

FIGURE 6. 2,4-D IN CAS/STN

CAS Registry Number (RN): 94-75-7RTECS  
 RTECS Number (RTN): AG6825000  
 Molecular Formula (MF): C8 H6 Cl2 O3  
 Formula Weight (FW): 221.04  
 Chemical Name (CN): Acetic acid, (2,4-dichlorophenoxy)-  
 Acide 2,4-dichloro phenoxyacetique (French);  
 Acido(2,4-dicloro-fenossi)-acetico (Italian);  
 Acme amine 4; Acme butyl ester 4; Acme LV 4;  
 Agrotect; Amidox; Amoxone; Aqua-Kleen;  
 Barrage; BH 2,4-D; Brush-rhap; B-Selektionon;  
 Chipco turf herbicide "D"; Chloroxone; Citrus  
 fix; Crop rider; 2,4-D (ACGIH:OSHA); 2,4-D  
 acid; Debroussaillant 600; Decamine; Deherban;  
 (2,4-Dichloor-fenoxy)-azijnzuur (Dutch);  
 Dichlorophenoxyacetic acid;  
 2,4-Dichlorophenoxyacetic acid;  
 Dichlorophenoxyacetic acid (OSHA);  
 2,4-Dichlorphenoxyacetic acid;  
 (2,4-Dichlor-phenoxy)-essigsaeure (German);  
 Dicopur; DMA-4; Dormone; 2,4-  
 Dwuchlorofenoksyoctowy kwas (Polish);  
 Emulsamine BK; Emulsamine E-3; ENT 8,538;  
 Envert 171; Envert DT; Estone; Farmco;  
 Fernimine; Fernoxone; Ferxone; Foredex 75;  
 Hedonal; Hedonal (the herbicide); Herbidal;  
 Hivol-44; Ipaner; Kwasu 2,4-  
 dwuchlorofenoksyoctowego (Polish); Kwas  
 2,4-dwuchlorofenoksyoctowy (Polish); Kyselina  
 2,4-dichlorfenoxyoctova (Czech); Lawn-keep;  
 Macrondray; Miracle; Monosan; Moxone;  
 Netagrone; Netagrone 600; NSC 423; Pennamine;  
 Pennamine D; Phenox; Pielik; Plantgard; RCRA  
 waste number U240; Rhodia;  
 Spritz-hormin/2,4-D; Spritz-hormit/2,4-D;  
 Superormone concentrate; U-5043; U 46DP;  
 Vergemaster; Vernton; Vernton D; Vernton 2D;  
 Vidon 638; Weed-Ag-Bar; Weedar-64; Weedatul;  
 Weedez Wonder BAR; Weedone LV4; Weed-rhap;  
 Weed TOX; Weedtrol;  
 Class Identifier (CI): Agricultural Chemical; Tumorigen; Mutagen;  
 Reproductive Effector; P; Primary Irritant  
 Wiswesser Notation (WLN): QV1OR EG DG  
 Entry/Update Date (DATE): Oct 1996  
 Character Count: 19388

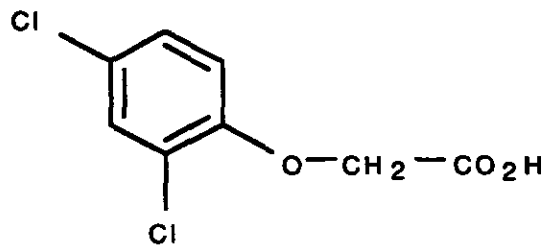


FIGURE 6. 2,4-D IN CAS/STN (continued)

IRRITATION DATA (IRR):

Route RTE	Organism ORGN	Dose DOSE	Duration DUR	Effect EFF	Source SO
skin	rabbit	500 mg	24H	Mild	28ZPAK -,279,72
eyes	rabbit	750 ug	24H	Severe	28ZPAK -,279,72

IRRITATION DATA REFERENCES:

28ZPAK "Sbornik Vysledku Toxixologickeho Vysetreni Latek A Pripravku,"  
Marhold, J.V., Institut Pro Vychovu Vedoucicn Pracovniku Chemickeho  
Prumyclu Praha, Czechoslovakia, 1972

MUTATION DATA (MUT):

System SYS	Organism ORGN	Cell Type CELL	Route RTE	Dose DOSE	Dur. DUR	Source SO
mutation in microorganisms	Salmonella typhimurium			250 ug/pla te (-S9)		MUREAV 204,615,88
DNA repair	Escherichia coli			5 mg/dis c		NTIS** PB80-13322 6
dna	Escherichia coli			20 umol/L		MUREAV 89,95,81
DNA repair	Bacillus subtilis			5 mg/dis c		NTIS** PB80-13322 6
mutation in microorganisms	other microorganism s			1 gm/L (-S9)		MILEDM 5,103,77
mutation in microorganisms	other microorganism s			1 gm/L (-S9)		MILEDM 5,103,77
mutation in microorganisms	other microorganism s			1 gm/L (-S9)		MILEDM 5,103,77
mutation in microorganisms	other microorganism s			1 gm/L (-S9)		MILEDM 5,103,77
specific locus test	Drosophila melanogaster		oral	5 mmol/L		MUREAV 319,237,93
specific locus test	Drosophila melanogaster		multiple	10 ppb		EMMUEG 25,148,95
sex chromosome loss and nondisjunction	Drosophila melanogaster		oral	25 ppm		ECBUDQ 27,190,78

FIGURE 6. 2,4-D IN CAS/STN (continued)

sex chromosome loss and nondisjunction	Drosophila melanogaster		unreported	1000 ppm	15D	ECBUDQ 27,182,78
mutation in microorganisms	Saccharomyces cerevisiae			150 mg/L (-S9)		ECBUDQ 27,193,78
gene conversion and mitotic recombination	Aspergillus nidulans			4 umol/L		MUREAV 204,615,88
DNA damage	salmon	sperm		1 mmol/L		PYTCAS 11,3135,72
unscheduled DNA synthesis	human	fibroblast		1 umol/L		MUREAV 42,161,77
cytogenic analysis	human	lymphocyte		20 ug/L		CYGEDX 8(3),6,74
sister chromatid exchange	human	lymphocyte		10 mg/L		JOHEA8 73,224,82
cytogenic analysis	rat		intraperitoneal	100 ug/kg		CYTOAN 52,275,87
DNA inhibitor	mouse		oral	200 mg/kg		MUREAV 55,197,78
cytogenic analysis	mouse		oral	100 mg/kg		CYGEDX 8(3),6,74
DNA inhibitor	hamster	ovary		1 mmol/L		TOLED5 29,137,85
cytogenic analysis	hamster	ovary		2400 mg/L		EMMUEG 10(Suppl 10),1,87
sister chromatid exchange	hamster	ovary		167 mg/L		EMMUEG 10(Suppl 10),1,87
mutation in mammalian somatic cells	hamster	lung		10 umol/L		CBINA8 19,369,77
cytogenic analysis	cattle	kidney		1 ppm		ITCSAF 8,416,73
DNA damage	mammal (species unspecified)	lymphocyte		1 mmol/L		PYTCAS 11,3135,72

FIGURE 6. 2,4-D IN CAS/STN (continued)

MUTATION DATA REFERENCES:

MUREAV Mutation Research (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-  
 NTIS\*\* National Technical Information Service (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information.  
 MILEDM Microbios Letters (Faculty Press, 88 Regent St., Cambridge, UK) V.1- 1976-  
 EMMUEG Environmental and Molecular Mutagenesis (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987-  
 ECBUDQ Ecological Bulletins (Editorial Service of FRN, Box 6710, S-11385, Stockholm, Sweden) No.19- 1975-  
 PYTCAS Phytochemistry An International Journal of Plant Biochemistry. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.1- 1961-  
 CYGEDX Cytology and Genetics (English Translation) Translation of TGANAK. (Allerton Press Inc., 150 Fifth Ave., New York, NY 10011) V.8-1974-  
 JOHEA8 Journal of Heredity (American Genetic Assoc., 818 18th St., NW, Washington, DC 20006) V.5- 1914-  
 CYTOAN Cytologia (Japan Pub. Trading Co. (USA), 1255 Howard St., San Francisco, CA 94103) V.1- 1929-  
 TOLED5 Toxicology Letters (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977-  
 CBINA8 Chemico-Biological Interactions (Elsevier Scientific Pub. Ireland Ltd., POB 85, Limerick, Ireland) V.1- 1969-  
 ITCSAF In Vitro (Rockville, MD) V.1-20, 1965-85. For publisher information, see ICDBEO.

REPRODUCTIVE EFFECTS DATA (REP):

Effect EFF	Route RTE	Organism ORGN	Dose DOSE	Duration DUR	Source SO
T48	oral	rat	TDLo 220 ug/kg	1-22D preg	GISAAA 50(10),76, 85
T46;T34;T35	oral	rat	TDLo 1 g/kg	6-15D preg	TXAPA9 22,14,72
T46	oral	rat	TDLo 125 mg/kg	6-15D preg	FCTXAV 9,801,71
T34;T41;T53	oral	rat	TDLo 500 mg/kg	6-15D preg	FCTXAV 9,801,71
T55;T81	oral	rat	TDLo 500 mg/kg	6-15D preg	FCTXAV 9,801,71
T34;T35;T43	oral	mouse	TDLo 707 mg/kg	11-14D preg	AECTCV 6,33,77
T26;T31;T42	oral	mouse	TDLo 900 mg/kg	6-14D preg	NTIS** PB223-160

FIGURE 6. 2,4-D IN CAS/STN (continued)

T81	oral	mouse	TDLo 438 mg/kg	8-12D preg	TCMUD8 7,7,87
T35;T41;T31	subcutaneous	mouse	TDLo 882 mg/kg	6-14D preg	NTIS** PB223-160
T34;T42;T43	subcutaneous	mouse	TDLo 900 mg/kg	6-14D preg	NTIS** PB223-160
T24;T26	subcutaneous	mouse	TDLo 900 mg/kg	6-14D preg	NTIS** PB223-160
T26	oral	hamster	TDLo 200 mg/kg	7-11D preg	BECTA6 6,559,71

REPRODUCTIVE EFFECTS REFERENCES:

GISAAA Gigiena i Sanitariya For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1936-

TXAPA9 Toxicology and Applied Pharmacology (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-

FCTXAV Food and Cosmetics Toxicology (London, UK) V.1-19, 1963-81.  
For publisher information, see FCTOD7.

AECTCV Archives of Environmental Contamination and Toxicology  
(Springer-Verlag New York, Inc., Service Center, 44 Hartz Way, Secaucus, NJ 07094) V.1- 1973-

NTIS\*\* National Technical Information Service (Springfield, VA 22161)  
Formerly U.S. Clearinghouse for Scientific & Technical Information.

TCMUD8 Teratogenesis, Carcinogenesis, and Mutagenesis (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.1- 1980-

BECTA6 Bulletin of Environmental Contamination and Toxicology  
(Springer-Verlag New York, Inc., Service Center, 44 Hartz Way, Secaucus, NJ 07094) V.1- 1966-

FIGURE 6. 2,4-D IN CAS/STN (continued)

TOXICITY DATA (TOX):

Effect EFF	Route RTE	Organism ORGN	Dose DOSE	Source SO
F24;J25	oral	man	TDLo 2 g/kg	ARTODN 66,518,92
F24;G10;J25	oral	man	TDLo 5714 mg/kg	ARTODN 66,518,92
K13;F24;F07	oral	human	LDLo 80 mg/kg	ARPAAQ 94,270,72
F12	oral	man	LDLo 93 mg/kg	PAREAQ 14,225,62
	oral	rat	LD50 375 mg/kg	FMCHA2 -,C174,91
	skin	rat	LD50 1500 mg/kg	WRPCA2 9,119,70
C06;F18;F24	intraperitoneal	rat	LD50 666 mg/kg	JIHTAB 29,85,47
	oral	mouse	LD50 347 mg/kg	RPZHAW 31,373,80
	intraperitoneal	mouse	LDLo 125 mg/kg	TXAPA9 23,288,72
F20;F24	oral	dog	LD50 100 mg/kg	AEHLAU 7,202,63
	oral	rabbit	LDLo 800 mg/kg	AMPMAR 12,26,51
F19;R10	skin	rabbit	LD50 1400 mg/kg	AFDOAQ 16,3,52
C06;F18;F24	intraperitoneal	rabbit	LD50 400 mg/kg	JIHTAB 29,85,47
C06;F18;F24	intravenous	rabbit	LD50 400 mg/kg	JIHTAB 29,85,47
	oral	guinea pig	LD50 469 mg/kg	AJVRAH 15,622,54
C06;F18;F24	intraperitoneal	guinea pig	LD50 666 mg/kg	JIHTAB 29,85,47
	oral	hamster	LD50 500 mg/kg	TXAPA9 48,A192,79
K05;F07;L03	oral	chicken	LD50 541 mg/kg	AJVRAH 15,622,54
	oral	mammal (species unspecified)	LD50 375 mg/kg	SCIEAS 165,465,69

FIGURE 6. 2,4-D IN CAS/STN (continued)

TOXICITY DATA REFERENCES:

ARTODN Archives of Toxicology (Springer-Verlag, Heidelberger Pl. 3, D-1000 Berlin 33, Fed. Rep. Ger.) V.32- 1974-  
 ARPAAQ Archives of Pathology (Chicago, IL) V.5(3)-50(3), 1928-50; V.70-99, 1960-75. For publisher information, see APLMAS.  
 PAREAQ Pharmacological Reviews (Williams & Wilkins, 428 E. Preston St., Baltimore, MD 21202) V.1- 1949-  
 FMCHA2 Farm Chemicals Handbook (Meister Pub., 37841 Euclid Ave., Willoughby, OH 44094)  
 WRPCA2 World Review of Pest Control (London, UK) V.1-10, 1962-71. Discontinued.  
 JIHTAB Journal of Industrial Hygiene and Toxicology (Cambridge, MA) V.18-31, 1936-49. For publisher information, see AEHLAU.  
 RPZHAW Roczniki Panstwowego Zakladu Higieny (Ars Polona, POB 1001, 00-068 Warsaw 1, Poland) V.1- 1950-  
 TXAPA9 Toxicology and Applied Pharmacology (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-  
 AEHLAU Archives of Environmental Health (Heldref Pub., 4000 Albemarle St., NW, Washington, DC 20016) V.1- 1960-  
 AMPMAR Archives des Maladies Professionnelles de Medecine du Travail et de Securite Sociale (SPPIF, B.P.22, F-41353 Vineuil, France) V.7-1946-  
 AFDOAQ Quarterly Bulletin--Association of Food and Drug Officials of the United States (Denver, CO) V.3-38, 1939-74.  
 AJVRAH American Journal of Veterinary Research (American Veterinary Medical Assoc., 930 N. Meacham Rd., Schaumburg, IL 60196) V.1- 1940-  
 SCIEAS Science (American Assoc. for the Advancement of Science, 1333 H St., NW, Washington, DC 20005) V.1- 1895-

CANCER REVIEW (CREV):

IARC Cancer Review:Human Limited Evidence IMEMDT 41,357,86  
 IARC Cancer Review:Animal Inadequate Evidence IMEMDT 15,111,77

CANCER REVIEW REFERENCES:

IMEMDT IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1- 1972-

TOXICOLOGY REVIEW (TREV):

TOXICOLOGY REVIEW RREVAH 59,1,75  
 TOXICOLOGY REVIEW DTTIAF 80,485,73  
 TOXICOLOGY REVIEW RREVAH 56,107,75  
 TOXICOLOGY REVIEW ECMAAI 14,141,73  
 TOXICOLOGY REVIEW BIOGAL 40(2),44,74  
 TOXICOLOGY REVIEW HYSAAV 31(7-9),383,66

TOXICOLOGY REVIEW REFERENCES:

RREVAH Residue Reviews (Springer-Verlag New York, Inc., Service Center, 44 Hartz Way, Secaucus, NJ 07094) V.1- 1962-  
 DTTIAF Deutsche Tieraerztliche Wochenschrift (Hanover, Fed. Rep. Ger.) V.1-77, 1893-1970.  
 ECMAAI Economie et Medecine Animales (Paris, France) V.1-17, 1960-76. Discontinued.  
 BIOGAL Biologico (Instituto Biologica, Av. Cons. Rodrigues Alves, 1252, CEP 04014, Sao Paulo, Brazil) V.1- 1935-  
 HYSAAV Hygiene and Sanitation (USSR) English translation of GISAAA. (Springfield, VA) 1964-71. Discontinued.

FIGURE 7. TNT IN DIMDI

1.00/000001 DIMDI: -RTECS /COPYRIGHT NIOSH  
 ++DAT DATAMAINTEANCE  
 ND: YE3820000 BASE: RT00  
 MD: 961106 LR : 9610 RL: 12241  
 ++IDEN IDENTIFICATION  
 NAME NAME : Toluene, 2,4,6-trinitro-  
 CR CAS REGISTRY NUMBER : 118-96-7  
 RTEC RTECS ACCESSION NO : XU0175000  
 WL WISWESSER LINE NOTATION: WNR B1 CNW ENW  
 SY SYNONYMS : Benzene, 2-methyl-1,3,5-trinitro-;  
 Entsufo; 2-Methyl-1,3,5-trinitrobenzene; NCI-C56155; TNT;  
 alpha-Tnt; TNT (OSHA);  
 TNT, dry or wetted with <30% water, by weight (UN0209) (DOT);  
 TNT-tolite (French); Tolit; Tolite;  
 2,4,6-Trinitrotoluene (Dutch); Trinitrotoluene;  
 Trinitrotoluene (UN0209) (DOT);  
 Trinitrotoluene, wetted with not <30% water, by weight (UN1356)  
 (DOT); s-Trinitrotoluene; sym-Trinitrotoluene;  
 2,4,6-Trinitrotoluene (ACGIH:OSHA); s-Trinitrotoluol;  
 sym-Trinitrotoluol; 2,4,6-Trinitrotoluol (German); Tritol;  
 Triton; Trojnitrotoluen (Polish); Trotyl; Trotyl oil;  
 UN0209 (DOT); UN1356 (DOT)  
 MF MOLECULAR FORMULA : C7-H5-N3-O6  
 MW MOLECULAR WEIGHT : 227.15  
 GRC GROUP OF COMPOUND : Agricultural Chemical; Tumorigen;  
 Mutagen; Reproductive Effector; Primary Irritant  
 ++TOXR TOXICOLOGY AND CARCINOGENICITY REVIEW  
 +TREV TOXICOLOGY REVIEW  
 \*\* TOXICOLOGY REVIEW; NTIS\*\* AD778-725; National Technical Information  
 Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for  
 Scientific & Technical Information.  
 \*\* TOXICOLOGY REVIEW; CRTXB2 1(1),93,71; CRC Critical Reviews in  
 Toxicology. (CRC Press, Inc., 2000 Corporate Blvd., NW, Boca  
 Raton, FL 33431) V.1- 1971-  
 \*\* TOXICOLOGY REVIEW; PAREAQ 4,1,52; Pharmacological Reviews. (Williams  
 & Wilkins, 428 E. Preston St., Baltimore, MD 21202) V.1- 1949-  
 +CREV CANCER REVIEW  
 \*\* IARC Cancer Review; Animal Inadequate Evidence; IMEMDT 65,449,96;  
 IARC Monographs on the Evaluation of Carcinogenic Risk of  
 Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan  
 Ave., Albany, NY 12210) V.1- 1972-  
 \*\* IARC Cancer Review; Human Inadequate Evidence; IMEMDT 65,449,96;  
 IARC Monographs on the Evaluation of Carcinogenic Risk of  
 Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan  
 Ave., Albany, NY 12210) V.1- 1972-  
 \*\* IARC Cancer Review; Group 3; IMEMDT 65,449,96; IARC Monographs on  
 the Evaluation of Carcinogenic Risk of Chemicals to Man. (WHO  
 Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210)  
 V.1- 1972-  
 +TLV THRESHOLD LIMIT VALUE  
 \*\* ACGIH TLV; TWA 0.5 mg/m3 (skin); 85INAB 6,1652,91; "Documentation of  
 the Threshold Limit Values and Biological Exposure Indices," 5th  
 ed., Cincinnati, OH, American Conference of Governmental  
 Industrial Hygienists, Inc., 1986  
 +NREC NIOSH RECOMMENDATIONS  
 \*\* NIOSH REL TO 2,4,6-TRINITROTOLUENE-air:10H TWA 0.5 mg/m3 (Sk);  
 NIOSH\* DHHS #92-100,92; National Institute for Occupational  
 Safety and Health, U.S. Dept. of Health, Education, and Welfare,



FIGURE 7. TNT IN DIMDI (continued)

Reports and Memoranda.

+NEXP NIOSH EXPOSURE SURVEYS

\*\* NATIONAL OCCUPATIONAL EXPOSURE SURVEY 1983; Hazard#: 74550; number of industries: 2; total number of facilities: 10; number of occupations: 1; total number of employees: 31

++EXSR EXPOSURE STANDARDS AND REGULATIONS

+SR STANDARDS AND REGULATIONS

\*\* DOT-HAZARD:EXPLOSIVE 1.1D; LABEL:EXPLOSIVE 1.1D (UN0209); CFRGBR 49,172.101,92; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)

\*\* DOT-HAZARD:4.1; LABEL:FLAMMABLE SOLID (UN1356); CFRGBR 49,172.101,92; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)

\*\* MSHA STANDARD-air:TWA 0.2 ppm (0.5 mg/m3) (skin); DTLVS\* 3,270,71; "Documentation of Threshold Limit Values for Substances in Workroom Air." For publisher information, see 85INA8.

\*\* OSHA PEL (Gen Indu):8H TWA 1.50 mg/m3 (skin); CFRGBR 29,1910.1000,94; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)

\*\* OSHA PEL (Construc):8H TWA 1.50 mg/m3 (skin); CFRGBR 29,1926.55,94; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)

\*\* OSHA PEL (Shipyard):8H TWA 1.50 mg/m3 (skin); CFRGBR 29,1915.1000,93; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)

\*\* OSHA PEL (Fed Cont):8H TWA 1.50 mg/m3 (skin); CFRGBR 41,50-204.50,94; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)

\*\* OEL-ARAB Republic of Egypt:TWA 0.5 mg/m3 JAN93

\*\* OEL-AUSTRALIA:TWA 0.5 mg/m3;Skin JAN93

\*\* OEL-BELGIUM:TWA 0.5 mg/m3;Skin JAN93

\*\* OEL-DENMARK:STEL 0.5 mg/m3;Skin JAN93

\*\* OEL-FINLAND:TWA 0.5 mg/m3;STEL 3 mg/m3;Skin JAN93

\*\* OEL-FRANCE:TWA 0.5 mg/m3;Skin JAN93

\*\* OEL-GERMANY:TWA 0.01 ppm (0.1 mg/m3);Skin;Carcinogen JAN93

\*\* OEL-HUNGARY:TWA 0.3 mg/m3;STEL 0.5 mg/m3;Skin JAN93

\*\* OEL-THE NETHERLANDS:TWA 0.5 mg/m3;Skin JAN93

\*\* OEL-THE PHILIPPINES:TWA 1.5 mg/m3;Skin JAN93

\*\* OEL-RUSSIA:TWA 0.1 mg/m3;STEL 0.5 mg/m3;Skin JAN93

\*\* OEL-SWITZERLAND:TWA 0.01 ppm (0.1 mg/m3);STEL 0.02 ppm;Skin JAN93

\*\* OEL-TURKEY:TWA 1.5 mg/m3;Skin JAN93

\*\* OEL-UNITED KINGDOM:TWA 0.5 mg/m3;STEL 0.5 mg/m3 JAN93

\*\* OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV

\*\* OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV

+TSTA STATUS OF TESTS

\*\* EPA GENETOX PROGRAM 1988, Positive: Histidine reversion-Ames test

\*\* EPA TSCA Section 8(b) CHEMICAL INVENTORY

\*\* EPA TSCA Section 8(d) unpublished health/safety studies

\*\* On EPA IRIS database

\*\* EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, OCTOBER 1996

\*\* OSHA ANALYTICAL METHOD #44

++TOXI TOXICITY DATA

+GSTU GENERAL TOXICITY STUDIES TOTAL NUMBER: 7

+MDSTU MULTIPLE DOSE STUDIES TOTAL NUMBER: 6

+MSTU MUTAGENICITY STUDIES TOTAL NUMBER: 3

+RSTU REPRODUCTIVE STUDIES TOTAL NUMBER: 1

+SSTU SKIN AND EYE IRRITATION STUDIES TOTAL NUMBER: 1

\*\*DTYP DATA TYPE : GSTU

FIGURE 7. TNT IN DIMDI (continued)

ROU ROUTE : oral  
 SPE SPECIES : human  
 STU STUDY : LDLo  
 DOS DOSE : 28 gm/kg  
 EFF EFFECT : BEHAVIORAL (Hallucinations, distorted perceptions);  
 LUNGS, THORAX, OR RESPIRATION (Cyanosis); GASTROINTESTINAL (Other  
 changes)  
 RF REFERENCE : "Toxicology of Drugs and Chemicals," Deichmann,  
 W.B., New York, Academic Press, Inc., 1969, vol -, pg 610, 69

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : LD50  
 DOS DOSE : 795 mg/kg  
 EFF EFFECT : BEHAVIORAL (Somnolence; Tremor; Convulsions or  
 effect on seizure threshold)  
 RF REFERENCE : Journal of Toxicology and Environmental Health.  
 (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005)  
 V.1- 1975/76-, vol 9, pg 565, 82

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : mouse  
 STU STUDY : LD50  
 DOS DOSE : 660 mg/kg  
 EFF EFFECT : BEHAVIORAL (Somnolence; Tremor; Convulsions or  
 effect on seizure threshold)  
 RF REFERENCE : Journal of Toxicology and Environmental Health.  
 (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005)  
 V.1- 1975/76-, vol 9, pg 565, 82

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : cat  
 STU STUDY : LDLo  
 DOS DOSE : 1850 mg/kg  
 EFF EFFECT : LUNGS, THORAX, OR RESPIRATION (Dyspnea; Cyanosis);  
 SKIN AND APPENDAGES (Dermatitis, allergic)  
 RF REFERENCE : Special Report Series--Medical Research Council  
 (United Kingdom). (Her Majesty's Stationery Office, P.O. Box  
 569, London SE1 9NH, UK) No.1- 1915-, vol 58, pg 32, 21

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : subcutaneous  
 SPE SPECIES : cat  
 STU STUDY : LDLo  
 DOS DOSE : 200 mg/kg  
 EFF EFFECT : LUNGS, THORAX, OR RESPIRATION (Dyspnea; Cyanosis);  
 SKIN AND APPENDAGES (Dermatitis, allergic)  
 RF REFERENCE : Special Report Series--Medical Research Council  
 (United Kingdom). (Her Majesty's Stationery Office, P.O. Box  
 569, London SE1 9NH, UK) No.1- 1915-, vol 58, pg 32, 21

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rabbit  
 STU STUDY : LDLo  
 DOS DOSE : 500 mg/kg  
 EFF EFFECT : BEHAVIORAL (Convulsions or effect on seizure  
 threshold); GASTROINTESTINAL (Hypermotility, diarrhea); LUNGS,  
 THORAX, OR RESPIRATION (Cyanosis)  
 RF REFERENCE : Special Report Series--Medical Research Council

FIGURE 7. TNT IN DIMDI (continued)

(United Kingdom). (Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH, UK) No.1- 1915-, vol 58, pg 32, 21

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : subcutaneous  
 SPE SPECIES : rabbit  
 STU STUDY : LDLo  
 DOS DOSE : 500 mg/kg  
 EFF EFFECT : BEHAVIORAL (Convulsions or effect on seizure threshold); GASTROINTESTINAL (Hypermotility, diarrhea); LUNGS, THORAX, OR RESPIRATION (Cyanosis)  
 RF REFERENCE : Special Report Series--Medical Research Council (United Kingdom). (Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH, UK) No.1- 1915-, vol 58, pg 32, 21

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : TDLo  
 DOS DOSE : 7200 mg/kg/6W-I  
 EFF EFFECT : LIVER (Other changes); BLOOD (Changes in serum composition); RELATED TO CHRONIC DATA (Changes in testicular weight)  
 RF REFERENCE : Toxicology Letters. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977-, vol 55, pg 343, 91

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : TDLo  
 DOS DOSE : 11375 mg/kg/13W-C  
 EFF EFFECT : BEHAVIORAL (Food intake); BLOOD (Normocytic anemia); NUTRITIONAL AND GROSS METABOLIC (Weight loss or decreased weight gain)  
 RF REFERENCE : Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1- 1973-, vol 32, pg 253, 84

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : TDLo  
 DOS DOSE : 3 gm/kg/30D-I  
 EFF EFFECT : LIVER (Other changes); BIOCHEMICAL (Monoamine oxidase; Lipids including transport)  
 RF REFERENCE : Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1957-, vol 18(10), pg 57, 74

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : oral  
 SPE SPECIES : mouse  
 STU STUDY : TDLo  
 DOS DOSE : 11 mg/kg/13W-C  
 EFF EFFECT : LIVER (Changes in liver weight); ENDOCRINE (Changes in spleen weight); BLOOD (Changes in spleen)  
 RF REFERENCE : Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76-, vol 9, pg 565, 82

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : oral  
 SPE SPECIES : dog  
 STU STUDY : TDLo

FIGURE 7. TNT IN DIMDI (continued)

DOS DOSE : 182 mg/kg/13W-C  
 EFF EFFECT : LIVER (Changes in liver weight); BLOOD (Normocytic anemia); NUTRITIONAL AND GROSS METABOLIC (Weight loss or decreased weight gain)  
 RF REFERENCE : Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76-, vol 9, pg 565, 82

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : oral  
 SPE SPECIES : dog  
 STU STUDY : TDLo  
 DOS DOSE : 1456 mg/kg/26W-I  
 EFF EFFECT : LIVER (Changes in liver weight); BLOOD (Normocytic anemia; Changes in spleen)  
 RF REFERENCE : Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1- 1973-, vol 63, pg 233, 90

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Mutation in Microorganisms  
 SCR SPECIES/CELL TYPE/ROUTE : Salmonella typhimurium  
 DOS DOSE : 10 ug/plate (+/-S9)  
 RF REFERENCE : National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information., AD-A080-146

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Body Fluid Assay  
 SCR SPECIES/CELL TYPE/ROUTE : rat/ Salmonella typhimurium- Salmonella typhimurium  
 DOS DOSE : 50 mg/kg  
 RF REFERENCE : Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-, vol 262, pg 167, 91

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Mutation in Mammalian Somatic Cells  
 SCR SPECIES/CELL TYPE/ROUTE : mouse- Lymphocyte  
 DOS DOSE : 40 mg/L  
 RF REFERENCE : Cancer Letters (Shannon, Ireland). (Elsevier Scientific Pub. Ireland Ltd., POB 85, Limerick, Ireland) V.1- 1975-, vol 20, pg 103, 83

\*\*DTYP DATA TYPE : RSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : TDLo  
 DOS DOSE : 5376 mg/kg (28D male)  
 EFF EFFECT : Paternal Effects (Testes, epididymis, sperm duct)  
 RF REFERENCE : Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76-, vol 9, pg 565, 82

\*\*DTYP DATA TYPE : SSTU  
 ROU ROUTE : skin  
 SPE SPECIES : rabbit  
 DOS DOSE : 500 mg/24H MLD  
 RF REFERENCE : National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information., AD-B011-150

FIGURE 8. 2,4-D IN DIMDI

I.00/000002 DIMDI: -RTECS /COPYRIGHT NIOSH

++DAT DATAMAINTEANCE

ND: AI5240000 BASE: RT00  
MD: 961106 LR : 9610 RL: 26557

++IDEN IDENTIFICATION

NAME NAME : Acetic acid, (2,4-dichlorophenoxy)-  
CR CAS REGISTRY NUMBER : 94-75-7  
RTEC RTECS ACCESSION NO : AG6825000  
WL WISWESSER LINE NOTATION: QV10R BG DG  
SY SYNONYMS : Acide 2,4-dichloro phenoxyacetique  
(French); Acido(2,4-dicloro-fenossi)-acetico (Italian);  
Acme amine 4; Acme butyl ester 4; Acme LV 4; Agrotect; Amidox;  
Amoxone; Aqua-Kleen; Barrage; BH 2,4-D; Brush-rhap;  
B-Selektion; Chipco turf herbicide "D"; Chloroxone;  
Citrus fix; Crop rider; 2,4-D (ACGIH:OSHA); 2,4-D acid;  
Debroussaillant 600; Decamine; Deherban;  
(2,4-Dichloor-fenoxy)-azijnzuur (Dutch);  
Dichlorophenoxyacetic acid; 2,4-Dichlorophenoxyacetic acid;  
Dichlorophenoxyacetic acid (OSHA);  
2,4-Dichlorophenoxyacetic acid;  
(2,4-Dichlor-phenoxy)-essigsaeure (German); Dicopur; DMA-4;  
Dormone; 2,4-Dwuchlorofenoksyoctowy kwas (Polish);  
Emulsamine BK; Emulsamine E-3; ENT 8,538; Envert 171;  
Envert DT; Estone; Farmco; Fernimine; Fernoxone; Ferxone;  
Foredex 75; Hedonal; Hedonal (the herbicide); Herbidal;  
Hivol-44; Ipaner; Kwasu 2,4-dwuchlorofenoksyoctowego (Polish);  
Kwas 2,4-dwuchlorofenoksyoctowy (Polish);  
Kyselina 2,4-dichlorfenoxyoctova (Czech); Lawn-keep;  
Macrondray; Miracle; Monosan; Moxone; Netagrone; Netagrone 600;  
NSC 423; Pennamine; Pennamine D; Phenox; Pielik; Plantgard;  
RCRA waste number U240; Rhodia; Spritz-hormin/2,4-D;  
Spritz-hormit/2,4-D; Superormone centre; U-5043; U 46DP;  
Vergemaster; Verton; Verton D; Verton 2D; Vidon 638;  
Weed-Ag-Bar; Weedar-64; Weedatul; Weedez Wonder BAR;  
Weedone LV4; Weed-rhap; Weed TOX; Weedtrol

MF MOLECULAR FORMULA : C8-H6-Cl2-O3

MW MOLECULAR WEIGHT : 221.04

GRC GROUP OF COMPOUND : Agricultural Chemical; Tumorigen;  
Mutagen; Reproductive Effector; Primary Irritant

++TOXR TOXICOLOGY AND CARCINOGENICITY REVIEW

+TREV TOXICOLOGY REVIEW

- \*\* TOXICOLOGY REVIEW; RREVAH 59,1,75; Residue Reviews. (Springer-Verlag New York, Inc., Service Center, 44 Hartz Way, Secaucus, NJ 07094) V.1- 1962-
- \*\* TOXICOLOGY REVIEW; DTPIAF 80,485,73; Deutsche Tieraerztliche Wochenschrift. (Hanover, Fed. Rep. Ger.) V.1-77, 1893-1970.
- \*\* TOXICOLOGY REVIEW; RREVAH 56,107,75; Residue Reviews. (Springer-Verlag New York, Inc., Service Center, 44 Hartz Way, Secaucus, NJ 07094) V.1- 1962-
- \*\* TOXICOLOGY REVIEW; ECMAAI 14,141,73; Economie et Medecine Animales. (Paris, France) V.1-17, 1960-76. Discontinued.
- \*\* TOXICOLOGY REVIEW; BIOGAL 40(2),44,74; Biologico. (Instituto Biologica, Av. Cons. Rodrigues Alves, 1252, CEP 04014, Sao Paulo, Brazil) V.1- 1935-
- \*\* TOXICOLOGY REVIEW; HYSAAV 31(7-9),383,66; Hygiene and Sanitation (USSR). English translation of GISAAA. (Springfield, VA) 1964-71. Discontinued.

+CREV CANCER REVIEW

FIGURE 8. 2,4-D IN DIMDI (continued)

- \*\* IARC Cancer Review; Human Limited Evidence; IMEMDT 41,357,86; IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1- 1972-
- \*\* IARC Cancer Review; Animal Inadequate Evidence; IMEMDT 15,111,77; IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1- 1972-
- +TLV THRESHOLD LIMIT VALUE
- \*\* ACGIH TLV; TWA 10 mg/m<sup>3</sup>; 85INAB 6,375,91; "Documentation of the Threshold Limit Values and Biological Exposure Indices," 5th ed., Cincinnati, OH, American Conference of Governmental Industrial Hygienists, Inc., 1986
- +NREC NIOSH RECOMMENDATIONS
- \*\* NIOSH REL TO 2,4-D-air:10H TWA 10 mg/m<sup>3</sup>; NIOSH\* DHHS #92-100,92; National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda.
- +NEXP NIOSH EXPOSURE SURVEYS
- \*\* NATIONAL OCCUPATIONAL HAZARD SURVEY 1974: Hazard#: 24270; number of industries: 6; total number of facilities: 1132; number of occupations: 8; total number of employees: 6266
- \*\* NATIONAL OCCUPATIONAL EXPOSURE SURVEY 1983: Hazard#: 24270; number of industries: 1; total number of facilities: 94; number of occupations: 1; total number of employees: 471
- +EXSR EXPOSURE STANDARDS AND REGULATIONS
- +SR STANDARDS AND REGULATIONS
- \*\* EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION; FEREAC 54,7740,89; Federal Register. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) V.1- 1936-
- \*\* MSHA STANDARD-air:TWA 10 mg/m<sup>3</sup>; DTLVS\* 3,67,71; "Documentation of Threshold Limit Values for Substances in Workroom Air." For publisher information, see 85INAB.
- \*\* OSHA PEL (Gen Indu):8H TWA 10 mg/m<sup>3</sup>; CFRGBR 29,1910.1000,94; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)
- \*\* OSHA PEL (Construc):8H TWA 10 mg/m<sup>3</sup>; CFRGBR 29,1926.55,94; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)
- \*\* OSHA PEL (Shipyard):8H TWA 10 mg/m<sup>3</sup>; CFRGBR 29,1915.1000,93; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)
- \*\* OSHA PEL (Fed Cont):8H TWA 10 mg/m<sup>3</sup>; CFRGBR 41,50-204.50,94; Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)
- \*\* OEL-AUSTRALIA:TWA 10 mg/m<sup>3</sup> JAN93
- \*\* OEL-AUSTRIA:TWA 10 mg/m<sup>3</sup> JAN93
- \*\* OEL-BELGIUM:TWA 10 mg/m<sup>3</sup> JAN93
- \*\* OEL-DENMARK:TWA 5 mg/m<sup>3</sup> JAN93
- \*\* OEL-FINLAND:TWA 10 mg/m<sup>3</sup>;STEL 20 mg/m<sup>3</sup>;Skin JAN93
- \*\* OEL-FRANCE:TWA 10 mg/m<sup>3</sup> JAN93
- \*\* AOEL-GERMANY:TWA 10 mg/m<sup>3</sup> JAN93
- \*\* OEL-HUNGARY:TWA 1 mg/m<sup>3</sup>;STEL 2 mg/m<sup>3</sup>;Skin JAN93
- \*\* OEL-THE NETHERLANDS:TWA 10 mg/m<sup>3</sup> JAN93
- \*\* OEL-THE PHILIPPINES:TWA 10 mg/m<sup>3</sup> JAN93
- \*\* OEL-POLAND:TWA 7 mg/m<sup>3</sup> JAN93
- \*\* OEL-SWITZERLAND:TWA 10 mg/m<sup>3</sup>;STEL 50 mg/m<sup>3</sup> JAN93
- \*\* OEL-THAILAND:TWA 10 mg/m<sup>3</sup> JAN93
- \*\* OEL-TURKEY:TWA 10 mg/m<sup>3</sup> JAN93

FIGURE 8. 2,4-D IN DIMDI (continued)

- \*\* OEL-UNITED KINGDOM:TWA 10 mg/m3;STEL 20 mg/m3 JAN93
- \*\* OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
- \*\* OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV
- +TSTA STATUS OF TESTS
- \*\* EPA GENETOX PROGRAM 1988, Positive: In vivo cytogenetics-nonhuman bone marrow
- \*\* EPA GENETOX PROGRAM 1988, Positive: In vitro cytogenetics-human lymphocyte
- \*\* EPA GENETOX PROGRAM 1988, Positive: B subtilis rec assay; E coli pola without S9
- \*\* EPA GENETOX PROGRAM 1988, Positive: V79 cell culture-gene mutation
- \*\* EPA GENETOX PROGRAM 1988, Positive: S cerevisiae gene conversion
- \*\* EPA GENETOX PROGRAM 1988, Negative: D melanogaster-whole sex chrom. loss
- \*\* EPA GENETOX PROGRAM 1988, Negative: D melanogaster-nondisjunction
- \*\* EPA GENETOX PROGRAM 1988, Negative: Histidine reversion-Ames test
- \*\* EPA GENETOX PROGRAM 1988, Negative: D melanogaster Sex-linked lethal
- \*\* EPA GENETOX PROGRAM 1988, Negative: In vitro UDS-human fibroblast; TRP reversion
- \*\* EPA GENETOX PROGRAM 1988, Negative: S cerevisiae-homozygosis
- \*\* EPA GENETOX PROGRAM 1988, Inconclusive: Carcinogenicity-mouse/rat; Mammalian micronucleus
- \*\* EPA TSCA Section 8(b) CHEMICAL INVENTORY
- \*\* EPA TSCA Section 8(d) unpublished health/safety studies
- \*\* On EPA IRIS database
- \*\* EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, OCTOBER 1996
- \*\* NIOSH Analytical Method, 1994: 2,4-D, 5001
- \*\* NTP Carcinogenesis studies; on test (prechronic studies), May 1996

++TOXI TOXICITY DATA

+GSTU	GENERAL TOXICITY STUDIES	TOTAL NUMBER: 19
+MDSTU	MULTIPLE DOSE STUDIES	TOTAL NUMBER: 6
+MSTU	MUTAGENICITY STUDIES	TOTAL NUMBER: 27
+RSTU	REPRODUCTIVE STUDIES	TOTAL NUMBER: 10
+SSTU	SKIN AND EYE IRRITATION STUDIES	TOTAL NUMBER: 2

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : man  
 STU STUDY : TDLo  
 DOS DOSE : 2 gm/kg  
 EFF EFFECT : BEHAVIORAL (Coma); LUNGS, THORAX, OR RESPIRATION (Respiratory depression)  
 RF REFERENCE : Archives of Toxicology. (Springer-Verlag, Heidelberger Pl. 3, D-1000 Berlin 33, Fed. Rep. Ger.) V.32-1974-, vol 66, pg 518, 92

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : man  
 STU STUDY : TDLo  
 DOS DOSE : 5714 mg/kg  
 EFF EFFECT : BEHAVIORAL (Coma); CARDIAC (Change in rate); LUNGS, THORAX, OR RESPIRATION (Respiratory depression)  
 RF REFERENCE : Archives of Toxicology. (Springer-Verlag, Heidelberger Pl. 3, D-1000 Berlin 33, Fed. Rep. Ger.) V.32-1974-, vol 66, pg 518, 92

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : human

FIGURE 8. 2,4-D INDIMDI (continued)

STU STUDY : LDLo  
 DOS DOSE : 80 mg/kg  
 EFF EFFECT : GASTROINTESTINAL (Nausea or vomiting); BEHAVIORAL  
 (Coma; Somnolence)  
 RF REFERENCE : Archives of Pathology. (Chicago, IL) V.5(3)-50(3),  
 1928-50; V.70-99, 1960-75. For publisher information, see  
 APLMAS., vol 94, pg 270, 72

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : man  
 STU STUDY : LDLo  
 DOS DOSE : 93 mg/kg  
 EFF EFFECT : BEHAVIORAL (Convulsions or effect on seizure  
 threshold)  
 RF REFERENCE : Pharmacological Reviews. (Williams & Wilkins, 428  
 E. Preston St., Baltimore, MD 21202) V.1- 1949-, vol 14, pg 225,  
 62

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : LD50  
 DOS DOSE : 375 mg/kg  
 RF REFERENCE : Farm Chemicals Handbook. (Meister Pub., 37841  
 Euclid Ave., Willoughby, OH 44094), vol -, pg C174, 91

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : skin  
 SPE SPECIES : rat  
 STU STUDY : LD50  
 DOS DOSE : 1500 mg/kg  
 RF REFERENCE : World Review of Pest Control. (London, UK) V.1-10,  
 1962-71. Discontinued., vol 9, pg 119, 70

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : intraperitoneal  
 SPE SPECIES : rat  
 STU STUDY : LD50  
 DOS DOSE : 666 mg/kg  
 EFF EFFECT : PERIPHERAL NERVE AND SENSATION (Spastic paralysis  
 with or without sensory change); BEHAVIORAL (Muscle weakness;  
 Coma)  
 RF REFERENCE : Journal of Industrial Hygiene and Toxicology.  
 (Cambridge, MA) V.18-31, 1936-49. For publisher information, see  
 AEHLAU., vol 29, pg 85, 47

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : mouse  
 STU STUDY : LD50  
 DOS DOSE : 347 mg/kg  
 RF REFERENCE : Roczniki Panstwowego Zakladu Higieny. (Ars Polona,  
 POB 1001, 00-068 Warsaw 1, Poland) V.1- 1950-, vol 31, pg 373,  
 80

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : intraperitoneal  
 SPE SPECIES : mouse  
 STU STUDY : LDLo  
 DOS DOSE : 125 mg/kg  
 RF REFERENCE : Toxicology and Applied Pharmacology. (Academic  
 Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-, vol  
 23, pg 288, 72



FIGURE 8. 2,4-D IN DIMDI (continued)

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : dog  
 STU STUDY : LD50  
 DOS DOSE : 100 mg/kg  
 EFF EFFECT : BEHAVIORAL (Stiffness; Coma)  
 RF REFERENCE : Archives of Environmental Health. (Heldref Pub.,  
 4000 Albemarle St., NW, Washington, DC 20016) V.1- 1960-, vol 7,  
 pg 202, 63

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rabbit  
 STU STUDY : LDLo  
 DOS DOSE : 800 mg/kg  
 RF REFERENCE : Archives des Maladies Professionnelles de Medecine  
 du Travail et de Securite Sociale. (SPPIF, B.P.22, F-41353  
 Vineuil, France) V.7- 1946-, vol 12, pg 26, 51

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : skin  
 SPE SPECIES : rabbit  
 STU STUDY : LD50  
 DOS DOSE : 1400 mg/kg  
 EFF EFFECT : BEHAVIORAL (Ataxia); SKIN AND APPENDAGES (Primary  
 irritation)  
 RF REFERENCE : Quarterly Bulletin--Association of Food and Drug  
 Officials of the United States. (Denver, CO) V.3-38, 1939-74.,  
 vol 16, pg 3, 52

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : intraperitoneal  
 SPE SPECIES : rabbit  
 STU STUDY : LD50  
 DOS DOSE : 400 mg/kg  
 EFF EFFECT : PERIPHERAL NERVE AND SENSATION (Spastic paralysis  
 with or without sensory change); BEHAVIORAL (Muscle weakness;  
 Coma)  
 RF REFERENCE : Journal of Industrial Hygiene and Toxicology.  
 (Cambridge, MA) V.18-31, 1936-49. For publisher information, see  
 AEHLAU., vol 29, pg 85, 47

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : intravenous  
 SPE SPECIES : rabbit  
 STU STUDY : LD50  
 DOS DOSE : 400 mg/kg  
 EFF EFFECT : PERIPHERAL NERVE AND SENSATION (Spastic paralysis  
 with or without sensory change); BEHAVIORAL (Muscle weakness;  
 Coma)  
 RF REFERENCE : Journal of Industrial Hygiene and Toxicology.  
 (Cambridge, MA) V.18-31, 1936-49. For publisher information, see  
 AEHLAU., vol 29, pg 85, 47

\*\*DTYP DATA TYPE : GSTU  
 ROU ROUTE : oral  
 SPE SPECIES : guinea pig  
 STU STUDY : LD50  
 DOS DOSE : 469 mg/kg  
 RF REFERENCE : American Journal of Veterinary Research. (American  
 Veterinary Medical Assoc., 930 N. Meacham Rd., Schaumburg, IL  
 60196) V.1- 1940-, vol 15, pg 622, 54

\*\*DTYP DATA TYPE : GSTU

FIGURE 8. 2,4-D IN DIMDI (continued)

ROU ROUTE : intraperitoneal  
 SPE SPECIES : guinea pig  
 STU STUDY : LD50  
 DOS DOSE : 666 mg/kg  
 EFF EFFECT : PERIPHERAL NERVE AND SENSATION (Spastic paralysis with or without sensory change); BEHAVIORAL (Muscle weakness; Coma)  
 RF REFERENCE : Journal of Industrial Hygiene and Toxicology. (Cambridge, MA) V.18-31, 1936-49. For publisher information, see AEHLAU., vol 29, pg 85, 47

**\*\*DTYP DATA TYPE : GSTU**  
 ROU ROUTE : oral  
 SPE SPECIES : hamster  
 STU STUDY : LD50  
 DOS DOSE : 500 mg/kg  
 RF REFERENCE : Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-, vol 48, pg A192, 79

**\*\*DTYP DATA TYPE : GSTU**  
 ROU ROUTE : oral  
 SPE SPECIES : chicken  
 STU STUDY : LD50  
 DOS DOSE : 541 mg/kg  
 EFF EFFECT : GASTROINTESTINAL (Gastritis); BEHAVIORAL (Somnolence); LIVER (Fatty liver degeneration)  
 RF REFERENCE : American Journal of Veterinary Research. (American Veterinary Medical Assoc., 930 N. Meacham Rd., Schaumburg, IL 60196) V.1- 1940-, vol 15, pg 622, 54

**\*\*DTYP DATA TYPE : GSTU**  
 ROU ROUTE : oral  
 SPE SPECIES : mammal  
 STU STUDY : LD50  
 DOS DOSE : 375 mg/kg  
 RF REFERENCE : Science. (American Assoc. for the Advancement of Science, 1333 H St., NW, Washington, DC 20005) V.1- 1895-, vol 165, pg 465, 69

**\*\*DTYP DATA TYPE : MDSTU**  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : TDLo  
 DOS DOSE : 13650 mg/kg/13W-C  
 EFF EFFECT : NUTRITIONAL AND GROSS METABOLIC (Weight loss or decreased weight gain)  
 RF REFERENCE : Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1981-, vol 9, pg 423, 87

**\*\*DTYP DATA TYPE : MDSTU**  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : TDLo  
 DOS DOSE : 200 mg/kg/5W-I  
 EFF EFFECT : BEHAVIORAL (Muscle weakness)  
 RF REFERENCE : Neurobehavioral Toxicology and Teratology. (Fayetteville, NY) V.3-8, 1981-86. For publisher information, see NETEEC., vol 5, pg 331, 83

**\*\*DTYP DATA TYPE : MDSTU**  
 ROU ROUTE : oral  
 SPE SPECIES : rat

FIGURE 8. 2,4-D IN DIMDI (continued)

STU STUDY : TDLo  
 DOS DOSE : 54750 mg/kg/1Y-C  
 EFF EFFECT : SENSE ORGANS AND SPECIAL SENSES (NOSE,EYE,EAR, AND TASTE) (Retinal changes); BEHAVIORAL (Change in motor activity)  
 RF REFERENCE : Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH 44311) V.1- 1981-, vol 15, pg 23, 95

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : oral  
 SPE SPECIES : dog  
 STU STUDY : TDLo  
 DOS DOSE : 700 mg/kg/90D-I  
 EFF EFFECT : BLOOD (Changes in other cell count); NUTRITIONAL AND GROSS METABOLIC (Weight loss or decreased weight gain); RELATED TO CHRONIC DATA (Death in the "U" date type field)  
 RF REFERENCE : AMA Archives of Industrial Hygiene and Occupational Medicine. (Chicago, IL) V.2-10, 1950-54. For publisher information, see AEHLAU., vol 7, pg 61, 53

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : oral  
 SPE SPECIES : dog  
 STU STUDY : TDLo  
 DOS DOSE : 1820 mg/kg/52W-C  
 EFF EFFECT : KIDNEY, URETER, BLADDER (Changes in tubules); LIVER (Other changes); BLOOD (Changes in serum composition)  
 RF REFERENCE : Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1981-, vol 29, pg 78, 96

\*\*DTYP DATA TYPE : MDSTU  
 ROU ROUTE : intravenous  
 SPE SPECIES : dog  
 STU STUDY : TDLo  
 DOS DOSE : 300 mg/kg/6D-I  
 EFF EFFECT : MUSCOLOSKELETAL (Changes in teeth and supporting structures); SKIN AND APPENDAGES (Dermatitis, other); RELATED TO CHRONIC DATA (Death in the "U" date type field)  
 RF REFERENCE : Journal of Industrial Hygiene and Toxicology. (Cambridge, MA) V.18-31, 1936-49. For publisher information, see AEHLAU., vol 29, pg 85, 47

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Mutation in Microorganisms  
 SCR SPECIES/CELL TYPE/ROUTE : Salmonella typhimurium  
 DOS DOSE : 250 ug/plate (-S9)  
 RF REFERENCE : Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-, vol 204, pg 615, 88

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : DNA Repair  
 SCR SPECIES/CELL TYPE/ROUTE : Escherichia coli  
 DOS DOSE : 5 mg/disc  
 RF REFERENCE : National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information., PB80-133226

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : DNA Adduct  
 SCR SPECIES/CELL TYPE/ROUTE : Escherichia coli  
 DOS DOSE : 20 umol/L  
 RF REFERENCE : Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-, vol 89, pg 95,

81

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : DNA Repair  
 SCR SPECIES/CELL TYPE/ROUTE : Bacillus subtilis  
 DOS DOSE : 5 mg/disc  
 RF REFERENCE : National Technical Information Service.  
 (Springfield, VA 22161) Formerly U.S. Clearinghouse for  
 Scientific & Technical Information., PB80-133226

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Mutation in Microorganisms  
 SCR SPECIES/CELL TYPE/ROUTE : other microorganisms  
 DOS DOSE : 1 gm/L (-S9)  
 RF REFERENCE : Microbios Letters. (Faculty Press, 88 Regent St.,  
 Cambridge, UK) V.1- 1976-, vol 5, pg 103, 77

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Mutation in Microorganisms  
 SCR SPECIES/CELL TYPE/ROUTE : other microorganisms  
 DOS DOSE : 1 gm/L (-S9)  
 RF REFERENCE : Microbios Letters. (Faculty Press, 88 Regent St.,  
 Cambridge, UK) V.1- 1976-, vol 5, pg 103, 77

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Mutation in Microorganisms  
 SCR SPECIES/CELL TYPE/ROUTE : other microorganisms  
 DOS DOSE : 1 gm/L (-S9)  
 RF REFERENCE : Microbios Letters. (Faculty Press, 88 Regent St.,  
 Cambridge, UK) V.1- 1976-, vol 5, pg 103, 77

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Mutation in Microorganisms  
 SCR SPECIES/CELL TYPE/ROUTE : other microorganisms  
 DOS DOSE : 1 gm/L (-S9)  
 RF REFERENCE : Microbios Letters. (Faculty Press, 88 Regent St.,  
 Cambridge, UK) V.1- 1976-, vol 5, pg 103, 77

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Specific Locus Test  
 SCR SPECIES/CELL TYPE/ROUTE : Drosophila melanogaster  
 DOS DOSE : 5 mmol/L  
 RF REFERENCE : Mutation Research. (Elsevier Science Pub. B.V., POB  
 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-, vol 319, pg  
 237, 93

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Specific Locus Test  
 SCR SPECIES/CELL TYPE/ROUTE : Drosophila melanogaster  
 DOS DOSE : 10 ppb  
 RF REFERENCE : Environmental and Molecular Mutagenesis. (Alan R.  
 Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987-, vol  
 25, pg 148, 95

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Sex Chromosome Loss and Nondisjunction  
 SCR SPECIES/CELL TYPE/ROUTE : Drosophila melanogaster  
 DOS DOSE : 25 ppm  
 RF REFERENCE : Ecological Bulletins. (Editorial Service of FRN,  
 Box 6710, S-11385, Stockholm, Sweden) No.19- 1975-, vol 27, pg  
 190, 78

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Sex Chromosome Loss and Nondisjunction  
 SCR SPECIES/CELL TYPE/ROUTE : Drosophila melanogaster  
 DOS DOSE : 1000 ppm/15D  
 RF REFERENCE : Ecological Bulletins. (Editorial Service of FRN,

FIGURE 8. 2,4-D IN DIMDI (continued)

Box 6710, S-11385, Stockholm, Sweden) No.19- 1975-, vol 27, pg  
182, 78

\*\*DTYP DATA TYPE : MSTU  
TSY TEST SYSTEM : Mutation in Microorganisms  
SCR SPECIES/CELL TYPE/ROUTE : Saccharomyces cerevisiae  
DOS DOSE : 150 mg/L (-S9)  
RF REFERENCE : Ecological Bulletins. (Editorial Service of FRN,  
Box 6710, S-11385, Stockholm, Sweden) No.19- 1975-, vol 27, pg  
193, 78

\*\*DTYP DATA TYPE : MSTU  
TSY TEST SYSTEM : Gene Conversion and Mitotic Recombination  
SCR SPECIES/CELL TYPE/ROUTE : Aspergillus nidulans  
DOS DOSE : 4 umol/L  
RF REFERENCE : Mutation Research. (Elsevier Science Pub. B.V., POB  
211, 1000 AE Amsterdam, Netherlands) V.1- 1964-, vol 204, pg  
615, 88

\*\*DTYP DATA TYPE : MSTU  
TSY TEST SYSTEM : DNA Damage  
SCR SPECIES/CELL TYPE/ROUTE : Salmon- Sperm  
DOS DOSE : 1 mmol/L  
RF REFERENCE : Phytochemistry. An International Journal of Plant  
Biochemistry. (Pergamon Press Inc., Maxwell House, Fairview  
Park, Elmsford, NY 10523) V.1- 1961-, vol 11, pg 3135, 72

\*\*DTYP DATA TYPE : MSTU  
TSY TEST SYSTEM : Unscheduled DNA Synthesis  
SCR SPECIES/CELL TYPE/ROUTE : human- Fibroblast  
DOS DOSE : 1 umol/L  
RF REFERENCE : Mutation Research. (Elsevier Science Pub. B.V., POB  
211, 1000 AE Amsterdam, Netherlands) V.1- 1964-, vol 42, pg 161,  
77

\*\*DTYP DATA TYPE : MSTU  
TSY TEST SYSTEM : Cytogenetic Analysis  
SCR SPECIES/CELL TYPE/ROUTE : human- Lymphocyte  
DOS DOSE : 20 ug/L  
RF REFERENCE : Cytology and Genetics (English Translation).  
Translation of TGANAK. (Allerton Press Inc., 150 Fifth Ave., New  
York, NY 10011) V.8- 1974-, vol 8(3), pg 6, 74

\*\*DTYP DATA TYPE : MSTU  
TSY TEST SYSTEM : Sister Chromatid Exchange  
SCR SPECIES/CELL TYPE/ROUTE : human- Lymphocyte  
DOS DOSE : 10 mg/L  
RF REFERENCE : Journal of Heredity. (American Genetic Assoc., 818  
18th St., NW, Washington, DC 20006) V.5- 1914-, vol 73, pg 224,  
82

\*\*DTYP DATA TYPE : MSTU  
TSY TEST SYSTEM : Cytogenetic Analysis  
SCR SPECIES/CELL TYPE/ROUTE : rat  
DOS DOSE : 100 ug/kg  
RF REFERENCE : Cytologia. (Japan Pub. Trading Co. (USA), 1255  
Howard St., San Francisco, CA 94103) V.1- 1929-, vol 52, pg 275,  
87

\*\*DTYP DATA TYPE : MSTU  
TSY TEST SYSTEM : DNA Inhibition  
SCR SPECIES/CELL TYPE/ROUTE : mouse  
DOS DOSE : 200 mg/kg  
RF REFERENCE : Mutation Research. (Elsevier Science Pub. B.V., POB  
211, 1000 AE Amsterdam, Netherlands) V.1- 1964-, vol 55, pg 197,  
78

FIGURE 8. 2,4-D IN DIMDI (continued)

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Cytogenetic Analysis  
 SCR SPECIES/CELL TYPE/ROUTE : mouse  
 DOS DOSE : 100 mg/kg  
 RF REFERENCE : Cytology and Genetics (English Translation).  
 Translation of TGANAK. (Allerton Press Inc., 150 Fifth Ave., New  
 York, NY 10011) V.8- 1974-, vol 8(3), pg 6, 74

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : DNA Inhibition  
 SCR SPECIES/CELL TYPE/ROUTE : hamster- Ovary  
 DOS DOSE : 1 mmol/L  
 RF REFERENCE : Toxicology Letters. (Elsevier Science Pub. B.V.,  
 POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977-, vol 29, pg  
 137, 85

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Cytogenetic Analysis  
 SCR SPECIES/CELL TYPE/ROUTE : hamster- Ovary  
 DOS DOSE : 2400 mg/L  
 RF REFERENCE : Environmental and Molecular Mutagenesis. (Alan R.  
 Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987-, vol  
 10(Suppl 10), pg 1, 87

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Sister Chromatid Exchange  
 SCR SPECIES/CELL TYPE/ROUTE : hamster- Ovary  
 DOS DOSE : 167 mg/L  
 RF REFERENCE : Environmental and Molecular Mutagenesis. (Alan R.  
 Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987-, vol  
 10(Suppl 10), pg 1, 87

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Mutation in Mammalian Somatic Cells  
 SCR SPECIES/CELL TYPE/ROUTE : hamster- Lung  
 DOS DOSE : 10 umol/L  
 RF REFERENCE : Chemico-Biological Interactions. (Elsevier  
 Scientific Pub. Ireland Ltd., POB 85, Limerick, Ireland) V.1-  
 1969-, vol 19, pg 369, 77

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : Cytogenetic Analysis  
 SCR SPECIES/CELL TYPE/ROUTE : cattle- Kidney  
 DOS DOSE : 1 ppm  
 RF REFERENCE : In Vitro. (Rockville, MD) V.1-20, 1965-85. For  
 publisher information, see ICDBEO., vol 8, pg 416, 73

\*\*DTYP DATA TYPE : MSTU  
 TSY TEST SYSTEM : DNA Damage  
 SCR SPECIES/CELL TYPE/ROUTE : mammal- Lymphocyte  
 DOS DOSE : 1 mmol/L  
 RF REFERENCE : Phytochemistry. An International Journal of Plant  
 Biochemistry. (Pergamon Press Inc., Maxwell House, Fairview  
 Park, Elmsford, NY 10523) V.1- 1961-, vol 11, pg 3135, 72

\*\*DTYP DATA TYPE : RSTU  
 ROU ROUTE : oral  
 SPE SPECIES : rat  
 STU STUDY : TDLo  
 DOS DOSE : 220 ug/kg (1-22D preg)  
 EFF EFFECT : Specific Developmental Abnormalities (Mlood and  
 lymphatic system)  
 RF REFERENCE : Gigiena i Sanitariya. For English translation, see  
 HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1-  
 1936-, vol 50(10), pg 76, 85

FIGURE 8. 2,4-D IN DIMDI (continued)

**\*\*DTYP DATA TYPE : RSTU**  
**ROU ROUTE : oral**  
**SPE SPECIES : rat**  
**STU STUDY : TDLo**  
**DOS DOSE : 1 gm/kg (6-15D preg)**  
**EFF EFFECT : Specific Developmental Abnormalities**  
 (Musculoskeletal system); Effects on Embryo or Fetus  
 (Fetotoxicity; Fetal death)  
**RF REFERENCE : Toxicology and Applied Pharmacology. (Academic**  
 Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-, vol  
 22, pg 14, 72

**\*\*DTYP DATA TYPE : RSTU**  
**ROU ROUTE : oral**  
**SPE SPECIES : rat**  
**STU STUDY : TDLo**  
**DOS DOSE : 125 mg/kg (6-15D preg)**  
**EFF EFFECT : Specific Developmental Abnormalities**  
 (Musculoskeletal system)  
**RF REFERENCE : Food and Cosmetics Toxicology. (London, UK) V.1-19,**  
 1963-81. For publisher information, see FCTOD7., vol 9, pg 801,  
 71

**\*\*DTYP DATA TYPE : RSTU**  
**ROU ROUTE : oral**  
**SPE SPECIES : rat**  
**STU STUDY : TDLo**  
**DOS DOSE : 500 mg/kg (6-15D preg)**  
**EFF EFFECT : Effects on Embryo or Fetus (Fetotoxicity); Specific**  
 Developmental Abnormalities (Central nervous system; Urogenital  
 system; Homeostasis); Effects on Newborn (Growth statistics)  
**RF REFERENCE : Food and Cosmetics Toxicology. (London, UK) V.1-19,**  
 1963-81. For publisher information, see FCTOD7., vol 9, pg 801,  
 71

**\*\*DTYP DATA TYPE : RSTU**  
**ROU ROUTE : oral**  
**SPE SPECIES : mouse**  
**STU STUDY : TDLo**  
**DOS DOSE : 707 mg/kg (11-14D preg)**  
**EFF EFFECT : Effects on Embryo or Fetus (Fetotoxicity; Fetal**  
 death); Specific Developmental Abnormalities (Craniofacial)  
**RF REFERENCE : Archives of Environmental Contamination and**  
 Toxicology. (Springer-Verlag New York, Inc., Service Center, 44  
 Hartz Way, Secaucus, NJ 07094) V.1- 1973-, vol 6, pg 33, 77

**\*\*DTYP DATA TYPE : RSTU**  
**ROU ROUTE : oral**  
**SPE SPECIES : mouse**  
**STU STUDY : TDLo**  
**DOS DOSE : 900 mg/kg (6-14D preg)**  
**EFF EFFECT : Effects on Fertility (Litter size); Effects on**  
 Embryo or Fetus (Extra embryonic structures); Specific  
 Developmental Abnormalities (Eye, ear)  
**RF REFERENCE : National Technical Information Service.**  
 (Springfield, VA 22161) Formerly U.S. Clearinghouse for  
 Scientific & Technical Information., PB223-160

**\*\*DTYP DATA TYPE : RSTU**  
**ROU ROUTE : oral**  
**SPE SPECIES : mouse**  
**STU STUDY : TDLo**  
**DOS DOSE : 438 mg/kg (8-12D preg)**

FIGURE 8. 2,4-D IN DIMDI (continued)

EFF EFFECT : Effects on Newborn (Growth statistics)  
 RF REFERENCE : Teratogenesis, Carcinogenesis, and Mutagenesis.  
 (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.1-  
 1980-, vol 7, pg 7, 87

\*\*DTYP DATA TYPE : RSTU  
 ROU ROUTE : subcutaneous  
 SPE SPECIES : mouse  
 STU STUDY : TDLo  
 DOS DOSE : 882 mg/kg (6-14D preg)  
 EFF EFFECT : Effects on Embryo or Fetus (Fetal death); Specific  
 Developmental Abnormalities (Central nervous system); Effects on  
 Embryo or Fetus (Extra embryonic structures)  
 RF REFERENCE : National Technical Information Service.  
 (Springfield, VA 22161) Formerly U.S. Clearinghouse for  
 Scientific & Technical Information., PB223-160

\*\*DTYP DATA TYPE : RSTU  
 ROU ROUTE : subcutaneous  
 SPE SPECIES : mouse  
 STU STUDY : TDLo  
 DOS DOSE : 900 mg/kg (6-14D preg)  
 EFF EFFECT : Effects on Embryo or Fetus (Fetotoxicity); Specific  
 Developmental Abnormalities (Eye, ear; Craniofacial); Effects on  
 Fertility (Pre-implantation mortality; Litter size)  
 RF REFERENCE : National Technical Information Service.  
 (Springfield, VA 22161) Formerly U.S. Clearinghouse for  
 Scientific & Technical Information., PB223-160

\*\*DTYP DATA TYPE : RSTU  
 ROU ROUTE : oral  
 SPE SPECIES : hamster  
 STU STUDY : TDLo  
 DOS DOSE : 200 mg/kg (7-11D preg)  
 EFF EFFECT : Effects on Fertility (Litter size)  
 RF REFERENCE : Bulletin of Environmental Contamination and  
 Toxicology. (Springer-Verlag New York, Inc., Service Center, 44  
 Hartz Way, Secaucus, NJ 07094) V.1- 1966-, vol 6, pg 559, 71

\*\*DTYP DATA TYPE : SSTU  
 ROU ROUTE : skin  
 SPE SPECIES : rabbit  
 DOS DOSE : 500 mg/24H MLD  
 RF REFERENCE : "Sbornik Vysledku Toxikologickeho Vysetreni Latek A  
 Pripravku," Marhold, J.V., Institut Pro Vychovu Vedoucicn  
 Pracovniku Chemickeho Prumyclu Praha, Czechoslovakia, 1972, vol  
 -, pg 279, 72

\*\*DTYP DATA TYPE : SSTU  
 ROU ROUTE : eye  
 SPE SPECIES : rabbit  
 DOS DOSE : 750 ug/24H SEV  
 RF REFERENCE : "Sbornik Vysledku Toxikologickeho Vysetreni Latek A  
 Pripravku," Marhold, J.V., Institut Pro Vychovu Vedoucicn  
 Pracovniku Chemickeho Prumyclu Praha, Czechoslovakia, 1972, vol  
 -, pg 279, 72



FIGURE 9. TNT ON CCINFO DISC

\*\*\*\*\*  
 \* R T E C S (R) \*  
 \*  
 \* Produced by : National Institute for Occupational Safety and Health \*  
 \* Provided by : Canadian Centre for Occupational Health and Safety \*  
 \* Issue : 96-4 (November, 1996) \*

\*\*\* CHEMICAL IDENTIFICATION \*\*\*

RTECS NUMBER : XU0175000  
 CHEMICAL NAME : Toluene, 2,4,6-trinitro-  
 CAS REGISTRY NUMBER : 118-96-7  
 LAST UPDATED : 9607  
 DATA ITEMS CITED : 56  
 MOLECULAR FORMULA : C7-H5-N3-O6  
 MOLECULAR WEIGHT : 227.15  
 WISWESSER LINE NOTATION : WNR B1 CNW ENW  
 COMPOUND DESCRIPTOR : Agricultural Chemical  
 Tumorigen  
 Mutagen  
 Reproductive Effector  
 Human  
 Primary Irritant

SYNONYMS/TRADE NAMES :

- \* Benzene, 2-methyl-1,3,5-trinitro-
- \* Entsufo
- \* 2-Methyl-1,3,5-trinitrobenzene
- \* NCI-C56155
- \* TNT
- \* alpha-Tnt
- \* TNT (OSHA)
- \* TNT, dry or wetted with <30% water, by weight (UN0209) (DOT)
- \* TNT-tolite
- \* Tolit
- \* Tolite
- \* 2,4,6-Trinitrotolueen
- \* Trinitrotoluene
- \* Trinitrotoluene (UN0209) (DOT)
- \* Trinitrotoluene, wetted with not <30% water, by weight (UN1356) (DOT)
- \* s-Trinitrotoluene
- \* sym-Trinitrotoluene
- \* 2,4,6-Trinitrotoluene (ACGIH:OSHA)
- \* s-Trinitrotoluol
- \* sym-Trinitrotoluol
- \* 2,4,6-Trinitrotoluol
- \* Tritol
- \* Triton
- \* Trojnitrotoluen
- \* Trotyl
- \* Trotyl oil
- \* UN0209 (DOT)
- \* UN1356 (DOT)

\*\*\* HEALTH HAZARD DATA \*\*\*

\*\* SKIN/EYE IRRITATION DATA \*\*

TYPE OF TEST : Standard Draize test

FIGURE 9. TNT ON CCINFO DISC (continued)

ROUTE OF EXPOSURE : Administration onto the skin  
SPECIES OBSERVED : Rodent - rabbit  
DOSE/DURATION : 500 mg/24H  
REACTION SEVERITY : Mild  
REFERENCE :

NTIS\*\* National Technical Information Service. (Springfield, VA 22161)  
Formerly U.S. Clearinghouse for Scientific & Technical Information.  
Volume(issue)/page/year: AD-B011-150

\*\* ACUTE TOXICITY DATA \*\*

TYPE OF TEST : LDLo - Lowest published lethal dose  
ROUTE OF EXPOSURE : Oral  
SPECIES OBSERVED : Human  
DOSE/DURATION : 28 gm/kg  
TOXIC EFFECTS :

Behavioral - hallucinations, distorted perceptions  
Lungs, Thorax, or Respiration - cyanosis  
Gastrointestinal - other changes

REFERENCE :

34ZIAG "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969 Volume(issue)/page/year: -,610,69

TYPE OF TEST : LD50 - Lethal dose, 50 percent kill  
ROUTE OF EXPOSURE : Oral  
SPECIES OBSERVED : Rodent - rat  
DOSE/DURATION : 795 mg/kg  
TOXIC EFFECTS :

Behavioral - somnolence (general depressed activity)  
Behavioral - tremors  
Behavioral - convulsions or effect on seizure threshold

REFERENCE :

JTEHD6 Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76-  
Volume(issue)/page/year: 9,565,82

TYPE OF TEST : LD50 - Lethal dose, 50 percent kill  
ROUTE OF EXPOSURE : Oral  
SPECIES OBSERVED : Rodent - mouse  
DOSE/DURATION : 660 mg/kg  
TOXIC EFFECTS :

Behavioral - somnolence (general depressed activity)  
Behavioral - tremors  
Behavioral - convulsions or effect on seizure threshold

REFERENCE :

JTEHD6 Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76-  
Volume(issue)/page/year: 9,565,82

TYPE OF TEST : LDLo - Lowest published lethal dose  
ROUTE OF EXPOSURE : Oral  
SPECIES OBSERVED : Mammal - cat  
DOSE/DURATION : 1850 mg/kg  
TOXIC EFFECTS :

Lungs, Thorax, or Respiration - dyspnea  
Lungs, Thorax, or Respiration - cyanosis  
Skin and Appendages - dermatitis, allergic (after systemic exposure)

REFERENCE :

FIGURE 9. TNT ON CCINFO DISC (continued)

MRCSAB Special Report Series--Medical Research Council (United Kingdom). (Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH, UK) No.1- 1915- Volume(issue)/page/year: 58,32,21

TYPE OF TEST : LDLo - Lowest published lethal dose  
 ROUTE OF EXPOSURE : Subcutaneous  
 SPECIES OBSERVED : Mammal - cat  
 DOSE/DURATION : 200 mg/kg  
 TOXIC EFFECTS :  
 Lungs, Thorax, or Respiration - dyspnea  
 Lungs, Thorax, or Respiration - cyanosis  
 Skin and Appendages - dermatitis, allergic (after systemic exposure)

REFERENCE :  
 MRCSAB Special Report Series--Medical Research Council (United Kingdom). (Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH, UK) No.1- 1915- Volume(issue)/page/year: 58,32,21

TYPE OF TEST : LDLo - Lowest published lethal dose  
 ROUTE OF EXPOSURE : Oral  
 SPECIES OBSERVED : Rodent - rabbit  
 DOSE/DURATION : 500 mg/kg  
 TOXIC EFFECTS :  
 Behavioral - convulsions or effect on seizure threshold  
 Gastrointestinal - hypermotility, diarrhea  
 Lungs, Thorax, or Respiration - cyanosis

REFERENCE :  
 MRCSAB Special Report Series--Medical Research Council (United Kingdom). (Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH, UK) No.1- 1915- Volume(issue)/page/year: 58,32,21

TYPE OF TEST : LDLo - Lowest published lethal dose  
 ROUTE OF EXPOSURE : Subcutaneous  
 SPECIES OBSERVED : Rodent - rabbit  
 DOSE/DURATION : 500 mg/kg  
 TOXIC EFFECTS :  
 Behavioral - convulsions or effect on seizure threshold  
 Gastrointestinal - hypermotility, diarrhea  
 Lungs, Thorax, or Respiration - cyanosis

REFERENCE :  
 MRCSAB Special Report Series--Medical Research Council (United Kingdom). (Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH, UK) No.1- 1915- Volume(issue)/page/year: 58,32,21

\*\* OTHER MULTIPLE DOSE TOXICITY DATA \*\*

TYPE OF TEST : TDLo - Lowest published toxic dose  
 ROUTE OF EXPOSURE : Oral  
 SPECIES OBSERVED : Rodent - rat  
 DOSE/DURATION : 7200 mg/kg/6W-I  
 TOXIC EFFECTS :  
 Liver - other changes  
 Blood - changes in serum composition (TP, bilirubin, cholesterol)  
 Related to Chronic Data - changes in testicular weight

REFERENCE :  
 TOLED5 Toxicology Letters. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977- Volume(issue)/page/year: 55,343,91

TYPE OF TEST : TDLo - Lowest published toxic dose

FIGURE 9. TNT ON CCINFO DISC (continued)

ROUTE OF EXPOSURE : Oral  
 SPECIES OBSERVED : Rodent - rat  
 DOSE/DURATION : 11375 mg/kg/13W-C  
 TOXIC EFFECTS :  
   Behavioral - food intake (animal)  
   Blood - normocytic anemia  
   Nutritional and Gross Metabolic - weight loss or decreased weight gain  
 REFERENCE :  
   TXCYAC Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1- 1973- Volume(issue)/page/year: 32,253,84

TYPE OF TEST : TDLo - Lowest published toxic dose  
 ROUTE OF EXPOSURE : Oral  
 SPECIES OBSERVED : Rodent - rat  
 DOSE/DURATION : 3 gm/kg/30D-I  
 TOXIC EFFECTS :  
   Liver - other changes  
   Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - monoamine oxidase  
   Biochemical - Metabolism (Intermediary) - lipids including transport  
 REFERENCE :  
   GTPZAB Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1957- Volume(issue)/page/year: 18(10),57,74

TYPE OF TEST : TDLo - Lowest published toxic dose  
 ROUTE OF EXPOSURE : Oral  
 SPECIES OBSERVED : Rodent - mouse  
 DOSE/DURATION : 11 mg/kg/13W-C  
 TOXIC EFFECTS :  
   Liver - changes in liver weight  
   Endocrine - changes in spleen weight  
   Blood - changes in spleen  
 REFERENCE :  
   JTEHD6 Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76- Volume(issue)/page/year: 9,565,82

TYPE OF TEST : TDLo - Lowest published toxic dose  
 ROUTE OF EXPOSURE : Oral  
 SPECIES OBSERVED : Mammal - dog  
 DOSE/DURATION : 182 mg/kg/13W-C  
 TOXIC EFFECTS :  
   Liver - changes in liver weight  
   Blood - normocytic anemia  
   Nutritional and Gross Metabolic - weight loss or decreased weight gain  
 REFERENCE :  
   JTEHD6 Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76- Volume(issue)/page/year: 9,565,82

TYPE OF TEST : TDLo - Lowest published toxic dose  
 ROUTE OF EXPOSURE : Oral  
 SPECIES OBSERVED : Mammal - dog  
 DOSE/DURATION : 1456 mg/kg/26W-I  
 TOXIC EFFECTS :  
   Liver - changes in liver weight  
   Blood - normocytic anemia

FIGURE 9. TNT ON CCINFO DISC (continued)

Blood - changes in spleen

REFERENCE :

TXCYAC Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1- 1973- Volume(issue)/page/year: 63,233,90

\*\* REPRODUCTIVE DATA \*\*

TYPE OF TEST : TDLo - Lowest published toxic dose  
ROUTE OF EXPOSURE : Oral  
SPECIES OBSERVED : Rodent - rat  
DOSE : 5376 mg/kg  
SEX/DURATION : male 28 day(s) pre-mating

TOXIC EFFECTS :

Reproductive - Paternal Effects - testes, epididymis, sperm duct

REFERENCE :

JTEHD6 Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76- Volume(issue)/page/year: 9,565,82

\*\* MUTATION DATA \*\*

TYPE OF TEST : Mutation in microorganisms  
TEST SYSTEM : Bacteria - Salmonella typhimurium  
DOSE/DURATION : 10 ug/plate

REFERENCE :

NTIS\*\* National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: AD-A080-146

TYPE OF TEST : Body fluid assay  
TEST SYSTEM : Rodent - rat Bacteria - Salmonella typhimurium  
DOSE/DURATION : 50 mg/kg

REFERENCE :

MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964- Volume(issue)/page/year: 262,167,91

TYPE OF TEST : Mutation in mammalian somatic cells  
TEST SYSTEM : Rodent - mouse Lymphocyte  
DOSE/DURATION : 40 mg/L

REFERENCE :

CALEDQ Cancer Letters (Shannon, Ireland). (Elsevier Scientific Pub. Ireland Ltd., POB 85, Limerick, Ireland) V.1- 1975- Volume(issue)/page/year: 20,103,83

\*\*\* REVIEWS \*\*\*

ACGIH TLV-TWA 0.5 mg/m3 (skin)

85INAB "Documentation of the Threshold Limit Values and Biological Exposure Indices," 5th ed., Cincinnati, OH, American Conference of Governmental Industrial Hygienists, Inc., 1986 Volume(issue)/page/year: 6,1652,91

IARC Cancer Review:Animal Inadequate Evidence

IMEMDT IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1- 1972- Volume(issue)/page/year: 65,449,96

IARC Cancer Review:Human Inadequate Evidence

IMEMDT IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals

FIGURE 9. TNT ON CCINFO DISC (continued)

to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1-  
1972- Volume(issue)/page/year: 65,449,96

IARC Cancer Review:Group 3

IMEMDT IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals  
to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1-  
1972- Volume(issue)/page/year: 65,449,96

TOXICOLOGY REVIEW

NTIS\*\* National Technical Information Service. (Springfield, VA 22161)  
Formerly U.S. Clearinghouse for Scientific & Technical Information.  
Volume(issue)/page/year: AD778-725

TOXICOLOGY REVIEW

CRTXB2 CRC Critical Reviews in Toxicology. (CRC Press, Inc., 2000 Corporate  
Blvd., NW, Boca Raton, FL 33431) V.1- 1971- Volume(issue)/page/year:  
1(1),93,71

TOXICOLOGY REVIEW

PAREAQ Pharmacological Reviews. (Williams & Wilkins, 428 E. Preston St.,  
Baltimore, MD 21202) V.1- 1949- Volume(issue)/page/year: 4,1,52

\*\*\* U.S. STANDARDS AND REGULATIONS \*\*\*

DOT-HAZARD:EXPLOSIVE 1.1D; LABEL:EXPLOSIVE 1.1D (UN0209)

CFRGR Code of Federal Regulations. (U.S. Government Printing Office, Supt.  
of Documents, Washington, DC 20402) Volume(issue)/page/year: 49,172.101,92

DOT-HAZARD:4.1; LABEL:FLAMMABLE SOLID (UN1356)

CFRGR Code of Federal Regulations. (U.S. Government Printing Office, Supt.  
of Documents, Washington, DC 20402) Volume(issue)/page/year: 49,172.101,92

MSHA STANDARD-air:TWA 0.2 ppm (0.5 mg/m3) (skin)

DTLVS\* "Documentation of Threshold Limit Values for Substances in Workroom  
Air." For publisher information, see 85INAB. Volume(issue)/page/year:  
3,270,71

OSHA PEL (Gen Indu):8H TWA 1.50 mg/m3 (skin)

CFRGR Code of Federal Regulations. (U.S. Government Printing Office, Supt.  
of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1910.1000,94

OSHA PEL (Construc):8H TWA 1.50 mg/m3 (skin)

CFRGR Code of Federal Regulations. (U.S. Government Printing Office, Supt.  
of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1926.55,94

OSHA PEL (Shipyard):8H TWA 1.50 mg/m3 (skin)

CFRGR Code of Federal Regulations. (U.S. Government Printing Office, Supt.  
of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1915.1000,93

OSHA PEL (Fed Cont):8H TWA 1.50 mg/m3 (skin)

CFRGR Code of Federal Regulations. (U.S. Government Printing Office, Supt.  
of Documents, Washington, DC 20402) Volume(issue)/page/year: 41,50-204.50,94

\*\*\* OCCUPATIONAL EXPOSURE LIMITS \*\*\*

OEL-ARAB Republic of Egypt:TWA 0.5 mg/m3 JAN93

OEL-AUSTRALIA:TWA 0.5 mg/m3;Skin JAN93

FIGURE 9. TNT ON CCINFO DISC (continued)

OEL-BELGIUM:TWA 0.5 mg/m<sup>3</sup>;Skin JAN93

OEL-DENMARK:STEL 0.5 mg/m<sup>3</sup>;Skin JAN93

OEL-FINLAND:TWA 0.5 mg/m<sup>3</sup>;STEL 3 mg/m<sup>3</sup>;Skin JAN93

OEL-FRANCE:TWA 0.5 mg/m<sup>3</sup>;Skin JAN93

OEL-GERMANY:TWA 0.01 ppm (0.1 mg/m<sup>3</sup>);Skin;Carcinogen JAN93

OEL-HUNGARY:TWA 0.3 mg/m<sup>3</sup>;STEL 0.5 mg/m<sup>3</sup>;Skin JAN93

OEL-THE NETHERLANDS:TWA 0.5 mg/m<sup>3</sup>;Skin JAN93

OEL-THE PHILIPPINES:TWA 1.5 mg/m<sup>3</sup>;Skin JAN93

OEL-RUSSIA:TWA 0.1 mg/m<sup>3</sup>;STEL 0.5 mg/m<sup>3</sup>;Skin JAN93

OEL-SWITZERLAND:TWA 0.01 ppm (0.1 mg/m<sup>3</sup>);STEL 0.02 ppm;Skin JAN93

OEL-TURKEY:TWA 1.5 mg/m<sup>3</sup>;Skin JAN93

OEL-UNITED KINGDOM:TWA 0.5 mg/m<sup>3</sup>;STEL 0.5 mg/m<sup>3</sup> JAN93

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV

\*\*\* NIOSH STANDARDS DEVELOPMENT AND SURVEILLANCE DATA \*\*\*

NIOSH RECOMMENDED EXPOSURE LEVEL (REL) :

NIOSH REL TO 2,4,6-TRINITROTOLUENE-air:10H TWA 0.5 mg/m<sup>3</sup> (Sk)

REFERENCE :

NIOSH\* National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda. Volume(issue)/page/year: DHHS #92-100,92

NIOSH OCCUPATIONAL EXPOSURE SURVEY DATA :

NOES - National Occupational Exposure Survey (1983)

NOES Hazard Code - 74550

No. of Facilities: 10 (estimated)

No. of Industries: 2

No. of Occupations: 1

No. of Employees: 31 (estimated)

\*\*\* STATUS IN U.S. \*\*\*

EPA GENETOX PROGRAM 1988, Positive: Histidine reversion-Ames test

EPA TSCA Section 8(b) CHEMICAL INVENTORY

EPA TSCA Section 8(d) unpublished health/safety studies

On EPA IRIS database

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JULY 1996

FIGURE 9. TNT ON CCINFO DISC (continued)

OSHA ANALYTICAL METHOD #44

\*\*\* END OF RECORD \*\*\*