339	Cabot Safety	Rp,Fm,ON	2		HCl/Cl ClO2/SO2
340	Cabot Safety	Rp,Fm,FF	2		HCl/Cl ClO2/SO2

341	Cabot Safety	Rp,Fm,ON	2	D,M	HCl/Cl ClO2/SO2
342	Cabot Safety	Rp,Fm,FF	2	D,M	HCl/Cl ClO2/SO2
415	Cabot Safety	Rp,Fm,ON	2	HRA	HCl/Cl ClO2/SO2
416	Cabot Safety	Rp,Fm,FF	2	HRA	HCl/Cl ClO2/SO2
443	3M	Rp,Fm,ON	2		SO2/HCl/Cl ClO2
444	3M	Rp,Fm,ON	2	DM	SO2/HCl/Cl ClO2
445	3M	Rp,Fm,ON	2	HRA	SO2/HCl/Cl ClO2
449	North	Es,Mp	1	DM	SO2/Cl HCl
461	MSA	Rp,Bm,ON	2	DM	HCl/Cl ClO2/SO2
462	MSA	Rp,Bm,ON	2	DM	OV/HCl/Cl ClO2/SO2
466	MSA	Rp,Bm,ON	2	HA	OV/HCl/Cl ClO2/SO2 Pest
467	MSA	Rp,Bm,ON	2	DFMR	OV/HCl/Cl ClO2/SO2 Pest
470	MSA	Rp,Bm,ON	2	HA	HCl/Cl ClO2/SO2
472	MSA	Rp,Bm,ON	2	DM	OV/HCl/Cl ClO2/SO2

492	Scott	Es,Mp	1		Cl/HCl
514	MSA	Es,Mp	1	DM	SO2/HCl/Cl ClO2
517	Scott	Rp,Fm,ON	2	HRA	HCl/Cl ClO2/SO2 CH2-O
REPLACED BY TC-23C-771					
518	Scott	Rp,Fm,FF	2	HRA	HCl/Cl ClO2/SO2 CH2-O
521	Scott	Rp,Fm,ON	2	HRA	OV/HCl/Cl ClO2/SO2 CH2-O
REPLACED BY TC-23C-779					
522	Scott	Rp,Fm,FF	2	HRA	OV/HCl Cl/ClO2 SO2/CH2-O
563	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ ClO2/HF
565	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ ClO2/HF
577	Willson	Rp,Fm,ON	2	DM	OV/SO2/ Cl/HCl/ ClO2/HF
583	Willson	Rp,Fm,ON	2	HA	OV/SO2/ Cl/HCl/ ClO2
604	Cabot Safety	Es,Mp	1		Cl/ClO2
684	3M	Rp,Fm,FF	2		SO2/HCl/Cl ClO2

689	3M	Rp,Fm,FF	2	DM	SO2/HCL/CI ClO2
694	3M	Rp,Fm,FF	2	HRA	SO2/HCL/CI ClO2
699	Willson	Rp,Fm,ON	2		SO2/CI/ HCl/CH2-O
700	Willson	Rp,Fm,FF	2		SO2/CI/ HCl/CH2-O
701	Willson	Rp,Fm,ON	2		SO2/CI/ HCl/CH2-O
705	Willson	Rp,Fm,ON	2	DM	SO2/CI/ HCl/CH2-O
706	Willson	Rp,Fm,ON	2	DM	SO2/CI/ HCl/CH2-O
707	Willson	Rp,Fm,FF	2	DM	SO2/CI/ HCl/CH2-O
711	Willson	Rp,Fm,ON	2	DFMR	SO2/CI/ HCl/CH2-O
712	Willson	Rp,Fm,FF	2	DFMR	SO2/CI/ HCl/CH2-O
713	Willson	Rp,Fm,ON	2	DFMR	SO2/CI/ HCl/CH2-O
717	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ CI/HCl/ ClO2/HF
718	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ CI/HCl/ ClO2/HF
719	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ CI/HCl/ ClO2/HF

768	Scott	Rp,Fm,ON	2		HCL/CI ClO2/SO2 CH2-O
769	Scott	Rp,Fm,ON	2	DM	HCL/CI ClO2/SO2 CH2-O
770	Scott	Rp,Fm,ON	2	DMFR	HCL/CI ClO2/SO2 CH2-O
771	Scott	Rp,Fm,ON	2	HRA	HCL/CI ClO2/SO2 CH2-O
776	Scott	Rp,Fm,ON	2		OV/HCL/CI ClO2/SO2
777	Scott	Rp,Fm,ON	2	DM	OV/HCL/CI ClO2/SO2 CH2-O
778	Scott	Rp,Fm,ON	2	DMFR	OV/HCL/CI ClO2/SO2
779	Scott	Rp,Fm,ON	2	HRA	OV/HCL/CI ClO2/SO2
832	MSA	Rp,Fm,FF	2	DM	HCL/CI ClO2/SO2
833	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI ClO2/SO2
836	MSA	Rp,Fm,FF	2	HA	HCL/CI ClO2/SO2
837	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI ClO2/SO2
839	MSA	Rp,Fm,FF	2	HA	OV/HCL/CI ClO2/SO2 Pest

843	MSA	Rp,Fm,FF	2	DM	HCL/CI CIO2/SO2
844	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI CIO2/SO2
851	MSA	Rp,Fm,FF	2	HA	HCL/CI CIO2/SO2
852	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI CIO2/SO2
853	MSA	Rp,Fm,FF	2	DFMR	OV/HCL/CI CIO2/SO2 Pest
854	MSA	Rp,Fm,FF	2	HA	OV/HCL/CI CIO2/SO2 Pest
866	3M	Su,ON	2		SO2/CI HCl/CIO2
869	3M	Su,ON	2	DM	SO2/CI HCl/CIO2
877	3M	Rp,Fm,FF	2		CIO2 SO2/HCL/CI
882	3M	Rp,Fm,FF	2	DM CIO2	SO2/HCL/CI
887	3M	Rp,Fm,FF	2	HRA CIO2	SO2/HCL/CI
929	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/CI CIO2/SO2 Pest
930	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/CI CIO2/SO2 Pest

931	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO2/SO2 Pest
932	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO2/SO2 Pest
933	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO2/SO2 Pest
934	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO2/SO2 Pest
946	MSA	Rp,Fm,FF	2	DM	HCl/Cl ClO2/SO2
947	MSA	Rp,Fm,FF	2	DM	OV/HCl/Cl ClO2/SO2
951	MSA	Rp,Fm,FF	2	HA	HCl/Cl ClO2/SO2
952	MSA	Rp,Fm,FF	2	HA	OV/HCl/Cl ClO2/SO2 Pest
953	MSA	Rp,Fm,FF	2	DFMR	OV/HCl/Cl ClO2/SO2 Pest
957	MSA	Rp,Fm,FF	2	DM	OV/HCl/Cl ClO2/SO2
961	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO2/SO2 Pest
981	Cabot Safety	Rp,Fm,FF	2		SO2/Cl HCl/ClO2
982	Cabot Safety	Rp,Fm,FF	2	DM	SO2/Cl HCl/ClO2

983	Cabot Safety	Rp,Fm,FF	2	DFM	SO2/Cl HCl/ClO2
1000	Cabot Safety	Rp,Fm,FF	2	HRA	SO2/Cl HCl/ClO2
1020	3M	Su,ON	2	HRA	SO2/Cl HCl/ClO2
1061	Scott	Es,Mp	1		ClO-2/Cl HCl/SO2
1063	3M	Rp,Fm,ON	2		SO2/Cl HCl/ClO2
1068	3M	Rp,Fm,ON	2	DM	SO2/Cl HCl/ClO2
1073	3M	Rp,Fm,ON	2	HRA	SO2/Cl HCl/ClO2
1077	MSA	Rp,Fm,FF	2	DM	Cl/HCl SO2/ClO2
1078	MSA	Rp,Fm,FF	2	DM	Cl/HCl SO2/ClO2
1085	MSA	Rp,Fm,FF	2	HA	Cl/HCl SO2/ClO2
1086	MSA	Rp,Fm,FF	2	DM	Cl/HCl SO2/ClO2 OV
1087	MSA	Rp,Fm,FF	2	DFMR	Cl/HCl SO2/ClO2 OV/Pest
1088	MSA	Rp,Fm,FF	2	HA	Cl/HCl SO2/ClO2 OV/Pest

1093	MSA	Rp,Fm,FF	2	HA	Cl/HCl SO2/ClO2 OV/Pest
NOT APPROVED FOR RADIONUCLIDES					
1140	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ ClO2/HF
1141	Willson	Rp,Fm,ON	2		SO2/Cl/ HCl/CH2-O
1144	Willson	Rp,Fm,ON	2		OV/SO2/Cl/ HCl/ClO2
1147	Willson	Rp,Fm,ON	2	DM	OV/SO2/Cl/ HCl/ClO2/ HF
1148	Willson	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/CH2-O
1152	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ Cl/HCl/ ClO2/HF
1153	Willson	Rp,Fm,ON	2	DFMR	SO2/Cl/ HCl/CH2-O
1156	Willson	Rp,Fm,ON	2	HA	OV/SO2/Cl/ HCl/ClO2
1158	MSA	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/ClO2
1159	MSA	Rp,Fm,FF	2	DM	OV/SO2/ HCl/ClO2
1163	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/ClO2
1164	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/ClO2/ OV/Pest

1165	MSA	Rp,Fm,FF	2	DFMR	OV/SO2/Cl/ HCl/ClO2/ Pest
1169	MSA	Rp,Fm,FF	2	DM	OV/SO2/Cl/ HCl/ClO2
1172	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/SO2/Cl/ HCl/ClO2/ Pest
1177	MSA DE CHILI	Rp,Fm,ON	2		SO2/Cl/ HCl/ClO2
1178	MSA DE CHILI	Rp,Fm,ON	2		OV/SO2/Cl/ HCl/ClO2
1179	MSA DE CHILI	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/ClO2
1180	MSA DE CHILI	Rp,Fm,ON	2	DFMR	OV/SO2/Cl/ HCl/ClO2
1190	MSA	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/ClO2
1191	MSA	Rp,Fm,FF	2	DM	OV/SO2/Cl/ HCl/ClO2
1195	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/ClO2
1196	MSA	Rp,Fm,FF	2	HA	OV/SO2/Cl/ HCl/ClO2/ Pest
1197	MSA	Rp,Fm,FF	2	DFMR	OV/SO2/Cl/ HCl/ClO2/ Pest
1201	MSA	Rp,Fm,FF	2	DM	OV/SO2/Cl/ HCl/ClO2

1204	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/SO2/Cl/ HCl/ClO2/ Pest
1217	Scott	Mp,Es	1	DM	SO2/Cl/ HCl/ClO2
1224	Moldex	Rp,Fm,Su,ON	2		SO2/Cl/ HCl/HF/ ClO2
1231	Cabot Safety	Rp,Fm,ON	2		SO2/Cl/ HCl/ClO2
1232	Cabot Safety	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/ClO2
1233	Cabot Safety	Rp,Fm,ON	2	DFMR	SO2/Cl/ HCl/ClO2
1234	Cabot Safety	Rp,Fm,ON	2	HRA	SO2/Cl/ HCl/ClO2
1272	Survivair	Su,ON	2	DM	SO2/Cl/ HCl/ClO2/ OV
1275	Survivair	Su,ON	2	DFM	SO2/Cl/ HCl/ClO2/ OV
1277	MSA	Rp,Fm,ON	2		SO2/Cl/ HCl/ClO2
1278	MSA	Rp,Fm,ON	2		SO2/Cl/ HCl/ClO2/ OV
1281	MSA	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/ClO2/
1282	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	SO2/Cl/ HCl/ClO2/ OV

1282	Critical Services	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	SO2/Cl/ HCl/ClO2/ OV/Pest
1283	MSA	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/ClO2/ OV
1312	MSA	PAPR,ON	2		Cl/SO2/ HCl/ClO2
1313	MSA	PAPR,ON	2	HA	Cl/SO2/ HCl/ClO2
1314	MSA	PAPR,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	Cl/SO2/ HCl/ClO2
1315	MSA	PAPR,FF	2		Cl/SO2 HCl/ClO2
1316	MSA	PAPR,FF	2	HA	Cl/SO2/ HCl/ClO2
1317	MSA	PAPR,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	Cl/SO2/ HCl/ClO2
1320	3M	Su,ON	2	DM	Cl/SO2/ HCl/ClO2
1321	3M	Rp,Fm,ON	2	DM	Cl/SO2/ HCl/ClO2
1330	3M	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HR	SO2/Cl/ HCl/ClO2
1331	3M	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HR	SO2/Cl/ HCl/ClO2
1339	Moldex	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/ClO2/HF

1342	Moldex	Rp,Fm,ON	2	DM	ClO ₂ /HF/ SO ₂ /Cl/HCl
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1404	Cabot Safety	Es,Mp	2	DM	SO ₂ /Cl/ HCl/ClO ₂
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CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - CHLORINE DIOXIDE

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Approvals Cartridges	Other and DFM	Gas Vapor
41	MSA	Rp,Fm,ON	2	DM	H2S/SO2/Cl HCl
47	MSA	Rp,Fm,Bm,ON	2	DM	OV/HCL/Cl SO2/H2S
76	Willson	Rp,Fm,On	2		OV/SO2/ Cl/HCl/ C2S/HF/ H2S
77	Willson	Rp,Fm,On	2	DM	OV/SO2/ Cl/HCl/ C2S/HF/ H2S
115	Scott	Rp,Fm,ON	2		HCL/Cl CH2-O/SO2
REPLACED BY TC-23C-768					
116	Scott	Rp,Fm,ON	2	DM	HCL/Cl CH2-O/SO2
141	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ H2S/HF
142	Willson	Rp,Fm,FF	2	DM	OV/SO2/ Cl/HCl/ H2S/HF
145	MSA	Rp,Fm,ON	2	DM	H2S/SO2/Cl HCl
146	MSA	Rp,Fm,FF	2	DM	OV/HCL/Cl SO2/H2S
150	MSA	Rp,Fm,FF	2	HA	H2S/SO2/Cl HCl

153	MSA	Rp,Fm,FF	2	HA	OV/HCL/CI SO2/H2S Pest
154	MSA	Rp,Fm,FF	2	DFMR	OV/HCL/CI SO2/H2S Pest
156	MSA	Rp,Fm,ON	2	HA	HCL/CI SO2/H2S
159	MSA	Rp,Fm,FF,ON	2	HA	OV/HCL/CI SO2/H2S Pest
160	MSA	Rp,Fm,FF,ON	2	DFMR	OV/HCL/CI SO2/H2S Pest
172	Scott	Rp,Fm,ON	2		HCL/CI OV/SO2 H2S/CH2-O
REPLACED BY TC-23C-776					
174	Scott	Rp,Fm,ON	2	DM	HCL/CI OV/SO2 H2S/CH2-O
183	Glendale	Rp,Fm,ON	2		SO2/HCL/CI CH2-O
218	Scott	Rp,Fm,FF	2	DM	HCL/CI CH2-O/SO2 H2S
221	Scott	Rp,Fm,FF	2		HCL/CI OV/SO2 H2S/CH2-O
222	Scott	Rp,Fm,FF	2	DM	HCL/CI OV/SO2 H2S/CH2-O
225	Scott	Rp,Fm,FF	2		HCL/CI SO2/CH2-O H2S

246	Scott	Rp,Fm,ON	2	DFMR	HCL/CI SO2/CH2-O H2S
247	Scott	Rp,Fm,FF	2	DFMR	HCL/CI SO2/CH2-O H2S
250	Scott	Rp,Fm,ON	2	DFMR	HCL/CI SO2/CH2-O H2S/OV
251	Scott	Rp,Fm,ON	2	DFMR	HCL/CI SO2/H2S OV/CH2-O
260	MSA	Rp,Fm,ON	2	DM	OV/HCL/CI SO2/H2S
261	MSA	Rp,Fm,ON	2	DM	OV/HCL/CI SO2/H2S
262	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI SO2/H2S
281	Cabot Safety	Rp,Fm,ON	2	DFM	OV/HCL/CI SO2/Pest
282	Cabot Safety	Rp,Fm,FF	2	DFM	OV/HCL/CI SO2/Pest
288	North	Es,Mp	1		SO2/CI/ HCL
298	Willson	Rp,Fm,ON	2		OV/CI HCL/SO2/ H2S/HF
299	Willson	Rp,Fm,ON	2	HA	OV/CI HCL/SO2/ H2S/HF
300	Willson	Rp,Fm,Fr	2		OV/CI HCL/SO2/ H2S/HF

301	Willson	Rp,Fm,Fr	2		OV/CI HCL/SO2/ H2S
318	Survivair	Rp,Fm,ON	2		OV/SO2/ CI/HCL
339	Cabot Safety	Rp,Fm,ON	2		HCL/CI SO2/H2S
340	Cabot Safety	Rp,Fm,FF	2		HCL/CI SO2/H2S
341	Cabot Safety	Rp,Fm,ON	2	DM	SO2/CI HCL/H2S
342	Cabot Safety	Rp,Fm,FF	2	DM	SO2/CI HCL/H2S
343	Cabot Safety	Rp,Fm,ON	2		OV/SO2/HCL CI
344	Cabot Safety	Rp,Fm,FF	2		OV/SO2/HCL CI
345	Cabot Safety	Rp,Fm,ON	2	DM CI	OV/SO2/HCL CI
346	Cabot Safety	Rp,Fm,FF	2	DM CI	OV/SO2/HCL CI
407	Glendale	Rp,Fm,FF	2		SO2/HCL/CI CH2-O
415	Cabot Safety	Rp,Fm,ON	2	HRA	HCL/CI SO2/H2S
416	Cabot Safety	Rp,Fm,FF	2	HRA	HCL/CI SO2/H2S
417	Cabot Safety	Rp,Fm,ON	2	HRA	OV/SO2/HCL CI/Pest

418	Cabot Safety	Rp,Fm,FF	2	HRA	OV/SO2/HCl Cl/Pest
433	Survivair	Rp,Fm,ON	2	DM	OV/SO2/ Cl/HCl
443	3M	Rp,Fm,ON	2		SO2/HCL/Cl H2S
444	3M	Rp,Fm,ON	2	DM	SO2/HCL/Cl H2S
445	3M	Rp,Fm,ON	2	HRA	SO2/HCL/Cl H2S
449	North	Es,Mp	1	DM	SO2/HCL/Cl
450	Survivair	Rp,Fm,ON	2	HRA	OV/Pest/ SO2/Cl/HCl
461	MSA	Rp,Bm,ON	2	DM	HCL/Cl SO2/H2S
462	MSA	Rp,Bm,ON	2	DM	OV/HCL/Cl SO2/H2S
466	MSA	Rp,Bm,ON	2	HA	OV/HCL/Cl SO2/H2S Pest
467	MSA	Rp,Bm,ON	2	DFMR	OV/HCL/Cl SO2/H2S Pest
470	MSA	Rp,Bm,ON	2	HA	HCL/Cl SO2/H2S
472	MSA	Rp,Bm,ON	2	DM	OV/HCL/Cl SO2/H2S
514	MSA	Es,Mp	1	DM	SO2/HCl/Cl

517	Scott	Rp,Fm,ON	2	HRA	SO2/HCl Cl/H2S CH2-O
REPLACED BY TC-23C-771					
518	Scott	Rp,Fm,FF	2	HRA	SO2/HCl Cl/H2S CH2-O
521	Scott	Rp,Fm,ON	2	HRA	OV/SO2 HCl/Cl H2S/CH2-O
REPLACED BY TC-23C-779					
522	Scott	Rp,Fm,FF	2	HRA	OV/SO2 HCl/Cl H2S/CH2-O
532	Survivair	Rp,Fm,ON	2	DFMR	OV/SO2/ Cl/HCl
563	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ H2S/HF
565	Willson	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/ HF/H2S
577	Willson	Rp,Fm,ON	2	DM	OV/SO2/ Cl/HCl/ H2S/HF
583	Willson	Rp,Fm,ON	2	HA	OV/SO2/ Cl/HCl/ HF/H2S
587	Cabot Safety	Rp,Fm,ON	2	DFM	OV/SO2/HCl Cl/Pest
588	Cabot Safety	Rp,Fm,FF	2	DFM	OV/SO2/HCl Cl/Pest
604	Cabot Safety	Es,Mp	1		H2S/Cl

619	Glendale	Rp,Fm,ON	2		SO2/HCL/CI CH2-O
620	Glendale	Rp,Fm,FF	2		SO2/HCL/CI CH2-O
679	Cabot Safety	Rp,Fm,FF	2		OV/SO2/HCI CI
684	3M	Rp,Fm,FF	2		SO2/HCL/CI H2S
689	3M	Rp,Fm,FF	2	DM	SO2/HCL/CI H2S
694	3M	Rp,Fm,FF	2	HRA	SO2/HCL/CI H2S
717	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ CI/HCI/ H2S/HF
718	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ CI/HCI/ H2S/HF
719	Willson	Rp,Fm,ON	2	DFMR	OV/SO2/ CI/HCI/ H2S/HF
768	Scott	Rp,Fm,ON	2		SO2/HCI CI/H2S CH2-O
769	Scott	Rp,Fm,ON	2	DM	SO2/HCI CI/H2S CH2-O
770	Scott	Rp,Fm,ON	2	DFMR	SO2/HCI CI/H2S CH2-O
771	Scott	Rp,Fm,ON	2	HRA	SO2/HCI CI/H2S CH2-O

776	Scott	Rp,Fm,ON	2		OV/SO2 HCl/Cl H2S
777	Scott	Rp,Fm,ON	2	DM	OV/SO2/HCl Cl/H2S CH2-O
778	Scott	Rp,Fm,ON	2	DFMR	OV/SO2 HCl/Cl H2S
779	Scott	Rp,Fm,ON	2	HRA	OV/SO2 HCl/Cl H2S
794	Cabot Safety	Rp,Fm,FF	2	HRA	SO2/HCl Cl/OV/Pest
798	Cabot Safety	Rp,Fm,FF	2		HCl/Cl ClO2/SO2
799	Cabot Safety	Rp,Fm,FF	2		OV/SO2/HCl Cl
803	Cabot Safety	Rp,Fm,FF	2	HRA	HCl/Cl ClO2/SO2
805	Cabot Safety	Rp,Fm,FF	2		OV/SO2/HCl Cl
808	Cabot Safety	Rp,Fm,FF	2	DM	HCl/Cl SO2
809	Cabot Safety	Rp,Fm,FF	2	DM	OV/SO2/HCl Cl
812	Cabot Safety	Rp,Fm,FF	2	DFM	OV/HCl/Cl SO2
817	Glendale	Rp,Fm,ON	2		SO2/HCl/Cl CH2-O

819	Glendale	Rp,Fm,ON	2		SO2/HCL/CI CH2-O
832	MSA	Rp,Fm,FF	2	DM	HCL/CI CIO2/SO2
833	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI CIO2/SO2
836	MSA	Rp,Fm,FF	2	HA	HCL/CI CIO2/SO2
837	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI CIO2/SO2
839	MSA	Rp,Fm,FF	2	HA	OV/HCL/CI CIO2/SO2 Pest
843	MSA	Rp,Fm,FF	2	DM	HCL/CI CIO2/SO2
844	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI CIO2/SO2
851	MSA	Rp,Fm,FF	2	HA	HCL/CI CIO2/SO2
852	MSA	Rp,Fm,FF	2	DM	OV/HCL/CI CIO2/SO2
853	MSA	Rp,Fm,FF	2	DFMR	OV/HCL/CI CIO2/SO2 Pest
854	MSA	Rp,Fm,FF	2	HA	OV/HCL/CI CIO2/SO2 Pest
866	3M	Su,ON	2		H2S/CI HCI/SO2
869	3M	Su,ON	2	DM	H2S/CI HCI/SO2

877	3M	Rp,Fm,FF	2		SO2/HCL/CI H2S
882	3M	Rp,Fm,FF	2	DM	SO2/HCL/CI H2S
887	3M	Rp,Fm,FF	2	HRA	SO2/HCL/CI H2S
902	Cabot Safety	Rp,Fm,ON	2	DFMR	HCI/CI CIO2/SO2
903	Cabot Safety	Rp,Fm,FF	2	DFMR	HCI/CI CIO2/SO2
904	Cabot Safety	Rp,Fm,FF	2	DFMR	HCI/CI CIO2/SO2
905	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/HCI/CI SO2/Pest
906	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/HCI/CI SO2/Pest
907	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/HCI/CI SO2/Pest
914	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/HCI/CI SO2/Pest
915	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/HCI/CI SO2/Pest
929	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCI/CI CIO2/SO2 Pest
930	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCI/CI CIO2/SO2 Pest
931	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCI/CI CIO2/SO2 Pest

932	MSA	Rp,Bm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO ₂ /SO ₂ Pest
933	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO ₂ /SO ₂ Pest
934	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO ₂ /SO ₂ Pest
946	MSA	Rp,Fm,FF	2	DM	HCl/Cl ClO ₂ /SO ₂
947	MSA	Rp,Fm,FF	2	DM	OV/HCl/Cl ClO ₂ /SO ₂
951	MSA	Rp,Fm,FF	2	HA	HCl/Cl ClO ₂ /SO ₂
952	MSA	Rp,Fm,FF	2	HA	OV/HCl/Cl ClO ₂ /SO ₂ Pest
953	MSA	Rp,Fm,FF	2	DFMR	OV/HCl/Cl ClO ₂ /SO ₂ Pest
957	MSA	Rp,Fm,FF	2	DM	OV/HCl/Cl ClO ₂ /SO ₂
961	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/HCl/Cl ClO ₂ /SO ₂ Pest
981	Cabot Safety	Rp,Fm,FF	2		H ₂ S/SO ₂ /Cl HCl
982	Cabot Safety	Rp,Fm,FF	2	DM	H ₂ S/SO ₂ /Cl HCl
983	Cabot Safety	Rp,Fm,FF	2	DFM	H ₂ S/SO ₂ /Cl HCl

984	Cabot Safety	Rp,Fm,FF	2		OV/SO2/Cl HCl
985	Cabot Safety	Rp,Fm,FF	2	DM	OV/SO2/Cl HCl
986	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/SO2/Cl HCl/Pest
995	Cabot Safety	Rp,Fm,FF	2		OV/SO2/Cl HCl
996	Cabot Safety	Rp,Fm,FF	2	DFMR	OV/SO2/Cl HCl/Pest
998	Cabot Safety	Rp,Fm,FF	2	DFM	OV/SO2/Cl HCl/Pest
1000	Cabot Safety	Rp,Fm,FF	2	HRA	SO2/Cl HCl/H2S
1001	Cabot Safety	Rp,Fm,FF	2	HRA	SO2/Cl HCl/H2S Pest
1020	3M	Su,ON	2	HRA	H2S/Cl HCl/SO2
1042	Willson	Su,ON	2		OV/Cl HCl/SO2
1043	Willson	Su,ON	2	DM	OV/Cl HCl/SO2
1050	Willson	Su,ON	2	HR	OV/Cl HCl/SO2
1054	MSA	PAPR,FF	2		OV/SO2 Cl2/HCl
1056	MSA	PAPR,FF	2	HA	OV/SO2 Cl2/HCl Pest

1057	MSA	PAPR,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/SO2 CL2/HCl Pest
1061	Scott	Es,Mp	1		H2S/SO2 HCl/Cl
1063	3M	Rp,Fm,ON	2		SO2/Cl HCl/H2S
1068	3M	Rp,Fm,ON	2	DM	SO2/Cl HCl/H2S
1073	3M	Rp,Fm,ON	2	HRA	SO2/Cl HCl/H2S
1077	MSA	Rp,Fm,FF	2	DM	Cl/HCl SO2/H2S
1078	MSA	Rp,Fm,FF	2	DM	Cl/HCl SO2/H2S OV
1085	MSA	Rp,Fm,FF	2	HA	Cl/HCl SO2/H2S
1086	MSA	Rp,Fm,FF	2	DM	Cl/HCl SO2/H2S OV
1087	MSA	Rp,Fm,FF	2	DFMR	Cl/HCl SO2/H2S OV/Pest
1088	MSA	Rp,Fm,FF	2	HA	Cl/HCl SO2/H2S OV/Pest
1093	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	Cl/HCl SO2/H2S OV/Pest
1132	Survivair	Su,ON	2		SO2/Cl HCl/OV

1140	Willson	Rp,Fm,ON	2		SO2/Cl/ HCl/OV/ H2S/HF
1144	Willson	Rp,Fm,ON	2		SO2/Cl/ HCl/OV/ H2S
1147	Willson	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/OV/ H2S/HF
1152	Willson	Rp,Fm,ON	2	DFM	SO2/Cl/ HCl/OV/ H2S/HF
1156	Willson	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/OV/ H2S
1158	MSA	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/H2S
1159	MSA	Rp,Fm,FF	2	DM	OV/SO2/Cl/ HCl/H2S
1163	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/H2S
1164	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/H2S/ OV/Pest
1165	MSA	Rp,Fm,FF	2	DFMR	OV/SO2/Cl/ HCl/H2S/ Pest
1169	MSA	Rp,Fm,FF	2	DM	OV/SO2/Cl/ HCl/H2S
1172	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/SO2/Cl/ HCl/H2S Pest

1177	MSA DE CHILI	Rp,Fm,ON	2		SO2/Cl/ HCl/H2S
1178	MSA DE CHILI	Rp,Fm,ON	2		OV/SO2/Cl/ HCl/H2S
1179	MSA DE CHILI	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/H2S
1180	MSA DE CHILI	Rp,Fm,ON	2	DFMR	OV/SO2/Cl/ HCl/H2S
1190	MSA	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/H2S
1191	MSA	Rp,Fm,FF	2	DM	OV/SO2/Cl/ HCl/ClO2
1195	MSA	Rp,Fm,FF	2	HA	SO2/Cl/ HCl/H2S
1196	MSA	Rp,Fm,FF	2	HA	OV/SO2/Cl/ HCl/H2S Pest
1197	MSA	Rp,Fm,FF	2	DFMR	OV/SO2/Cl/ HCl/H2S Pest
1201	MSA	Rp,Fm,FF	2	DM	OV/SO2/Cl/ HCl/H2S
1204	MSA	Rp,Fm,FF	2	HA	OV/SO2/Cl/ HCl/H2S Pest
NOT APPROVED FOR RADIONUCLIDES					
1217	Scott	Mp,Es	1	DM	H2S/SO2/ Cl/HCl
1224	Moldex-Metric	Rp,Fm,Su,ON	2		SO2/Cl/ HCl/HF/ H2S

1225	Moldex-Metric	Rp,Fm,Su,ON	2		OV/SO2/CI/ HCl/HF
1231	Cabot Safety	Rp,Fm,ON	2		SO2/CI/ HCl/H2S
1232	Cabot Safety	Rp,Fm,ON	2	DM	SO2/CI/ HCl/H2S
1233	Cabot Safety	Rp,Fm,ON	2	DFMR	SO2/CI/ HCl/H2S
1234	Cabot Safety	Rp,Fm,ON	2	HRA	SO2/CI/ HCl/H2S
1235	Cabot Safety	Rp,Fm,ON	2		OV/SO2/CI/ HCl
1236	Cabot Safety	Rp,Fm,ON	2	DM	OV/SO2/CI/ HCl
1237	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/SO2/CI/ HCl/Pest
1238	Cabot Safety	Rp,Fm,ON	2	HRA	OV/SO2/CI/ HCl/Pest
1248	Cabot Safety	Rp,Fm,ON	2	DFMR	OV/SO2/CI/ HCl/Pest
1250	MSA	PAPR,ON	2		SO2/CI/OV/ HCl
1252	MSA	PAPR,ON	2	HA	SO2/CI/OV/ HCl/Pest
1253	MSA	PAPR,ON	2	HA	SO2/CI/OV/ HCl/Pest
		NOT APPROVED FOR RADIONUCLIDES			
1272	Survivair	Su,ON	2	DM	SO2/CI/OV/ HCl/CH2-O

1275	Survivair	Su,ON	2	DFM	SO2/Cl/OV/ HCl/CH2-O
1277	MSA	Rp,Fm,ON	2		SO2/Cl/ HCl/H2S
1278	MSA	Rp,Fm,ON	2		SO2/Cl/ HCl/H2S/ OV
1281	MSA	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/H2S
1282	MSA	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	SO2/Cl/ HCl/H2S/ OV/Pest
1282	Critical Services	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	SO2/Cl/ HCl/H2S/ OV/Pest
1283	MSA	Rp,Fm,ON	2	HA	SO2/Cl/ HCl/H2S/ OV
1312	MSA	PAPR,ON	2		SO2/Cl/ HCl/H2S
1313	MSA	PAPR,ON	2	HA	SO2/Cl/ HCl/H2S
1314	MSA	PAPR,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	SO2/Cl/ HCl/H2S
1315	MSA	PAPR,FF	2		SO2/Cl/ HCl/H2S
1316	MSA	PAPR,FF	2	HA	SO2/Cl/ HCl/H2S

1317	MSA	PAPR,FF	2	HA	SO2/Cl/ HCl/H2S
NOT APPROVED FOR RADIONUCLIDES					
1320	3M	Su,ON	2	DM	SO2/Cl/ HCl/H2S
1321	3M	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/H2S
1330	3M	Su,ON	2	HR	SO2/Cl/ HCl/H2S
NOT APPROVED FOR RADIONUCLIDES					
1331	3M	Rp,Fm,ON	2	HR	SO2/Cl/ HCl/H2S
NOT APPROVED FOR RADIONUCLIDES					
1339	Moldex-Metric	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/H2S/HF
1340	Moldex-Metric	Rp,Fm,ON	2	DM	OV/SO2/Cl/ HCl
1342	Moldex-Metric	Rp,Fm,ON	2	DM	Cl/H2S/HF SO2/HCl
1343	Moldex-Metric	Rp,Fm,ON	2	DM	HF/OV/SO2 Cl/HCl
1360	Cabot	Rp,Fm,FF	2		OV/SO2/ Cl/HCl
1362	Cabot	Rp,Fm,FF	2		OV/SO2/ Cl/HCl/Pest
1382	MSA	Rp,Fm,ON	2		OV/SO2/ Cl/HCl/H2S
1383	MSA	Rp,Fm,ON	2	HRA	OV/SO2/ Cl/HCl/H2S
1388	Cabot	Rp,Fm,FF	2		SO2/ Cl/HCl/H2S

1389	Cabot	Rp,Fm,FF	2	DM	SO2/ Cl/HCl/H2S
1390	Cabot	Rp,Fm,FF	2	DFMR	SO2/ Cl/HCl/H2S
1391	Cabot	Rp,Fm,FF	2	HRA	SO2/ Cl/HCl/H2S
1392	Cabot	Rp,Fm,FF	2	DM	OV/SO2/ Cl/HCl
1393	Cabot	Rp,Fm,FF	2	DFMR	OV/SO2/ Cl/HCl/Pest
1403	Cabot	Rp,Fm,FF	2	DFM	OV/SO2/ Cl/HCl/Pest
1404	Cabot	Mp,Es	2	DM	SO2/ Cl/HCl

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Respirator and Facepiece Type	Number of Approvals Cartridges	Other and DFM	Gas Vapor
115	Scott	Rp,Fm,ON	2		SO2/HCl Cl/H2S ClO2
REPLACED BY TC-23C-768					
116	Scott	Rp,Fm,ON	2	DM	SO2/HCl Cl/H2S ClO2
172	Scott	Rp,Fm,ON	2		OV/SO2 HCl/Cl H2S/ClO2
REPLACED BY TC-23C-776					
174	Scott	Rp,Fm,ON	2	DM	OV/SO2 HCl/Cl H2S/ClO2
183	Glendale	Rp,Fm,ON	2		SO2/HCl/ Cl/ClO2
184	Glendale	Rp,Fm,ON	2		SO2/HCl/Cl
207	North	Rp,ON,Fm	2	HRA	HCl/Cl SO2
208	North	Rp,Bm,ON	2	HRA	HCl/Cl/SO2
209	North	Rp,Fm,FF	2	HRA	HCl/Cl/SO2
218	Scott	Rp,Fm,FF	2	DM	SO2/HCl Cl/H2S ClO2
221	Scott	Rp,Fm,FF	2		OV/SO2 Cl/HCl H2S/ClO2
222	Scott	Rp,Fm,FF	2	DM	OV/SO2 Cl/HCl H2S/ClO2

225	Scott	Rp,Fm,FF	2		SO2/HCl Cl/H2S ClO2
226	North	Rp,Fm,ON	2		SO2/HCl Cl
227	North	Rp,Bm,ON	2		SO2/HCl/Cl
228	North	Rp,Fm,FF	2		SO2/HCl/Cl
229	North	Rp,Fm,ON	2	DM	SO2/HCl Cl
230	North	Rp,Bm,ON	2	DM	SO2/HCl/Cl
231	North	Rp,Fm,FF	2	DM	SO2/HCl/Cl
241	Glendale	Rp,Fm,ON	2		OV/SO2/HCl Cl
242	Glendale	Rp,Fm,ON	2		OV/SO2/HCl Cl
246	Scott	Rp,Fm,ON	2	DFMR	SO2/HCl Cl/H2S ClO2
247	Scott	Rp,Fm,FF	2	DFMR	SO2/HCl Cl/H2S ClO2
250	Scott	Rp,Fm,ON	2	DFMR	OV/SO2 HCl/Cl H2S/ClO2
251	Scott	Rp,Fm,FF	2	DFMR	OV/HCl/Cl ClO2/SO2 H2S
318	Survivair	Rp,Fm,ON	2		SO2/HCl Cl/OV

352	North	Su,ON	1		OV/SO2/Cl HCl
353	North	Su,ON	1		SO2/Cl/HCl
356	North	Su,ON	1	DM	SO2/Cl/HCl
357	North	Su,ON	1	DM	OV/SO2/Cl HCl
359	Pro-Tech	Rp,Fm,ON	2		SO2/HCl Cl
372	3M	Su,ON	1		
397	North	Rp,Fm,ON	2		
398	North	Rp,Fm,ON	2	DM	
399	North	Rp,Fm,ON	2		
400	North	Rp,Fm,ON	2	DM	
401	North	Rp,Fm,FF	2		
402	North	Rp,Fm,FF	2	DM	
407	Glendale	Rp,Fm,FF	2		SO2/HCl/ Cl/ClO2
408	Glendale	Rp,Fm,FF	2		SO2/HCl/Cl
410	Glendale	Rp,Fm,FF	2		SO2/OV/HCl Cl
411	Glendale	Rp,Fm,FF	2		SO2/OV/HCl Cl
429	Survivair	Rp,Fm,FF	2		SO2/HCl/Cl

430	Survivair	Rp,Fm,ON	2		SO2/HCl/Cl
431	Survivair	Rp,Fm,ON	2	DM	SO2/HCl/Cl
432	Survivair	Rp,Fm,FF	2	DM	SO2/HCl/Cl
433	Survivair	Rp,Fm,ON	2	DM	SO2/HCl Cl/OV
434	Survivair	Rp,Fm,ON	2	DM	SO2/HCl Cl/OV
454	Survivair	Rp,Fm,FF	2		SO2/HCl Cl/OV
459	Pro-Tech	Rp,Fm,ON	2	HRA	SO2/HCl Cl
475	3M	Rp,Fm,ON	2		OV
486	3M	Su,ON	1	DM	
503	3M	Rp,Fm,ON	2	DM	OV
505	Cabot Safety	Rp,Fm,ON	2		
506	Cabot Safety	Rp,Fm,FF	2		
507	Cabot Safety	Rp,Fm,ON	2	DM	
508	Cabot Safety	Rp,Fm,FF	2	DM	
511	MSA	Rp,Fm,ON	1	DM	SO2/HCl Cl
512	MSA	Rp,Fm,ON	1	DM	OV/SO2/HCl Cl

517	Scott	Rp,Fm,ON	2	HRA	SO2/HCl Cl/H2S ClO2
REPLACED BY TC-23C-771					
518	Scott	Rp,Fm,FF	2	HRA	SO2/HCl Cl/H2S ClO2
521	Scott	Rp,Fm,ON	2	HRA	OV/SO2 HCl/Cl H2S/ClO2
REPLACED BY TC-23C-779					
522	Scott	Rp,Fm,FF	2	HRA	OV/HCL Cl/ClO2 SO2/H2S
532	Survivair	Rp,Fm,ON	2	DFMR	SO2/HCl Cl/OV
533	Survivair	Rp,Fm,FF	2	DFMR	SO2/HCl Cl/OV
593	Racal	PAPR,HH	3		SO2/Cl/HCl
594	Racal	PAPR,FF	3		SO2/Cl/HCl
595	Racal	PAPR,HH	3		SO2/Cl/HCl
596	Racal	PAPR,HH	3		SO2/Cl/HCl
597	Racal	PAPR,HH	3	HRA	SO2/Cl/HCl
598	Racal	PAPR,FF	3	HRA	SO2/Cl/HCl
599	Racal	PAPR,HH	3	HRA	SO2/Cl/HCl
600	Racal	PAPR,HH	3	HRA	SO2/Cl/HCl
603	Racal	PAPR,HH	3	HRA	SO2/Cl/HCl

613	Racal	PAPR,ON	3		SO2/Cl/HCl
614	Racal	PAPR,ON	3	HRA	SO2/Cl/HCl
619	Glendale	Rp,Fm,ON	2	HRA	SO2/Cl/ HCl/ClO2
620	Glendale	Rp,Fm,FF	2	HRA	SO2/Cl/ HCl/ClO2
621	Glendale	Rp,Fm,ON	2	HRA	SO2/Cl/HCl OV
622	Glendale	Rp,Fm,FF	2	HRA	SO2/Cl/HCl OV
634	Racal	PAPR,HH	3		SO2/HCl Cl
635	Racal	PAPR,HH	3	HRA	SO2/HCl Cl
652	North	Rp,Fm,ON	2	DFM	SO2/HCl Cl
653	North	Rp,Bm,ON	2	DFM	SO2/HCl Cl
654	North	Rp,Fm,FF	2	DFM	SO2/HCl Cl
671	Pro-Tech	Rp,Fm,FF	2		SO2/Cl HCl
673	Pro-Tech	Rp,Fm,FF	2	HRA HCl	SO2/Cl
697	3M	Rp,Fm,FF	2		OV
698	3M	Rp,Fm,FF	2	DM	OV

699	Willson	Rp,Fm,ON	2		SO2/Cl/ HCl/H2S
700	Willson	Rp,Fm,FF	2		SO2/Cl/ HCl/H2S
701	Willson	Rp,Fm,ON	2		SO2/Cl/ HCl/H2S
702	Willson	Rp,Bm,ON	2		SO2/Cl/HCl
703	Willson	Rp,Bm,FF	2		SO2/Cl/HCl
704	Willson	Rp,Bm,ON	2		SO2/Cl/HCl
705	Willson	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/H2S
706	Willson	Rp,Fm,ON	2	DM	SO2/Cl/ HCl/H2S
707	Willson	Rp,Fm,FF	2	DM	SO2/Cl/ HCl/H2S
708	Willson	Rp,Bm,ON	2	DM	SO2/Cl/HCl
709	Willson	Rp,Bm,FF	2	DM	SO2/Cl/HCl
710	Willson	Rp,Bm,ON	2	DM	SO2/Cl/HCl
711	Willson	Rp,Fm,ON	2	DFM	SO2/Cl/ HCl/H2S
712	Willson	Rp,Fm,FF	2	DFM	SO2/Cl/ HCl/H2S
713	Willson	Rp,Fm,FF	2	DFM	SO2/Cl/ HCl/H2S
714	Willson	Rp,Bm,ON	2	DFM	SO2/Cl/HCl

715	Willson	Rp,Bm,FF	2	DFM	SO2/Cl/HCl
716	Willson	Rp,Bm,ON	2	DFM	SO2/Cl/HCl
741	Willson	Rp,Fm,ON	2		SO2/Cl/HCl
742	Willson	Rp,Fm,ON	1		SO2/Cl/HCl
746	Willson	Rp,Fm,FF	2		SO2/Cl HCl
749	Willson	Rp,Fm,FF	2	DM	SO2/Cl HCl
754	Willson	Rp,Fm,ON	2	DM	SO2/Cl/HCl
757	Willson	Rp,Fm,ON	1	DM	SO2/Cl/HCl
765	Willson	Rp,Fm,ON	2	HA	SO2/Cl/HCl
766	Willson	Rp,Fm,FF	2	HA	SO2/Cl HCl
768	Scott	Rp,Fm,ON	2		HCl/Cl SO2/H2S ClO2
769	Scott	Rp,Fm,ON	2	DM	HCl/Cl SO2/H2S ClO2
770	Scott	Rp,Fm,ON	2	DFMR	HCl/Cl SO2/H2S ClO2
771	Scott	Rp,Fm,ON	2	HRA	HCl/Cl SO2/H2S ClO2
789	Willson	Rp,Fm,ON	2	DFMR	SO2/Cl/HCl

790	Willson	Rp,Fm,FF	2	DFMR	SO2/CI HCl
804	Cabot Safety	Rp,Fm,FF	2		
811	Cabot Safety	Rp,Fm,FF	2	DM	
817	Glendale	Rp,Fm,ON	2		HCl/CI/ SO2/CLO-2
818	Glendale	Rp,Fm,ON	2	DM	HCl/CI/SO2
819	Glendale	Rp,Fm,ON	2	HRA	HCl/CI/ SO2/CLO-2
820	Glendale	Rp,Fm,ON	2		HCl/CI/SO2 OV
821	Glendale	Rp,Fm,ON	2	DM	HCl/CI/SO2 OV
822	Glendale	Rp,Fm,ON	2	HRA	HCl/CI/SO2 OV
829	Willson	Rp,Fm,ON	1	DFM	SO2/CI/HCl
864	3M	Su,ON	2		OV
867	3M	Su,ON	2	DM	OV
890	3M	Rp,Fm,FF	2		OV
891	3M	Rp,Fm,FF	2	DM	OV
894	Racal	PAPR,HH	3	HRA	SO2/CI/HCl
896	Racal	PAPR,HH	3	HRA	SO2/CI/HCl

911	Cabot Safety	Rp,Fm,ON	2	DFMR	
912	Cabot Safety	Rp,Fm,FF	2	DFMR	
913	Cabot Safety	Rp,Fm,FF	2	DFMR	
917	MSA	Rp,Fm,ON	2	DM	OV/SO2/ Cl/HCl
918	MSA	Rp,Bm,ON	2	DM	OV/SO2/ Cl/HCl
919	MSA	Rp,Fm,FF	2	DM	OV/SO2/ Cl/HCl
920	MSA	Rp,Bm,ON	2	DM	OV/SO2/ Cl/HCl
921	MSA	Rp,Fm,FF	2	DM	OV
922	MSA	Rp,Fm,FF	2	DM	OV/SO2/ Cl/HCl
923	MSA	Rp,Fm,ON	2	HA	OV/SO2/ Cl/HCl
924	MSA	Rp,Bm,ON	2	HA	OV/SO2/ Cl/HCl
925	MSA	Rp,Bm,ON	2	HA	OV/SO2/ Cl/HCl
926	MSA	Rp,Fm,FF	2	HA	OV/SO2/ Cl/HCl
927	MSA	Rp,Fm,FF	2	HA	OV/SO2/ Cl/HCl
928	MSA	Rp,Fm,FF	2	HA	OV/SO2/ Cl/HCl

958	MSA	Rp,Fm,FF	2	DM	OV/SO2/ Cl/HCl
960	MSA	Rp,Fm,FF	2	HA	OV/SO2/ Cl/HCl
966	Critical Products Group	Rp,Fm,ON	2	HA	SO2/Cl HCl
992	Cabot Safety	Rp,Fm,FF	2		
993	Cabot Safety	Rp,Fm,FF	2	DM	
994	Cabot Safety	Rp,Fm,FF	2	DFMR	
1012	3M	Su,ON	2	HRA	OV
1044	Willson	Su,ON	2		SO2/Cl HCl
1045	Willson	Su,ON	2	DM	SO2/Cl HCl
1051	Willson	Su,ON	2	HA	SO2/Cl HCl
1060	Hornell Speedglas	PAPR,HH	3	HRA	SO2/Cl/HCl
1065	3M	Rp,Fm,ON	2		OV
1071	3M	Rp,Fm,ON	2	DM	OV
1076	3M	Rp,Fm,ON	2	HRA	OV
1091	MSA	Rp,Fm,FF	2	DM	
1092	MSA	Rp,Fm,FF	2	HA	

1096	North	Su,ON	2		SO2/Cl/ HCL
1100	North	Su,ON	2	DM	SO2/Cl/ HCL
1106	North	Su,ON	2	HR	SO2/Cl/ HCL
1110	North	Su,ON	2	DFM	SO2/Cl/ HCL
1126	Racal	Rp,Fm,FF	1		SO2/Cl/ HCL
1127	Racal	Rp,Fm,FF	1	HRA	SO2/Cl/ HCL
1131	Survivair	Su,ON	2		SO2/Cl/ HCL
1141	Willson	Rp,Fm,ON	2		SO2/Cl/ HCL/H2S
1148	Willson	Rp,Fm,ON	2	DM	SO2/Cl/ HCL/H2S
1153	Willson	Rp,Fm,ON	2	DFM	SO2/Cl/ HCL/H2S
1170	MSA	Rp,Fm,FF	2	DM	OV/SO2/ Cl/HCl
1171	MSA	Rp,Fm,FF	2	HA	OV/SO2/ Cl/HCl
1185	Racal	PAPR,HH	3		
1186	Racal	PAPR,HH	3	HRA	SO2/Cl/ HCl
1202	MSA	Rp,Fm,FF	2	DM	OV/SO2/ Cl/HCl

1203	MSA	Rp,Fm,FF	2	HA	OV/SO2/ Cl/HCl
1221	National Draeger	Rp,Fm,FF	1	DM	SO2/Cl/ HCl
1243	Cabot Safety	Rp,Fm,ON	2		
1244	Cabot Safety	Rp,Fm,ON	2	DM	
1245	Cabot Safety	Rp,Fm,ON	2	DFMR	
1259	MSA	Rp,Fm,ON	2		
1260	MSA	Rp,Fm,ON	2	HA	
1261	MSA	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HA	
1265	MSA	Rp,Fm,FF	2		
1266	MSA	Rp,Fm,FF	2	HA	
1267	MSA	Rp,Fm,FF NOT APPROVED FOR RADIONUCLIDES	2	HA	
1271	Survivair	Su,ON	2	DM	SO2/Cl/ HCl
1287	Hornell Speedglas	PAPR,HH	3	HRA	SO2/Cl
1288	North	Su,ON	2		OV
1289	North	Su,ON	2	DM	OV
1290	North	Su,ON	2	HR	OV

1291	North	Su,ON	2	DFM	OV
1292	North	Rp,Fm,ON	2		OV
1293	North	Rp,Fm,ON	2	DM	OV
1294	North	Rp,Fm,ON	2	HRA	OV
1295	North	Rp,Fm,ON	2	DFM	OV
1296	North	Rp,Bm,ON	2		OV
1297	North	Rp,Bm,ON	2	DM	OV
1298	North	Rp,Bm,ON	2	HRA	OV
1299	North	Rp,Bm,ON	2	DFM	OV
1300	North	Rp,Fm,FF	2		OV
1301	North	Rp,Fm,FF	2	DM	OV
1302	North	Rp,Fm,FF	2	HRA	OV
1303	North	Rp,Fm,FF	2	DFM	OV
1304	National Draeger	Rp,Fm,ON	1		Cl/HCL/ SO2
1326	3M	Su,ON	2	DM	OV
1327	3M	Rp,Fm,ON	2	DM	OV
1336	3M	Su,ON NOT APPROVED FOR RADIONUCLIDES	2	HR	OV
1337	3M	Rp,Fm,ON NOT APPROVED FOR RADIONUCLIDES	2	HR	OV

1350	US Safety	Rp,Fm,ON	2	DM	
1350	Lab Safety	Rp,Fm,ON	2	DM	
1351	US Safety	Rp,Fm,ON	2	HRA	
1351	Lab Safety	Rp,Fm,ON	2	HRA	
1352	US Safety	Rp,Fm,FF	2	DM	
1352	Lab Safety	Rp,Fm,FF	2	DM	
1353	US Safety	Rp,Fm,FF	2	HRA	
1353	Lab Safety	Rp,Fm,FF	2	HRA	
1366	MSA	Rp,Fm,ON	2		OV/SO2/ Cl/HCl
1367	MSA	Rp,Fm,ON	2	HRA	OV/SO2/ Cl/HCl
1379	MSA	Rp,Fm,ON	2		OV/SO2/ Cl/HCl
1380	MSA	Rp,Fm,ON	2	HRA	OV/SO2/ Cl/HCl
1400	Cabot Safety	Rp,Fm,FF	2		
1401	Cabot Safety	Rp,Fm,FF	2	DM	
1402	Cabot Safety	Rp,Fm,FF	2	DFMR	

POWERED AIR PURIFYING RESPIRATORS



F. Powered Air Purifiers

1. Gas Masks

Approval

See approval label for specific approval information and limitations.

Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

POWERED AIR PURIFYING GAS MASKS - ORGANIC VAPOR

Approval Number TC-14G-	Approval Issued to	Facepiece Type	DFM Approval	Other gas and Vapor Approval
122	Racal	FF		

POWERED AIR PURIFYING GAS MASKS - CHLORINE

Approval Number TC-14G-	Approval Issued to	Facepiece Type	DFM Approval	Other gas and Vapor Approval
123	Racal	FF		HCl

POWERED AIR PURIFYING GAS MASKS - AMMONIA

Approval Number TC-14G-	Approval Issued to	Facepiece Type	DFM Approval	Other gas and Vapor Approval
132	Racal	FF		MA

POWERED AIR PURIFYING GAS MASKS - METHYLAMINE

Approval Number TC-14G-	Approval Issued to	Facepiece Type	DFM Approval	Other gas and Vapor Approval
132	Racal	FF		NH3

POWERED AIR PURIFYING GAS MASKS - ACID GAS

Approval Number TC-14G-	Approval Issued to	Facepiece Type	DFM Approval	Other gas and Vapor Approval
133	Racal	FF		

POWERED AIR PURIFYING GAS MASKS - HYDROGEN CHLORIDE

Approval Number TC-14G-	Approval Issued to	Facepiece Type	DFM Approval	Other gas and Vapor Approval
123	Racal	FF		Cl

2. Particulate

Approval

See approval label for specific approval information and limitations.

Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing filters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

POWERED AIR PURIFYING PARTICULATE RESPIRATORS - DUSTS AND MISTS

Approval Number TC-21C-	Approval Issued to	Facepiece Type	Number of Filters	Other Approvals
197	Racal	HH	1	Z
211	Racal	HH	1	Z
235	3M	HH	1	Z,AB
294	Neoterik	HH	1	
295	Neoterik	HH	1	
298	Racal	HH	1	Z
299	Racal	HH	1	Z
318	3M	HH	1	Z,AB
443	3M	HH	1	Z
444	3M	HH	1	Z,AB
478	Racal	HH	1	
479	Racal	HH	1	
616	ESAB	HH	1	

POWERED AIR PURIFYING PARTICULATE RESPIRATORS - HIGH EFFICIENCY

Approval Number TC-21C-	Approval Issued to	Facepiece Type	Number of Filters	Other Approvals
136A	3M	HH	1	R
137	3M	HH	1	AB
186	MSA	ON,FF	2	A
212	Racal	HH	2	RA
237	Racal	HH	2	RA
246	3M	HH	1	A
263	Neoterik	HH	1	RA
269	Neoterik	HH	1	RA
270	Neoterik	HH	1	RA
275	Racal	HH	3	RA
276	Racal	FF	3	RA
277	Racal	HH	3	RA
278	Racal	HH	3	RA
285	Neoterik	HH	1	RA
321	Racal	HH	3	RA
324	Racal	ON	3	RA
327	Neoterik	ON	3	RA
329	Racal	HH	3	RA

330	Neoterik	FF	3	RA
353	Racal	FF	1	RA
402	Neoterik	HH		RA
403	Neoterik	ON	1	RA
404	Neoterik	FF	1	RA
405	Neoterik	FF	3	RA
407	Neoterik	FF	2	RA
408	Neoterik	FF	3	RA
446	Neoterik	FF	2	RA
447	Neoterik	FF	2	RA
448	Neoterik	FF	2	RA
449	Neoterik	FF	1	RA
450	Neoterik	ON	1	RA
451	Neoterik	FF	1	RA
452	Willson	FF	1	A
453	Willson	ON	1	A
456	3M	FF	1	A
459	Kasco	HH	1	A
460	Neoterik	FF	1	RA

461	Neoterik	FF	1	RA
468	MSA	FF	2	A
469	MSA	FF NOT APPROVED FOR RADIONUCLIDES	2	A
470	MSA	ON	2	A
471	MSA	ON	2	A
472	MSA	HH	2	A
473	MSA	HH NOT APPROVED FOR RADIONUCLIDES	2	A
474	Bullard	FF	2	RA
480	Racal	HH	3	RA
481	North	FF	2	RA
482	Neoterik	FF	1	RA
483	3M	HH	1	A
484	Bullard	HH	2	RA
492	ISI	FF	1	RA
493	Cabot Safety	FF	2	RA
495	MSA	FF	1	A
496	MSA	FF NOT APPROVED FOR RADIONUCLIDES	1	A
498	Pro-Tech	FF	1	A

498	Sellstrom	FF	1	A
499	Survivair	FF	1	RA
511	Bullard	HH	2	RA
512	MSA	FF	2	A
513	MSA	ON	2	A
514	MSA	ON NOT APPROVED FOR RADIONUCLIDES	2	A
515	MSA	FF NOT APPROVED FOR RADIONUCLIDES	2	A
516	MSA	HH	2	A
517	MSA	HH NOT APPROVED FOR RADIONUCLIDES	2	A
526	Glendale	ON	2	RA
527	Glendale	FF	2	RA
528	Pulsafe	FF	1	RA
530	3M	FF	1	A
531	Cabot Safety	FF	2	RA
542	Hornell Speedglas	HH	3	RA
546	Survivair	FF	3	RA
559	Kasco	HH	2	A
575	Racal	HH	3	RA

580	Willson	FF	1	A
586	Cabot Safety	ON	2	RA
603	MSA	ON	2	A
605	Hornell Speedglas	HH	3	RA
627	Kasco	HH	2	A
628	Survivair	ON	3	RA
632	National Draeger	FF	2	RA
633	Kasco	FF	2	A
635	Survivair	HH	3	

3. Chemical Cartridges

Approval

See approval label for specific approval information and limitations.

Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - AMMONIA

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
970	Cabot Safety	FF	2		
1034	Cabot Safety	FF	2		
1214	Cabot Safety	ON	2		

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - METHYLAMINE and AMMONIA

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
589	Racal	HH	3		
590	Racal	FF	3		
591	Racal	HH	3		
592	Racal	HH	3		
612	Racal	ON	3		
628	Neoterik	ON	3		
633	Racal	HH	3		
639	Neoterik	FF	3		
641	Racal	HH	3	HRA	
642	Racal	FF	3	HRA	
643	Racal	HH	3	HRA	
644	Racal	HH	3	HRA	
645	Racal	HH	3	HRA	
646	Racal	ON	3	HRA	
895	Racal	HH	3		
898	Racal	HH	3	HRA	
1055	MSA	FF	2		
1058	MSA	FF	2	HA	

1059	MSA	FF NOT APPROVED FOR RADIONUCLIDES	2	HA
1187	Racal	HH	3	
1188	Racal	HH	3	HRA
1251	MSA	ON	2	
1254	MSA	ON	2	HA
1255	MSA	ON NOT APPROVED FOR RADIONUCLIDES	2	HA

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - CHLORINE

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
479	Racal	HH	3		HCl
480	Racal	HH	3		HCl
481	Racal	HH	3		HCl
534	Racal	FF	3		HCl
610	Racal	ON	3		HCl
631	Racal	HH	3		HCl
1364	MSA	ON	2	HRA	Hg
1365	MSA	FF	2	HRA	Hg

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - CHLORINE DIOXIDE

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
1054	MSA	FF	2		OV/SO2/CL/HCl
1056	MSA	FF	2	HA	OV/SO2 CL/HCl
1057	MSA	FF	2	HA	OV/SO2 CL2/HCl NOT APPROVED FOR RADIONUCLIDES
1250	MSA	ON	2		SO2/Cl/OV/HCl
1252	MSA	ON	2	HA	SO2/Cl/OV/HCl/Pest
1253	MSA	ON	2	HA	SO2/Cl/OV/HCl/Pest NOT APPROVED FOR RADIONUCLIDES
1312	MSA	ON	2		SO2/Cl/HCl/H2S
1313	MSA	ON	2	HA	SO2/Cl/HCl/H2S
1314	MSA	ON	2	HA	SO2/Cl/HCl/H2S NOT APPROVED FOR RADIONUCLIDES
1315	MSA	FF	2		SO2/Cl/HCl/H2S
1316	MSA	FF	2	HA	SO2/Cl/HCl/H2S
1317	MSA	FF	2	HA	SO2/Cl/HCl/H2S NOT APPROVED FOR RADIONUCLIDES

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
479	Racal	HH	3		Cl
480	Racal	HH	3		Cl
481	Racal	HH	3		Cl
534	Racal	FF	3		Cl
631	Racal	HH	3		Cl

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - HYDROGEN FLUORIDE

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
1114	Racal	HH	3	HRA	OV/SO2
1115	Racal	HH	3	HRA	OV/SO2
1207	Racal	FF	3	HRA	OV/SO2
1208	Racal	HH	3	HRA	OV/SO2
1209	Racal	HH	3	HRA	OV/SO2
1210	Racal	ON	3	HRA	OV/SO2
1211	Racal	HH	3	HRA	OV/SO2
1212	Racal	HH	3	HRA	OV/SO2

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - SULFUR DIOXIDE

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
1114	Racal	HH	3	HRA	OV/HF
1115	Racal	HH	3	HRA	OV/HF
1207	Racal	FF	3	HRA	OV/HF
1208	Racal	HH	3	HRA	OV/HF
1209	Racal	HH	3	HRA	OV/HF
1210	Racal	ON	3	HRA	OV/HF
1211	Racal	HH	3	HRA	OV/HF
1212	Racal	HH	3	HRA	OV/HF

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - CHLORINE, SULFUR DIOXIDE, HYDROGEN CHLORIDE

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
593	Racal	HH	3		CH2-O
594	Racal	FF	3		CH2-O
595	Racal	HH	3		CH2-O
596	Racal	HH	3		CH2-O
597	Racal	HH	3	HRA	CH2-O
598	Racal	FF	3	HRA	CH2-O
599	Racal	HH	3	HRA	CH2-O
600	Racal	HH	3	HRA	CH2-O
603	Racal	HH	3	HRA	CH2-O
605	Racal	HH	3		OV/CH2-O
606	Racal	FF	3		OV
607	Racal	HH	3		OV
608	Racal	HH	3		OV
613	Racal	ON	3		CH2-O
614	Racal	ON	3	HRA	CH2-O
615	Racal	ON	3		OV
626	Neoterik	ON	3		OV
627	Neoterik	ON	3		

634	Racal	HH	3		
635	Racal	HH	3	HRA	
636	Racal	HH	3		OV
638	Neoterik	FF	3		OV
640	Neoterik	FF	3		
647	Racal	FF	3	HRA	OV
648	Racal	ON	3	HRA	OV
894	Racal	HH	3		CH2-O
896	Racal	HH	3	HRA	CH2-O
897	Racal	HH	3		OV
1023	Racal	HH	3	HRA	OV
1024	Racal	HH	3	HRA	OV
1025	Racal	HH	3	HRA	OV
1026	Racal	HH	3	HRA	OV
1027	Racal	HH	3	HRA	OV
1037	Racal	FF	1		OV
1053	Survivair	FF	3	HRA	OV/Pest
1054	MSA	FF	2		OV/CLO2
1056	MSA	FF	2	HA	OV/CLO2

1057	MSA	FF NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/CLO2
1060	Hornell Speedglas	HH	3	HRA	CH2-O
1182	Racal	HH	3	HRA	OV
1183	Racal	HH	3		OV
1185	Racal	HH	3		CH2-O
1186	Racal	HH	3	HRA	CH2-O
1216	Racal	FF	1	HRA	OV
1250	MSA	ON	2		OV/CLO2
1252	MSA	ON	2	HA	OV/CLO2/ Pest
1253	MSA	ON NOT APPROVED FOR RADIONUCLIDES	2	HA	OV/CLO2/ Pest
1287	Hornell Speedglas	HH	3	HRA	CH2-O
1312	MSA	ON	2		CLO2/H2S
1313	MSA	ON	2	HA	CLO2/H2S
1314	MSA	ON NOT APPROVED FOR RADIONUCLIDES	2	HA	CLO2/H2S
1315	MSA	FF	2		CLO2/H2S
1316	MSA	FF	2	HA	CLO2/H2S
1317	MSA	FF NOT APPROVED FOR RADIONUCLIDES	2	HA	CLO2/H2S

1347

Survivair

ON

3

HRA

OV

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - ORGANIC VAPORS

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
476	Racal	HH	3		
477	Racal	HH	3		
478	Racal	HH	3		
482	Racal	HH	3	HRA	Pest
483	Racal	FF	3	HRA	Pest
484	Racal	HH	3	HRA	Pest
485	Racal	HH	3	HRA	Pest
535	Racal	FF	3		
602	Racal	HH	3	HRA	Pest
605	Racal	HH	3		SO2/HCl/Cl
606	Racal	FF	3		SO2/HCl/Cl
607	Racal	HH	3		SO2/HCl/Cl
608	Racal	HH	3		SO2/HCl/Cl
611	Racal	ON	3	HRA	Pest
615	Racal	ON	3		SO2/HCl/Cl
625	Neoterik	ON	3		
626	Neoterik	ON	3		SO2/HCl/Cl
630	Racal	HH	3		

632	Racal	HH	3	HRA	Pest
636	Racal	HH	3		SO2/HCl/Cl
637	Neoterik	FF	3		
638	Neoterik	FF	3		SO2/HCl/Cl
647	Racal	FF	3	HRA	SO2/HCl/Cl
648	Racal	ON	3	HRA	SO2/HCl/Cl
892	Racal	HH	3		
893	Racal	HH	3	HRA	Pest
897	Racal	HH	3		SO2/Cl/HCl
969	Cabot Safety	FF	2		
1023	Racal	HH	3	HRA	SO2/Cl/HCl
1024	Racal	HH	3	HRA	SO2/Cl/HCl
1025	Racal	HH	3	HRA	SO2/Cl/HCl
1026	Racal	HH	3	HRA	SO2/Cl/HCl
1027	Racal	HH	3	HRA	SO2/Cl/HCl
1033	Cabot Safety	FF	2		
1035	Hornell Speedglas	HH	3	HRA	Pest
1036	Racal	FF	1		

1037	Racal	FF	1		SO2/Cl HCl
1047	Survivair	FF	3		
1052	Survivair	FF	3	HRA	Pest
1053	Survivair	FF	3	HRA	SO2/Cl HCl/Pest
1054	MSA	FF	2		SO2/Cl HCl/CL0-2
1056	MSA	FF	2	HA	SO2/Cl HCl/CL0-2
1057	MSA	FF	2	HA	SO2/Cl HCl/CL0-2
NOT APPROVED FOR RADIONUCLIDES					
1114	Racal	HH	3	HRA	HF/SO2
1115	Racal	HH	3	HRA	HF/SO2
1181	Racal	HH	3		
1182	Racal	HH	3	HRA	SO2/Cl/HCL
1183	Racal	HH	3	HRA	SO2/Cl/HCL
1184	Racal	HH	3	HRA	Pest
1207	Racal	FF	3	HRA	SO2/HF
1208	Racal	HH	3	HRA	SO2/HF
1209	Racal	HH	3	HRA	SO2/HF
1210	Racal	ON	3	HRA	SO2/HF

1211	Racal	HH	3	HRA	SO2/HF
1212	Racal	HH	3	HRA	SO2/HF
1215	Cabot Safety	ON	2		
1216	Racal	FF	1	HRA	SO2/Cl/ HCl
1250	MSA	ON	2		SO2/Cl/ HCl/ClO2
1252	MSA	ON	2	HA	SO2/Cl/ HCl/ClO2/ Pest
1253	MSA	ON	2	HA	SO2/Cl/ HCl/ClO2/ Pest
NOT APPROVED FOR RADIONUCLIDES					
1256	MSA	ON	2		
1257	MSA	ON	2	HA	Pest
1258	MSA	ON	2	HA	Pest
NOT APPROVED FOR RADIONUCLIDES					
1262	MSA	FF	2		
1263	MSA	FF	2	HA	Pest
1264	MSA	FF	2	HA	Pest
NOT APPROVED FOR RADIONUCLIDES					
1269	MSA	FF	2	HA	
1286	Hornell Speedglas	HH	3	HRA	Pest
1345	Survivair	ON	3		

1346	Survivair	ON	3	HRA	Pest
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1347	Survivair	ON	3	HRA	SO2/Cl/HCl
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POWERED AIR PURIFYING CHEMICAL CARTRIDGES - PESTICIDES

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
482	Racal	HH	3	HRA	OV
483	Racal	FF	3	HRA	OV
484	Racal	HH	3	HRA	OV
485	Racal	HH	3	HRA	OV
602	Racal	HH	3	HRA	OV
611	Racal	ON	3	HRA	OV
632	Racal	HH	3	HRA	OV
682	Kasco	HH	3	HA	
767	Kasco	HH	3		
893	Racal	HH	3	HRA	OV
1003	Spring Protezione s.r.l.	HH	3		
1035	Hornell Speedglas	HH	3	HRA	OV
1052	Survivair	FF	3	HRA	OV
1053	Survivair	FF	3	HRA	SO2/CI HCl/OV
1184	Racal	HH	3	HRA	OV
1252	MSA	ON	2	HA	SO2/CI/OV/ HCl/CLO2

1253	MSA	ON	2	HA	SO2/Cl/OV/ HCl/CLO2/
NOT APPROVED FOR RADIONUCLIDES					
1257	MSA	ON	2	HA	OV
1258	MSA	ON	2	HA	OV
NOT APPROVED FOR RADIONUCLIDES					
1263	MSA	FF	2	HA	OV
1264	MSA	FF	2	HA	OV
NOT APPROVED FOR RADIONUCLIDES					
1286	Hornell Speedglas	HH	3	HRA	OV
1346	Survivair	ON	3	HRA	OV

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - FORMALDEHYDE

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
593	Racal	HH	3		SO2/Cl/HCl
594	Racal	FF	3		SO2/Cl/HCl
595	Racal	HH	3		SO2/Cl/HCl
596	Racal	HH	3		SO2/Cl/HCl
597	Racal	HH	3	HRA	SO2/Cl/HCl
598	Racal	FF	3	HRA	SO2/Cl/HCl
599	Racal	HH	3	HRA	SO2/Cl/HCl
600	Racal	HH	3	HRA	SO2/Cl/HCl
603	Racal	HH	3	HRA	SO2/Cl/HCl
613	Racal	ON	3		SO2/Cl/HCl
614	Racal	ON	3	HRA	SO2/Cl/HCl
894	Racal	HH	3		SO2/Cl/HCl
896	Racal	HH	3	HRA	SO2/Cl/HCl
1060	Hornell Speedglas	HH	3	HRA	SO2/Cl HCl
1185	Racal	HH	3		SO2/Cl HCl
1186	Racal	HH	3	HRA	SO2/Cl HCl
1259	MSA	ON	2		

1260	MSA	ON	2	HA	
1261	MSA	ON NOT APPROVED FOR RADIONUCLIDES	2	HA	
1265	MSA	FF	2		
1266	MSA	FF	2	HA	
1267	MSA	FF NOT APPROVED FOR RADIONUCLIDES	2	HA	
1287	Hornell Speedglas	HH	3	HRA	HCl/CL/ SO2

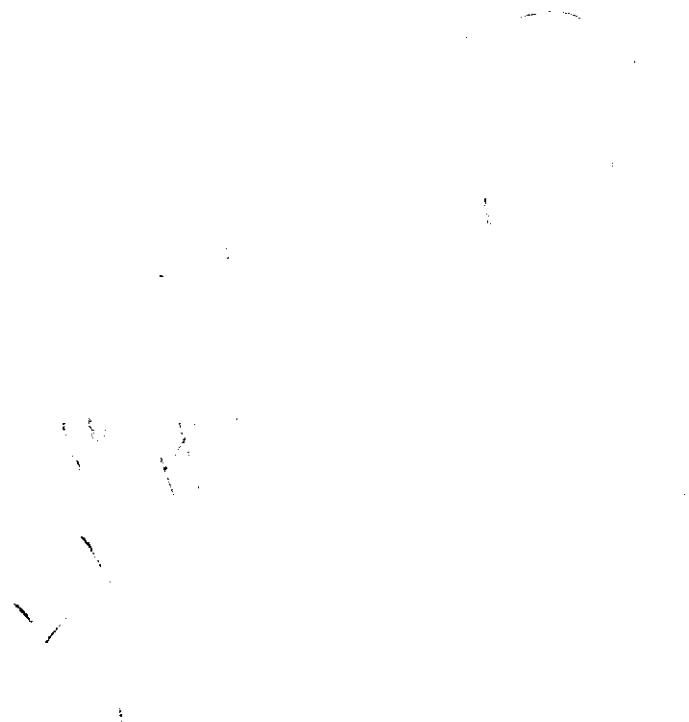
POWERED AIR PURIFYING CHEMICAL CARTRIDGES - HYDROGEN SULFIDE

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
1312	MSA	ON	2		SO2/Cl/ HCl/ClO2
1313	MSA	ON	2	HA	SO2/Cl/ HCl/ClO2
1314	MSA	ON	2	HA	SO2/Cl/ HCl/ClO2
NOT APPROVED FOR RADIONUCLIDES					
1315	MSA	FF	2		SO2/Cl/ HCl/ClO2
1316	MSA	FF	2	HA	SO2/Cl/ HCl/ClO2
1317	MSA	FF	2	HA	SO2/Cl/ HCl/ClO2
NOT APPROVED FOR RADIONUCLIDES					

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - MERCURY

Approval Number TC-23C-	Approval Issued to	Facepiece Type	Number of Cartridges	Other Approvals DFM	Gas and Vapor
1364	MSA	ON	2	HRA	HG
1365	MSA	FF	2	HRA	HG

VINYL CHLORIDE RESPIRATORS (II)



G. Vinyl Chloride

Approval

Approved as respiratory protection against 10 parts per million vinyl chloride.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instruction for changing sorbent element.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

VINYL CHLORIDE RESPIRATORS

Approval Number TC-11-	Approval Issued to	Respirator Type	Face- piece Type
1	Scott	Bm	ON

NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

A-BEC Industries
1864 Vanderhom Drive
Memphis, TN 38134

Ace Enterprises
820 Northwest 144th St.
Miami, FL 33168

Acme Automotive Finishes
101 Prospect Ave.
Cleveland, OH 44115

Air Components and Equipment, Inc.
P.O. Box 16988
Tampa, FL 33687

Air-Tek Development Co.
P.O. Box 66, Highway No. 37
Hibbing, MN 55746

Airolife Safety, Inc.
1601 E. 361st Street
Eastlake, Ohio 44094

Akron Safety Equipment, Inc.
Montreal, Quebec
CANADA

Anderson Manufacturing Co.
1014 Fox Chase Road
Rockledge, PA 19111

Auergesellschaft GmbH
1000 Berlin 65 (West)
Friedrich - Krause - Ufer 24
FEDERAL REPUBLIC OF GERMANY

Avon Industrial Polymers
Bath Road
Melksham Wiltshire, SN128AA
ENGLAND

Balkamp Incorporated
Indianapolis, IN 46241

Better Breathing, Inc.
15 Union Street
Lawrence, MA 01840

Binks Manufacturing Co.
9201 W. Belmont Ave.
Franklin Park, IL 60131

Biomarine Inc.
456 Creamery Way
Exton, PA 19341-2532

Breathing Systems, Inc.
15700-F Export Plaza
Houston, TX 77032

Bullard, E. D., Co.
Hwy. 356, White Oak Pike
Rt. 7, Box 596
Cynthiana, KY 41031-0187

Cabot Safety Corporation
(formerly American Optical)
90 Mechanic Street
Southbridge, MA 01550

Cairns and Brother
950 Ridge Road
Unit B14
Claymont, DE 19703

Canadian Technical Tape
455 Cote Vertu Rd.
Montreal H4N 1EB
CANADA

Cesco Safety Products
A Div. of Parmelee Industries, Inc.
P.O. Box 15965
Lenexa, KS 66215-5965

Clark Sand Company, Inc.
P.O. Box 4267
No. Erhmann Street
Pensacola, FL 32507

Clemco
1 Cable Car Drive
Washington, MO 63090

Clemtex, Ltd.
248 McCarthy Drive
Houston, TX 77020

Critical Products Group
4815 Gulf Freeway
Houston, TX 77023

CSE Corporation
600 Seco Road
Monroeville, PA 15146

Dan Am (SATA)
Highway 16-63 North
Spring Valley, MN 55975

NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

Defense Apparel
247 Addison Road
Windsor, CT 06095

Def-Tec Corporation
Rock Creek, OH

DeVilbiss Company
300 Phillips Ave.
P.O. Box 913
Toledo, OH 43692

Dragerwerk, AG
P.O. Box 1339
D-23542 Lubeck 1
FEDERAL REPUBLIC OF GERMANY

Dual Safe Life Support Systems, Inc.
P.O. Box 873
2315 West Main Street
Baytown, Texas 77520

E. I. DuPont de Nemours & Co.
Wilmington, DE 19898

Eastern Safety Equipment Co.
45-17 Pearson St.
Long Island City, NY 11101

Empire Abrasive Equipment Corp.
990 Gantry Road
Philadelphia, PA 19115

Encon Manufacturing Co.
13333 Northwest Freeway
P.O. Box 3826
Houston, TX 77007

ESAB Group, Inc.
P.O. Box 100545
Ebenezer Road
Florence, SC 29501-0545

Fiber-Metal, P.O. Box 248
Concordville, PA 19331

Louis M. Gerson Company
15 Sproat Street
Middleboro, MA 02346

Glendale Protective Technologies Inc.
130 Crossways Park Drive
Woodbury, NY 11797

Hornell Speedglas Inc.
2374 Edison Boulevard
Twinsburg, OH 44087-2340

International Safety Devices
16717 Smoketree Street
Hesperia, CA 92345

International Safety Instruments, Inc.
P.O. Box 846
Lawrenceville, GA 30246-0846

Interspiro USA, Inc.
31 Business Park Drive
Branford, CT 06405

Jackson Products
5801 Safety Drive
Belmont, MI 49306

Kasco Inc.
Via Romania 12
42100 Reggio Emilia
ITALY

Kelco Sales & Engineering Co.
P.O. Box 422
Norwalk, CA 90650

Key Houston, Inc.
13911 Atlanta Blvd.
Jacksonville, FL 32225

Koken, Ltd.
7, Yonbancho, Chiyoda-Ku
Tokyo, 102
JAPAN

Lab Safety Supply
P.O. Box 1368
Janesville, WI 53547-1368

Lancs Industries, Inc.
12704 NE 124th St.
Kirkland, WA 98003-4091

Litton Systems Inc.
Hickory Grove Road
P.O. Box 4508
Davenport, IA 52808-4508

Mafter Inc.
8111 Edison
Ville d'Anjou MTI
Quebec H1J LS9
CANADA

NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

The Marthens Company
1044 S. Dittmer Street
Davenport, IA 52802

Masprot S.C. el. & CIA LTDA.
Walker Martinez, N° 5558
(Par. 13G. Av.)
San Miguel - Santiago
CHILE

Mine Safety Appliances Co.
P.O. Box 439
Pittsburgh, PA 15230

Mohawk Industrial Supply Company
5 Glen Road
Manchester, CT 06040-6707

Moldex-Metrics Inc.
4671 Leahy Street
Culver City, CA 90230

MSA DE CHILI LTDA.
Santiago
CHILE

3M Company
OH & ES Division
Building 260-3A-07
St. Paul, MN 55144

National Draeger, Inc.
101 Technology Drive
P.O. Box 120
Pittsburgh, PA 15230

National Mine Service
600 N. Bell Ave.
Bldg. 2, Ste. 110
Carnegie, PA 15106

Neoterik Health Tech., Inc.
P.O. Box 128
Woodsboro, MD 21798

New England Thermoplastics
15 Union Street, Stone Mill
P.O. Box 490
Lawrence, MA 01842-1090

North Safety Equipment
A Div. of Siebe North, Inc.
2000 Plainfield Pike
Cranston, RI 02921

Northcott Products Co.
1826 W. Diversey Parkway
Chicago, IL 60614

Northstar Manufacturing Company, Inc.
330 Powell Road, Suite 5
Spring, Texas 77373

Nuclear Power Outfitters
P.O. Box 737
Crystal Lake, IL 60014

Ocenco, Inc.
Lakeview Corporate Center
10255 82nd Avenue
Kenosha, WI 53142-7737

O-Two Systems International
7575 Kimbel Street
Mississauga, Ontario
CANADA L5S 1C8

Parmelee Industries, Inc.
P.O. Box 15965
Lenexa, KS 66215-5965

Pauli & Griffin
137 Utah Ave.
South San Francisco, CA 94080

Industrie Pirelli
Azienda Articoli Vari Roma
Via di Torrespaccata 140, 00169
Rome, Italy

Porter Warner Industries
3819 Dorris Street
P.O. Box 2158
Chattanooga, TN 37409

Power Master, Inc.
1015 Raymond Street
Gonzales, LA 70737

Pro-Tech Respirators, Inc.
107 East Alexander St.
P.O. Box 192
Buchanan, MI 49107

Pulmosan Protective Equipment Corp.
P.O. Box 622
Reading, PA 19603

NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

Pulsafe Safety Products
Holmethorpe Avenue
Redhill, Surrey
ENGLAND RH1 2PA

Racal Health and Safety, Inc.
7305 Executive Way
Frederick, MD 21701-8354

Respiratory Systems, Inc.
16912A Von Karman Avenue
Irvine, CA 92714

Rexnord Electronic Products, Inc.
(See Biomarine, Inc.)

Safe-Tex
Toronto, Ontario
CANADA

Safety and Supply Co.
9369 8th Avenue South
Seattle, WA 98108

Safety Products Limited
Holmethorpe Avenue, Redhill
Surrey RH1 2PA
UNITED KINGDOM

Safety Supply Co.
Toronto, Ontario
CANADA

Sam Gong Industrial Co, Ltd.
18022 Cowan
Suite 20814
Irvine, CA 92714

SATA-Farbspritztechnik GmbH & Co.
DomertaistraBe 20
P.O. Box 1828
D-7014 Kornwesthelm
FEDERAL REPUBLIC OF GERMANY

Schmidt Manufacturing Inc.
14400 Alameda Road
P.O. Box 45857
Houston, TX 77045

Scott Aviation
A Figgie International Company
225 Erie Street
Lancaster, NY 14086

Sellstrom Manufacturing Co.
59 E. Van Buren St.
Chicago, IL 60605

Shoplyne Safety Products
Cleveland, Ohio 44107

Siebe-Norton Safety Products
2000 Plainfield Pike
Cranston, RI 02920

Siebe Gorman, Ltd.
Avondale Way
Cwmbran, Gwent, Wales
NP4, 1YR, Chessington Surrey
GREAT BRITAIN

Spring Protezione s.r.i.
Via Maremagna, 5
41058 Vignola (Modena)
ITALY

Standard Safety Equipment Corp.
431 N. Quentin Road
P.O. Box 188
Palatine, IL 60067

Stewart-Warner
Chicago, IL

Sulliblast
Division of Sullair, Inc.
105 Lauren Drive
Belle Chase, LA 70037

Supplied Air Monitoring Systems
415 W. House Street
Alvin, TX 77511

Survivair, Inc.
3001 S. Susan Ave.
Santa Ana, CA 92704

Titan Abrasive Systems, Inc.
P.O. Box 3
Furlong, PA 18925

Trusafe, Inc.
9369 8th Avenue South
Seattle, WA 98108

United States Safety Service
A Div. of Parmelee Industries, Inc.
P.O. Box 15965
Lenexa, KS 66215-5965

NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

UVEX Safety, Inc.
10 Thurber Boulevard
Smithfield, RI 02917-1895

Vortec Corporation
10125 Carver Road
Cincinnati, OH 45242

Willson Safety Products
P.O. Box 622
Reading, PA 19603-0622

Zee Medical Products Co.
Irvine, CA 92714

APPENDIX

Appendix: NIOSH RESPIRATOR PROBLEM INVESTIGATION

NIOSH receives reports of problems with MSHA/NIOSH-certified respirators from end-users, regulatory agencies (Federal, state, local), labor unions, the NIOSH Post-Certification Audit Program, and from the respirator manufacturers themselves. The manufacturers have shown an increased willingness to accept the need to recall and correct defective respirators. When necessary, NIOSH will issue respirator user's notices in cases of extreme urgency or whenever a manufacturer cannot effectively reach the applicable respirator users.

Respirator users are encouraged to work with respirator manufacturers, in an effort to resolve future problems. NIOSH, when advised of such problems, will monitor the manufacturers' investigations and corrective actions.

In recent audits of certified respirators, NIOSH has found repeated failure of the manufacturers to properly mark the respirator components. These markings are specified on the certification label for each respirator. Although this nonconformance to the certification requirements is not serious, the markings are necessary for NIOSH to assure that respirators are properly assembled, if defects are found. NIOSH requests, therefore, reports from users on mis-marked or unmarked respirator component parts.

The following is an up-to-date list of the names and addresses of persons responsible for investigation of problems with MSHA/NIOSH-certified respirators:

Mr. Josef Bartos
Aiolife Safety Incorporated
1601 E. 361st Street
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Mr. Mark Theno
Air-Tek Development Company
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Lawrence, MA 01840

Mr. Raymond O. Day
Mr. Robert Meyer
Binks Manufacturing Co.
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Franklin Park, IL 60131

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Exton, PA 19341-2532

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Houston, TX 77032

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Claymont, DE 19703

Mr. Harmut Holzbaur
Canadian Technical Tape
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Clemco
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Washington, MO 63090

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Defense Apparel
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Hartford, CT 06114

Dr. Helmut Sieber
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D-23542 Lubeck 1
FEDERAL REPUBLIC OF GERMANY

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Woodbury, NY 11797

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Hornell Speedglas Inc.
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Twinsburg, OH 44087-2340

Mr. Craig Martin
International Safety Devices
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Hesperia, CA 92345

Mr. Tim Klaes
International Safety Instruments
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Lawrenceville, GA 30246-0846

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Interspiro/AGA Corporation
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Branford, CT 06405

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Kasco
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42100 Reggio Emilia
ITALY

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Lancs Industries
12704 N. E. 124th Street
Kirkland, WA 98033-4091

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Hickory Grove Road
P.O. Box 4508
Davenport, IA 52808-4508

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3M Company 3M Center
Building 260-03-02
St. Paul, MN 55144

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Masprot S.C. el. & CIA LTDA.
Walker Martinez, No 5558
(Par.13G. Av.) San Miguel
Santiago, CHILE

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P.O. Box 439
Pittsburgh, Pennsylvania 15230

Mr. Ronald Ring
Mine Safety Appliances Company
Instruments Division
P.O. Box 427
Pittsburgh, PA 15230

Mr. Himat Tank
Moldex/Metrics, Inc.
4671 Leahy Street
Culver City, CA 90230

Mr. Robert Sell
Mr. Daniel Thompson
National Draeger, Inc.
P. O. Box 120
Pittsburgh, PA 15230

Mr. Jim Wiggins
Neoterik Health Tech., Inc.
P.O. Box 128
Woodsboro, MD 21798

Mr. John A. Constantineau
New England Thermoplastics
15 Union Street-Stone Mill
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North Safety Equipment
2000 Plainfield Pike
Cranston, RI 02921

Mr. Don Davis
Northstar Manufacturing Co., Inc.
330 Powell Road, Suite 5
Spring, TX 77373

Mr. Earl B. Jacobson
Nuclear Power Outfitters
PO Box 737
Crystal Lake, IL 60014

Mr. Pat Droppleman
Ocenco, Incorporated
Lakeview Corporate Center
10255 82nd Avenue
Kenosha, WI 53142-7737

Mr. Peter Yuen
O-Two Systems International
7575 Kimbel Street
Mississauga, Ontario
CANADA L5S 1C8

Mr. Ing G. Cappa
Sekur S.P.A. - Pirelli Group
Via di Torrespaccata, 140
00169 Roma
ITALY

Mr. Gary Maxan
Power Master, Inc.
1015 Raymond Street
Gonzales, LA 70737

Mr. Gary Maxan
Pro-Tech Respirators, Inc.
107 East Alexander St.
Buchanan, MI 49107

Ms. Doris Walter
Pulmosan Protective Equipment Corp.
P.O. Box 622
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Mr. Robert Brennan
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Mr. Merlin Hoisegh
Supplied Air Monitoring Systems
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Alvin, TX 77511

Dr. Richard Stein
Survivair
A Division of Comasec Inc.
3001 S. Susan Street
Santa Ana, CA 92704

Ms. Lorri Perron
U.S. Safety, Div. of Parmelee, Inc.
P.O. Box 15965
Lenexa, KS 66215-5965

Mr. Sack Siegel
Trusafe, Inc.
9369 8th Ave South
Seattle, WA 98108

Ms. Doris Walter
Willson Safety Products
PO Box 622
Reading, PA 19603

National Institute for Occupational Safety and Health

Respirator Problem Coordinator
Division of Safety Research
Certification and Quality Assurance Branch
NIOSH, CDC, PHS, HHS
944 Chestnut Ridge Road, MS P-1138
Morgantown, WV 26505-2888
(304) 284-5713
Fax (304) 284-5877

THE FOLLOWING USERS' NOTICES HAVE BEEN ISSUED BY NIOSH SINCE JANUARY 1, 1992:



Centers for Disease Control
National Institute for Occupational
Safety and Health - ALOSH
944 Chestnut Ridge Road
Morgantown, WV 26505-2888

**Letter to All Respirator Manufacturers
February 25, 1993**

SUBJECT: Application Procedures for the Approval of Respirators

Enclosed are new application procedures which all manufacturers are to use for submitting requests for approval of respirators. The primary changes from past practices include:

1. A section on definitions for clarity.
2. An application form which all manufacturers must use. This form is available as a WordPerfect document. If a manufacturer submits a formatted 3.5 inch disk to us, we will copy the form onto the disk and return it.
3. A respirator testing selection guide which indicates which tests will be performed, and the number of samples needed for testing. Samples are to be submitted with the application.
4. A fee schedule which has been clarified. Fees are to be submitted with the application.
5. Assignment of a manufacturer assigned tracking number for traceability.
6. Limitations of how many requests may be contained in an application.

Overall, fees and required information have not changed. These procedures are to improve clarity, efficiency, and effectiveness of the approval process while answering many of the common questions which we receive.

If we can be of any further assistance, please contact our office at (304) 284-5714.

Sincerely yours,

Richard W. Metzler, Chief
Certification and Quality
Assurance Branch
Division of Safety Research

Enclosure



Centers for Disease Control
National Institute for Occupational
Safety and Health - ALOSH
944 Chestnut Ridge Road
Morgantown, WV 26505-2888

Notice to Respirator Users

Safety Advisory on Sudden Neck Failures of Luxfer DOT-E 7235 4500 PSI Hoop Wrapped Aluminum Cylinders

April 30, 1993

The National Institute for Occupational Safety and Health (NIOSH) has recently been informed of a fatality involving a firefighter who was charging a Luxfer DOT-E 7235 4500 PSI hoop-wrapped aluminum cylinder. Hoop-wrapped cylinders may be identified by the lack of fiberglass reinforcement on the neck and the base. The cylinder ruptured at the neck, striking the victim. The cylinder apparently had not been retrofitted with a neck reinforcing ring as required by both the Department of Transportation (DOT) and NIOSH.

One other failure has occurred with this type of cylinder. As a result of this failure, the DOT/Research and Special Programs Administration issued a notice requiring a neck reinforcing ring to be added to both newly-produced, as well as field-deployed cylinders since October 1, 1985. The original DOT Safety Advisory Notice was published in 50 Federal Register (FR) 32944 (August 15, 1985) and another DOT Safety Advisory Notice was published in 58 FR 15895 (March 24, 1993).

The cylinder should have been removed from service in 1985 until a neck reinforcing ring had been installed. This would be in accordance with the manufacturer's safety recommendations and DOT and NIOSH users notices. In addition to the lack of a neck reinforcing ring, the cylinder was in service beyond the DOT approved 15-year service life. The cylinder had also been hydrostatically retested since 1985, even though the lack of a neck ring should have precluded it from undergoing such testing.

It is recommended by NIOSH that users of Luxfer DOT-E 7235 4500 PSI cylinders immediately inspect all such cylinders and remove from service any cylinders that meet any one or more of the following criteria:

1. A steel neck reinforcing ring is not present.
2. The service life (15 years from date of manufacture) has been exceeded.

3. A current hydrostatic test date is not stamped on the cylinder neck. Each DOT-E 7235 4500 PSI cylinder must be hydrostatically retested every 3 years in accordance with requirements of the Code of Federal Regulations, Title 49, Part 173.34(e).

It is also important that all users follow the manufacturer's recommended safe work practices when charging and handling any charged cylinders.

Alfred A. Amendola

Thomas R. Bender, M.D., M.P.H.

for Director

Division of Safety Research



Centers for Disease Control
National Institute for Occupational
Safety and Health - ALOSH
944 Chestnut Ridge Road
Morgantown, WV 26505-2888

**ALL COAL MINE DUST PERSONAL SAMPLER UNIT MANUFACTURERS
June 19, 1992**

The National Institute for Occupational Safety and Health (NIOSH) has reviewed 30 CFR Part 74 regulatory requirements and revised approval tests for coal mine dust personal sampler units to improve sample integrity and validity. In an attempt to address the problem of tampering, NIOSH reviewed the general and specific requirements of Part 74.3 and revised the filter assembly test procedures to include tamper-resistant criteria. All designs are required to meet these approval test standards.

The revised list of filter cassette certification tests is as follows:

1. Cassette Dimension Tests:

1.A. Cassette Dimension Compliance with Blueprints

Title 30 CFR Part 74.6(c) requires all manufacturers, as part of the application process, to submit drawings and specifications which are adequate in number and fully detailed to identify the design of the coal mine dust personal sampler unit or pump unit thereof to disclose the dimensions and materials of all component parts. Measurements of the dimensions of all component parts will be performed with calibrated instruments to ensure that the dimensions of production models conform precisely to the dimensions prescribed in manufacturer drawings and specifications. Dimensional tolerances must be maintained within ± 0.127 mm (± 0.005 inch) unless otherwise stated by the manufacturer. Greater tolerance specifications by the manufacturer are subject to a certification performance evaluation finding that the greater tolerances have no detrimental effect on the performance of the component or composite coal mine dust personal sampler unit.

2. Capsule Weight Tests:

2.A. Capsule Total Weight and Manufacturer's Prewrite Tests

Title 30 CFR Part 74.3(b)(2)(ii) requires that the capsule weight, including the enclosed filter, shall

not exceed 5 grams and it shall be preweighed by the manufacturer with a precision of ± 0.1 milligram (mg). Capsule weights will be determined on a calibrated microbalance after a minimum of 16 hours of storage at $22 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ relative humidity in the NIOSH environmental weighing chamber. Measured total capsule weights must not exceed 5.0 grams and must be within ± 0.1 mg of the manufacturer's recorded preweight.

2.B. Cassette Drop and Tumbling-Weight Loss Tests

Title 30 CFR Part 74.3(b)(2)(ii) requires that impact to the capsule shall not dislodge any dust from the capsule, which might then be lost to weight measurement. Preloaded and weighed cassettes (without plugs or covers) will be dropped from a height of 5 feet onto the inlet, outlet, and side, and allowed to come to rest. Preloaded and properly sealed cassettes will be placed in mailers provided by the manufacturer and tumbled for 4 hours. The capsule within every test cassette must sustain the drop or tumbling impacts without incurring a weight change greater than $\pm 5\%$ of the loaded preweight.

2.C. Filter Capsule Material on Cassette Cover Tests

Title 30 CFR Part 74.3(b)(2)(iii) requires that the cassette must be easily removable without causing a loss or gain of capsule weight. A filter cassette must be easily opened in a manner prescribed by the manufacturer which does not disturb dust deposits inside the filter capsule or corrupt weighing results. When a filter cassette is opened and the filter capsule removed for weighing, filter capsule material shall not be identified adhering to cassette surfaces, nor shall any cassette material be identified adhering to the filter capsule.

3. Filter Capsule Material and Media Tests:

3.A. Nonhygroscopic Filter and Filter Capsule Material Tests

Title 30 CFR Part 74.3(b)(2)(i) and (ii) require that the filter and capsule be nonhygroscopic. The mass of preweighed filter capsules in cassettes subjected to a minimum of 16-hours conditioning at 28°C and 85 to 100% relative humidity, shall not change more than ± 0.1 mg when weighed within 10 minutes of removal from the humidity chamber.

3.B. Filter Resistance Tests

Title 30 CFR Part 74.3(b)(2)(i) requires that the filter resistance shall not be more than 2.0 inches of water at an airflow rate of 2 liters per minute (lpm). A constant flow sampling pump calibrated at 2.0 ± 0.1 lpm is used to draw room air through the filter cassette while an in-line calibrated electronic manometer measures resistance. Filter resistance is determined from the difference between the resistance of the filter cassette as received, and the resistance of the filter cassette with only the membrane filter removed. The calculated filter resistance must not be more than 2.0 inches of water.

3.C. Filter Porosity and Media Particle Size Collection Efficiency Tests

Title 30 CFR Part 74.3(b)(2)(i) requires that the filter shall be a membrane filter type with a nominal pore size not over 5 micrometers. A poly-dispersed Pittsburgh No. 8 coal mine dust aerosol (0.01 to $30 \mu\text{m}$ particle size range) will be sampled at 2.0 lpm for 1 minute through a cassette connected to a calibrated TSI Aerodynamic Particle Sizer (APS). No coal mine dust particles larger than $5.0 \mu\text{m}$ shall be detected by the APS during the sampling period.

ALTERNATE TEST: An aerosol of $5.07 \pm 0.038 \mu\text{m}$ certified-grade polystyrene latex spheres will be sampled at a flow rate of 2.0 lpm with the candidate filter cassette, followed by a preweighed $1.0 \mu\text{m}$ filter cassette. Aerosol penetrating the candidate cassette shall not be larger than $5.0 \mu\text{m}$ nor cause the $1.0 \mu\text{m}$ backup filter to gain weight more than 0.05 mg at the end of a 4-hour sampling period and the filter collection efficiency must be greater than 98% for all particles larger than $1.0 \mu\text{m}$.

3.D. Alcohol and Ultrasonic Degradation Filter Media Tests

Title 30 CFR Part 74.3(b)(2)(i) requires that the filter capsule shall not dissolve or decompose when immersed in ethyl or isopropyl alcohol. The strength and surface characteristics of the filter shall be such that the dust deposited on its surface may be removed by ultrasonic methods without tearing the filter. Filters will be immersed in ethyl or isopropyl alcohol and subjected to ultrasonic dust removal at 55 KHz and 120 watts for a period of time that removes 90% of the collected dust (30 seconds minimum). Upon removal from

the ultrasonic bath, the filter shall not show any sign of tearing or degradation when subjected to microscopic examination.

4. Cassette Seal Integrity Tests:

4.A. Inlet and Outlet Cover Seal Tests

Title 30 CFR Part 74.3(b)(2)(iii) requires that appropriate covers shall be provided to prevent contaminants from entering, or dust from leaving, the capsule when it is not in use. Newly manufactured cassettes as received from the manufacturer, and loaded cassettes with covers replaced, will be inserted in mailers provided by the manufacturer and tumbled for 4 hours. All inlet and outlet covers shall be in place on all filter cassettes received from the manufacturer. Inlet and outlet covers shall not be dislodged during the tumbling test.

4.B. Outside Periphery Seal Tests

Title 30 CFR Part 74.3(b)(2)(iii) requires that the cassette shall enclose the capsule so as to prevent contamination. The integrity of the external seal around the periphery of the inlet and outlet cassette joint, shall be tested for a total of 4 hours by applying a static vacuum of 4 inches of water on a cassette with an airtight inlet plug or cover. Measured leakage shall not be more than 0.1 liters per hour during the 4-hour test.

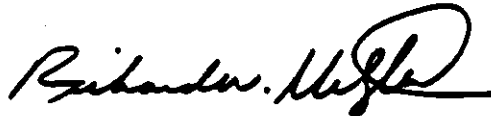
5. Filter Capsule Protector Tests:

5.A. Filter Media Accessibility and Reverse Flushing Mechanism Tests

Several sections of Title 30 CFR Part 74 demonstrate the intent of NIOSH and the Mine Safety and Health Administration to provide assurances for the accuracy, integrity, and validity of samples collected under coal mine operator respirable dust control plans. Title 30 Part 74 requires that the filter capsule be protected. NIOSH is instituting a test requiring that incidental probing of the inlet with a vacuum pipet, or incidental subsection of a cassette to 8 psi airflows in reverse

directions, during use or non-use periods, shall not alter the preloaded weight by more than ± 5 percent.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Richard W. Metzler". The signature is fluid and cursive, with a large, prominent initial "R" and "M".

Richard W. Metzler, Chief
Certification and Quality
Assurance Branch
Division of Safety Research



Centers for Disease Control
National Institute for Occupational
Safety and Health – ALOSH
944 Chestnut Ridge Road
Morgantown, WV 26505-2888

LETTER TO ALL RESPIRATOR MANUFACTURERS
July 15, 1992

SUBJECT: Submissions for Approval, Extension, Modification, etc.

In the near future, the management, quality assurance, and administrative offices of the Certification and Quality Assurance Branch (CQAB) will be moving to another location. However, the mailing address will remain 944 Chestnut Ridge Road, Morgantown, West Virginia 26505.

The laboratories of CQAB will not be moving. Therefore, to process applications for approval in a smooth and expeditious manner the following guidelines are recommended:

Separate the application (paperwork) from the hardware to be tested. The application should be sent to Mr. Richard W. Metzler, Chief, CQAB.

Send all air-purifying respirators (hardware) for testing to the attention of Gary Fletcher (filter respirators) or Cathy Calvert (gas masks and chemical cartridges), CQAB.

Send all air-supplied respirators (hardware) for testing to the attention of Mike Commodore (self-contained breathing apparatus) or Doug Riffle (supplied-air respirators), CQAB.

Although part of CQAB will be remotely located, applications will be expedited if they are separated from the hardware and mailed as requested.

We appreciate your cooperation and patience.

Sincerely yours,

Richard W. Metzler, Chief
Certification and Quality
Assurance Branch
Division of Safety Research



Centers for Disease Control
National Institute for Occupational
Safety and Health – ALOSH
944 Chestnut Ridge Road
Morgantown, WV 26505-2888

**Letter to All Manufacturers of Self-Contained Breathing Apparatus
August 4, 1993**

The National Institute for Occupational Safety and Health (NIOSH) has received a report of a situation where manufacturers of self-contained breathing apparatus (SCBA) have been advised by the National Fire Protection Association (NFPA) that modifications to NIOSH-approved SCBA do not have to be reported to NIOSH. This situation involves the upgrade of NIOSH-approved SCBA to meet the requirements for approval by the NFPA, 1981 Standard on Open-Circuit SCBA for Fire Fighters, 1992 Edition. Your assistance in stopping the spread of any incorrect information is requested.

Discussions with representatives of the Safety Equipment Institute (SEI) and a respirator manufacturer have indicated that some confusion exists among the NFPA, SEI, and others concerning the approval of upgrades or modifications to existing NIOSH-approved respirators. Title 30, Code of Federal Regulations, Part 11.35 clearly requires that all modifications to approved respirators be submitted for NIOSH evaluation and approval before such modifications can be implemented. Extensions of approval are issued by NIOSH after the manufacturer has demonstrated that the modified respirators meet the applicable performance and quality assurance requirements of Title 30, Code of Federal Regulations, Part 11. Blanket extensions of approvals that would allow a modification of one respirator approval to be used on another respirator approval are not issued by NIOSH. When upgrades affect the subassembly part numbers listed on the lower portion of the NIOSH approval label, the label must be modified to reflect the new numbers and label date. The NFPA has been advised in writing of this policy.

The issues of approving changes to NIOSH-approved respirators and the effect on the approval status have been discussed in letters to all respirator manufacturers dated March 3 and June 19, 1980, and in a letter to all respirator users dated November 6, 1984. The NIOSH policy on this matter has never changed.

Manufacturers of SCBA who wish to upgrade NIOSH-approved devices to meet the NFPA, 1981 Standard, 1992 Edition, are advised that all such upgrades must be evaluated and approved by NIOSH in order for the NIOSH approval to remain in effect. Any devices in service that incorporate upgrades not evaluated and approved by NIOSH are no longer considered NIOSH approved.

Page 2

If you have any comments or require additional information,
please contact me at (304) 284-5713.

Sincerely yours,



Richard W. Metzler, Chief
Certification and Quality
Assurance Branch
Division of Safety Research



Centers for Disease Control
National Institute for Occupational
Safety and Health – ALOSH
944 Chestnut Ridge Road
Morgantown, WV 26505-2888
September 27, 1993

Letter to All Respirator Manufacturers
Subject: Carbon Tetrachloride Substitute Test Agent
for Nonpowered Negative-Pressure Organic Vapor Cartridges

The Environmental Protection Agency recently proposed conforming its stratospheric ozone protection regulations (40 CFR 82) to the requirements of Title VI of the Clean Air Act Amendments of 1990 (PL 101-549). This action has affected the supplies of carbon tetrachloride by immediately limiting and perhaps ultimately causing it to be phased out of production.

The Code of Federal Regulations (30 CFR Part 11, Subpart L, Section 11.162-8) mandates the use of carbon tetrachloride for testing organic vapor cartridges. Therefore, it has become necessary to find a suitable substitute test agent. The National Institute for Occupational Safety and Health (NIOSH) has conducted research to this end. Testing of substitute agents, at various challenge concentrations and testing conditions, identified certain agents with breakthrough characteristics similar to carbon tetrachloride.

Testing has shown that the single most critical nonpowered negative pressure cartridge test condition, under the requirements of 30 CFR 11.162.8, is the "as received" condition, with testing performed at 1000 ppm, 64 LPM, 50% relative humidity (RH), 25 degrees C and a 50-minute minimum breakthrough time. The preconditioning requirements were not addressed because they have been shown to be less critical, time consuming, variable, and not representative of use-type RH conditions.

Correlation testing, performed to match the "as received" parameters, resulted in pentane at 550 ppm, 64 LPM, 80% RH, 25°C, and a 40 minute breakthrough time. The threshold point estimate for pentane was determined using a parametric survival model assuming that the failure times of the cartridges follow a Weibull distribution.

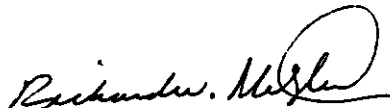
Therefore, the Certification and Quality Assurance Branch will now accept the use of pentane in place of carbon tetrachloride for all certification and quality control work. Note, however, that pentane is highly volatile. Proper cautions and information, such as material safety data sheets, should be observed.

Substitution is not limited to pentane. Other agents may be used. However, data demonstrating equivalency of the selected agent with carbon tetrachloride must be provided by the respirator manufacturer.

For the present, NIOSH will continue using carbon tetrachloride as the test agent and will change to pentane when carbon tetrachloride is no longer readily available.

If we can be of any further assistance, please contact Dr. Ernest S. Moyer, Ph.D. at (304) 284-5714.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Richard W. Metzler". The signature is written in dark ink and is positioned above the typed name.

Richard W. Metzler, Chief
Certification and Quality
Assurance Branch
Division of Safety Research



Centers for Disease Control
National Institute for Occupational
Safety and Health – ALOSH
944 Chestnut Ridge Road
Morgantown, WV 26505--2888

October 4, 1993

**Notice to All Users of Type CE, Abrasive-Blast
Supplied-Air Respirators**

The National Institute for Occupational Safety and Health (NIOSH) has recently received several requests for information concerning the proper selection and use of respirators for abrasive-blast (sandblasting) operations. The nature of these requests suggests that users are not well-informed of the information necessary to properly select and use a Type CE, abrasive-blast, supplied-air respirator (SAR). Field surveillance work by NIOSH has confirmed this observation. Title 29, Code of Federal Regulations, 1910.94(a)(1)(ii) defines an abrasive-blast respirator as a continuous-flow air-line respirator constructed to protect the user's head, neck, and shoulders from rebounding abrasives. This was the only available equipment at the time the regulation was implemented. Positive-pressure Type CE, abrasive-blast respirators are now available, and NIOSH recommends their use when crystalline silica is used as the abrasive agent because of the health effects associated with inhalation of silica dust. Improper use of these respirators may result in serious health effects, trauma, or death.

Many aspects must be considered when selecting respiratory protection for use in sandblasting operations, including the toxicity of the dust (e.g., lead) from the surface being blasted. Respirators should not be used as the only means of preventing or minimizing exposures to airborne contaminants. Dust source controls such as containment systems, local exhaust systems, and good work practices should be implemented as the primary means of protecting workers. When dust source controls cannot keep exposures below the recommended exposure limits, controls should be supplemented with the use of respiratory protection.

When respirators are used, the employer must establish a comprehensive respiratory protection program as required in the Occupational Safety and Health Administration Respiratory Protection Standard, Title 29, Code of Federal Regulations, 1910.134(b). Important aspects of a respiratory protection program include the following:

1. Program coordination by a designated responsible individual.
2. Evaluation of each worker's ability to perform the work while wearing a respirator.
3. Periodic training.
4. Periodic environmental monitoring.
5. Respirator-fit testing.
6. Maintenance, inspection, cleaning, and storage of the respirators.
7. Selection of the proper NIOSH-approved respirator.

Type CE abrasive-blast respirators are the only respirators suitable for use in abrasive-blasting operations. Currently there are only three models of Type CE abrasive-blast respirators certified: (1) a continuous-flow respirator containing a loose-fitting hood with a protection factor of 25; (2) a continuous-flow respirator containing a tight-fitting facepiece with a protection factor of 50; and (3) a pressure-demand respirator containing a tight-fitting facepiece with a protection factor of 2000.

The first two models, which are continuous-flow respirators, can only be used for abrasive-blast operations where the abrasive materials do not include silica sand, and the level of contaminant in the ambient air does not exceed 25 or 50 times the recommended exposure limit, respectively. The third model, which is a pressure-demand respirator, must be worn whenever silica sand is used as an abrasive material. The pressure-demand Type CE respirator always incorporates a tight-fitting full facepiece under the protective shroud and positive-pressure is maintained within.

It is recommended by NIOSH that the following safety and health precautions be taken in all abrasive-blasting operations:

1. Use an abrasive medium other than silica sand whenever possible.
2. If silica sand must be used, the only respirator suitable for use is a Type CE, pressure-demand, abrasive-blast SAR (i.e., with an assigned protection factor of 2000).
3. Continuous-flow, Type CE, abrasive-blast SARs should only be used if (a) silica sand is **NOT** used as the blasting agent **AND** (b) workplace monitoring indicates that an APF of 25 for loose-fitting hoods or 50 for tight-fitting respirators will provide adequate protection.
4. Continuous-flow, Type CE, abrasive-blast SARs should be operated near the upper limit of the NIOSH-approved operating pressure range. Operation in this manner will ensure the respirator provides maximum protection to the user.
5. Type I, Grade D respirable air meeting the requirements of the Compressed Gas Association, G-7.1, Commodity Specification for Air, must be supplied to the respirator at all times. The air quality must be monitored at regular intervals to ensure continued compliance.
6. The source of respirable air must be kept in a clean environment and must contain adequate filtration to prevent entry of contaminants into the respirable air.
7. The respirable airstream should be separate and isolated from the abrasive-blasting airstream. The connection fittings should not be interchangeable between the respirable air and abrasive air delivery systems.

If you require additional information, or have further questions, please contact NIOSH by calling (304) 284-5713.

Sincerely yours,



Thomas R. Bender, M.D., M.P.H.
Director
Division of Safety Research

Se puede obtener la versión en español de este Aviso escribiendo a Publications Dissemination, DSDTT, National Institute for Occupational Health, 4676 Columbia Parkway, Cincinnati, OH 45226.

A Spanish version of this notice may be obtained by writing to Publications Dissemination, DSDTT, National Institute for Occupational Safety and Health, 4676 Columbia Parkway, Cincinnati, OH 45226.

Centers for Disease Control
National Institute for Occupational
Safety and Health — ALOSH
944 Chestnut Ridge Road
Morgantown, WV 26505-2888

Octubre 4, 1993

Aviso a todos los usuarios de respiradores con suministro independiente de aire para uso en operaciones de limpieza por chorro de arena

El National Institute for Occupational Safety and Health (NIOSH) (Instituto Nacional para la Salud y Seguridad en el Trabajo) ha recibido recientemente varias solicitudes de información con respecto a la selección y uso correcto de respiradores para operaciones de limpieza por chorro de arena. La naturaleza de estas solicitudes sugiere que los usuarios no están bien informados para poder seleccionar y usar correctamente el respirador de tipo CE, con suministro independiente de aire (SAR son las siglas en inglés), para operaciones de limpieza por chorro de arena. Los trabajos de investigación, efectuados por NIOSH en los sitios de obras, han confirmado esta observación. El Título 29 del Código de Reglamentos Federales, 1910.94(a)(1)(ii) define un respirador para uso en la limpieza por chorro de arena como un respirador, con flujo continuo de aire, construido para proteger la cabeza, cuello y hombros del usuario contra el rebote de sustancias abrasivas. Este era el único tipo de equipo disponible cuando se implementó la Reglamentación. Los respiradores tipo CE, de presión positiva, ya están a la venta y NIOSH recomienda que sean usados cuando se utilice sílice cristalino como agente abrasivo, debido a los efectos nocivos asociados con la inhalación del polvo de sílice. El uso incorrecto de estos respiradores puede resultar en serios problemas de salud, trauma o muerte.

Se deben considerar muchos aspectos al seleccionar la protección respiratoria necesaria para uso en las operaciones de limpieza por chorro de arena o mediante el uso de otras sustancias abrasivas, incluyendo la toxicidad del polvo (por ejemplo, plomo) que pueda ser desprendido de la superficie que se esté limpiando. Los respiradores no se deben usar como la única forma de evitar o reducir la exposición a los contaminantes en el aire. Se deben implementar también sistemas para controlar el polvo en el punto de origen, tales como sistemas para contener el polvo, sistemas locales de evacuación de aire, y buenas prácticas de trabajo como medidas primarias de protección para los trabajadores. Cuando los sistemas de control de polvo en el punto de origen no pueden mantener la exposición en un nivel inferior de los límites recomendados, estos sistemas se deben suplementar mediante el uso de protección respiratoria.

Cuando se utilicen respiradores, la compañía o patrón que los utilice debe establecer un programa completo de protección respiratoria, como lo requiere la norma de Protección Respiratoria de la

Administración de Salud y Seguridad en el Trabajo, Título 29, Código de Reglamentos Federales, 1910.134(b). El programa de protección respiratoria debe incluir los siguientes aspectos importantes:

1. Coordinación del programa por una persona responsable.
2. Evaluación de la habilidad de cada trabajador para efectuar el trabajo mientras usa un respirador.
3. Adiestramiento periódico.
4. Observación o monitoreo ambiental en forma periódica.
5. Pruebas para asegurar que el respirador está correctamente ajustado a la cara.
6. Mantenimiento, inspección, limpieza y almacenaje de los respiradores.
7. Selección de un respirador adecuado y aprobado por NIOSH.

Los respiradores tipo CE son los únicos respiradores apropiados para uso en las operaciones de limpieza por chorro de arena o por chorro de otras sustancias abrasivas. Actualmente existen solamente tres modelos certificados de respiradores tipo CE: (1) un respirador de flujo continuo con una capucha de ajuste holgado y un factor de protección de 25; (2) un respirador de flujo continuo con una máscara de ajuste preciso y un factor de protección de 50; y (3) un respirador de demanda a presión con una máscara de ajuste preciso y un factor de protección de 2000.

Los dos primeros modelos, que son respiradores de flujo continuo, se pueden usar solamente en las operaciones de limpieza con chorro de materiales abrasivos cuando dichos materiales no contienen arena de sílice y el nivel de contaminantes en el ambiente no excede 25 ó 50 veces el límite recomendado de exposición, respectivamente. El tercer modelo, que es un respirador de demanda a presión, se debe usar siempre que se utilice arena de sílice como material abrasivo. El respirador tipo CE de demanda de presión siempre incluye una máscara de ajuste preciso bajo una cubierta protectora dentro de la que se mantiene una presión positiva de aire.

NIOSH recomienda que se tomen las siguientes precauciones de seguridad y salud en todas las operaciones de limpieza por chorro de arena:

1. Siempre que sea posible, use un medio abrasivo que no contenga arena de sílice.
2. Si se debe usar arena de sílice, el único respirador apropiado es un respirador SAR de tipo CE y demanda a presión (o sea, con un factor asignado de protección (APF son las siglas en inglés) de 2000).
3. Los respiradores SAR de flujo continuo tipo CE sólo se deben usar si (a) **NO** se utiliza arena de sílice como agente limpiador **Y** (b) la inspección del sitio de trabajo indica que un APF de 25 para capuchas sueltas o 50 para respiradores ajustados a la cara es un valor adecuado para proveer una protección satisfactoria.

4. El usuario debe operar el respirador SAR de flujo continuo, tipo CE, cerca del límite superior de la gama de presión de operación aprobada por NIOSH. Este tipo de funcionamiento asegurará que el respirador provea una máxima protección para el usuario.
5. En todo momento se debe suministrar al respirador aire respirable tipo I, grado D, que satisfaga los requisitos de la especificación G-7.1 "Commodity Specification for Air" (Especificación de Aire) de la Compressed Gas Association (Asociación de Gas Comprimido). Se debe observar la calidad del aire a intervalos regulares para asegurar el continuo cumplimiento de dichos requisitos.
6. La fuente de aire respirable se debe mantener en un ambiente limpio y debe contener un sistema adecuado de filtros para evitar la entrada de contaminantes.
7. La corriente de aire respirable se debe separar y aislar de la corriente de aire que contiene las sustancias abrasivas. Los conectores no deben ser de tipo intercambiable entre los sistemas de aire respirable y aire abrasivo.

Si necesita información adicional, o tiene alguna pregunta, por favor comuníquese con NIOSH llamando al teléfono (304) 284-5713.

Muy atentamente,



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Se puede obtener la versión en español de este Aviso escribiendo a Publications Dissemination, DSDTT, National Institute for Occupational Health, 4676 Columbia Parkway, Cincinnati, OH 45226.