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CHEMICAL IDENTIFICATION

RTECS Number UY5790000
 Chemical Name 2-Pyrrolidinone, 1-methyl-
 CAS Registry Number 872-50-4
 Other CAS Registry Nos. 26138-58-9
 Last Updated 201809
 Data Items Cited 70
 Molecular Formula C5-H9-N-O
 Molecular Weight 99.15
 Wiswesser Line Notation T5NVTJ A
 Compound Descriptor Tumorigen
 Mutagen
 Human
 Primary Irritant
 Reproductive Effector

Synonyms/Trade Names

- * N-Methylpyrrolidinone
- * N-Methyl-2-pyrrolidinone
- * 1-Methyl-2-pyrrolidinone
- * 1-Methyl-5-pyrrolidinone
- * N-Methylpyrrolidone
- * N-Methyl-alpha-pyrrolidone
- * N-Methyl-2-pyrrolidone
- * 1-Methyl-2-pyrrolidone
- * M-Pyrol
- * NMP

HEALTH HAZARD DATA

SKIN/EYE IRRITATION DATA

Type of Test	Route of Exposure or Administration	Species/Test System	Dose Data	Reaction Severity	Reference
Standard Draize test	Administration into the eye	Rodent - rabbit	100 mg	Moderate	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 26,475,1988

ACUTE TOXICITY DATA

Route of

Type of Test	Exposure or Administration	Species/Test System	Dose Data	Toxic Effects	Reference
LD50 - Lethal dose, 50 percent kill	Oral	Rodent - rat	3914 mg/kg	Details of toxic effects not reported other than lethal dose value	ARZNAD Arzneimittel-Forschung. Drug Research. (Editio Cantor Verlag, Postfach 1255, W-7960 Aulendorf, Fed. Rep. Ger.) V.1- 1951- Volume(issue)/page/year: 26,1581,1976
LCLo - Lowest published lethal concentration	Inhalation	Rodent - rat	1 gm/m3	Details of toxic effects not reported other than lethal dose value	NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: OTS0534725
LD50 - Lethal dose, 50 percent kill	Intraperitoneal	Rodent - rat	2472 mg/kg	Details of toxic effects not reported other than lethal dose value	ARZNAD Arzneimittel-Forschung. Drug Research. (Editio Cantor Verlag, Postfach 1255, W-7960 Aulendorf, Fed. Rep. Ger.) V.1- 1951- Volume(issue)/page/year: 26,1581,1976
LD50 - Lethal dose, 50 percent kill	Subcutaneous	Rodent - rat	>2 gm/kg	Details of toxic effects not reported other than lethal dose value	USXXAM United States Patent Document. (U.S. Patent Office, Box 9, Washington, DC 20231) Volume(issue)/page/year: #4882359
LD50 - Lethal dose, 50 percent kill	Intravenous	Rodent - rat	80500 ug/kg	Details of toxic effects not reported other than lethal dose value	IYKEDH Iyakuhi Kenkyu. Study of Medical Supplies. (Nippon Koteisho Kyokai, 12-15, 2-chome, Shibuya, Shibuya-ku, Tokyo 150, Japan) V.1- 1970- Volume(issue)/page/year: 18,922,1987
LD50 - Lethal dose, 50 percent kill	Unreported	Rodent - rat	7 gm/kg	Details of toxic effects not reported other than lethal dose value	34ZIAG "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969 Volume(issue)/page/year: -,408,1969
LD50 - Lethal dose, 50 percent kill	Oral	Rodent - mouse	5130 mg/kg	Details of toxic effects not reported other than lethal dose value	EPASR* United States Environmental Protection Agency, Office of Pesticides and Toxic Substances. (U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC 20460) History unknown. Volume(issue)/page/year: 8EHQ-1087-0695

LD50 - Lethal dose, 50 percent kill	Intraperitoneal	Rodent - mouse	3050 mg/kg	Details of toxic effects not reported other than lethal dose value	EPASR* United States Environmental Protection Agency, Office of Pesticides and Toxic Substances. (U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC 20460) History unknown. Volume(issue)/page/year: 8EHQ-1087-0695
LD50 - Lethal dose, 50 percent kill	Intravenous	Rodent - mouse	54500 ug/kg	Details of toxic effects not reported other than lethal dose value	IYKEDH Iyakuhin Kenkyu. Study of Medical Supplies. (Nippon Koteisho Kyokai, 12-15, 2-chome, Shibuya, Shibuya-ku, Tokyo 150, Japan) V.1- 1970- Volume(issue)/page/year: 18,922,1987
LD50 - Lethal dose, 50 percent kill	Intravenous	Mammal - dog	63300 ug/kg	Details of toxic effects not reported other than lethal dose value	IYKEDH Iyakuhin Kenkyu. Study of Medical Supplies. (Nippon Koteisho Kyokai, 12-15, 2-chome, Shibuya, Shibuya-ku, Tokyo 150, Japan) V.1- 1970- Volume(issue)/page/year: 18,922,1987
LD50 - Lethal dose, 50 percent kill	Administration onto the skin	Rodent - rabbit	8 gm/kg	Details of toxic effects not reported other than lethal dose value	NPIRI* Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. (National Assoc. of Printing Ink Research Institute, Francis McDonald Sinclair Memorial Laboratory, Lehigh Univ., Bethlehem, PA 18015) Volume(issue)/page/year: 1,84,1974
TDLo - Lowest published toxic dose	Oral	Rodent - rat	750 mg/kg	Behavioral - food intake (animal)	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 40,1705,2002

OTHER MULTIPLE DOSE TOXICITY DATA

Type of Test	Route of Exposure or Administration	Species/Test System	Dose Data	Toxic Effects	Reference
TDLo - Lowest published toxic dose	Oral	Rodent - rat	655 gm/kg/2Y (intermittent)	Kidney/Ureter/Bladder - other changes Nutritional and Gross Metabolic - weight loss or decreased weight gain Related to Chronic Data - death	TOXID9 Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH 44311) V.1- 1981- Volume(issue)/page/year: 48,344,1999
TDLo - Lowest published toxic dose	Oral	Rodent - rat	30240 mg/kg/28D (continuous)	Behavioral - food intake (animal) Nutritional and Gross Metabolic - weight loss or decreased	TOXID9 Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH 44311) V.1- 1981-

				weight gain	Volume(issue)/page/year: 15,83,1995
TDLo - Lowest published toxic dose	Oral	Rodent - rat	33750 mg/kg/90D (intermittent)	Behavioral - muscle weakness	TOXID9 Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH 44311) V.1- 1981- Volume(issue)/page/year: 30,301,1996
TCLo - Lowest published toxic concentration	Inhalation	Rodent - rat	400 mg/m ³ /6H/4W (intermittent)	Lungs, Thorax, or Respiration - acute pulmonary edema Blood - changes in leukocyte (WBC) count Related to Chronic Data - death	FAATDF Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-40, 1981-97. For publisher information, see TOSCF2 Volume(issue)/page/year: 9,222,1987
TCLo - Lowest published toxic concentration	Inhalation	Rodent - rat	100 ppm/6H/2Y (intermittent)	Kidney/Ureter/Bladder - other changes in urine composition	FAATDF Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-40, 1981-97. For publisher information, see TOSCF2 Volume(issue)/page/year: 9,222,1987
TCLo - Lowest published toxic concentration	Inhalation	Rodent - rat	423 mg/m ³ /6H/4W (intermittent)	Behavioral - somnolence (general depressed activity) Lungs, Thorax, or Respiration - dyspnea	NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: OTS0534849
TCLo - Lowest published toxic concentration	Inhalation	Rodent - rat	800 ppm/6H/6W (intermittent)	Kidney/Ureter/Bladder - other changes in urine composition	NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: OTS0532511
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	33600 mg/kg/28D (continuous)	Kidney/Ureter/Bladder - changes in tubules (including acute renal failure, acute tubular	TOXID9 Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH

				necrosis) Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol) Related to Chronic Data - death	44311) V.1- 1981- Volume(issue)/page/year: 15,83,1995
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	10800 mg/kg/90D (continuous)	Endocrine - changes in spleen weight	NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: OTS0528073
TDLo - Lowest published toxic dose	Administration onto the skin	Rodent - rabbit	32 mL/kg/20D (intermittent)	Related to Chronic Data - death	NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: OTS0528073
TDLo - Lowest published toxic dose	Intramuscular	Rodent - rat	7500 mg/kg/15D (continuous)	Behavioral - food intake (animal) Nutritional and Gross Metabolic - weight loss or decreased weight gain	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 40,1705,2002
TDLo - Lowest published toxic dose	Oral	Rodent - rat	2 gm/kg/4D (intermittent)	Behavioral - food intake (animal) Nutritional and Gross Metabolic - weight loss or decreased weight gain	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 40,1705,2002
TCLo - Lowest published toxic concentration	Inhalation	Rodent - rat	60 ppm/6H/8D (intermittent)	Nutritional and Gross Metabolic - weight loss or decreased weight gain	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 41,583,2003
TCLo - Lowest published	Inhalation	Rodent - rat	120 ppm/6H/16D (intermittent)	Behavioral - food intake (animal)	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc.,

toxic concentration

Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 41,583,2003

TDL _o - Lowest published toxic dose	Oral	Rodent - mouse	630720 mg/kg/2Y (continuous)	Liver - tumors	TOXID9 Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH 44311) V.1- 1981- Volume(issue)/page/year: 60,286,2001
TDL _o - Lowest published toxic dose	Oral	Rodent - mouse	12096 mg/kg/2W (continuous)	Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.) Biochemical - Effect on specific coenzyme - CoA	TOXID9 Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH 44311) V.1- 1981- Volume(issue)/page/year: 60,286,2001
TDL _o - Lowest published toxic dose	Oral	Rodent - mouse	6048 mg/kg/1W (continuous)	Liver - other changes	TOXID9 Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH 44311) V.1- 1981- Volume(issue)/page/year: 60,286,2001

TUMORIGENIC DATA

Type of Test	Route of Exposure or Administration	Species/Test System	Dose Data	Toxic Effects	Reference
TDL _o - Lowest published toxic dose	Oral	Rodent - mouse	784 gm/kg/78W (continuous)	Tumorigenic - carcinogenic by RTECS criteria Liver - tumors	NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: OTS0559204-1

REPRODUCTIVE DATA

Type of Test	Route of Exposure or Administration	Species/Test System	Dose Data	Sex/Duration	Toxic Effects	Reference
TDL _o - Lowest published toxic dose	Oral	Rodent - rat	9700 mg/kg	female 6-15 day(s) after conception	Reproductive - Effects on Embryo or Fetus - fetal	EPASR* United States Environmental Protection Agency, Office of Pesticides and

					death	Toxic Substances. (U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC 20460) History unknown.
					Reproductive - Specific Developmental Abnormalities - other developmental abnormalities	Volume(issue)/page/year: 8EHQ-1087-0695
TCLo - Lowest published toxic concentration	Inhalation	Rodent - rat	150 ppm/6H	female 7-20 day(s) after conception	Reproductive - Effects on Newborn - growth statistics (e.g.%, reduced weight gain)	NETEEC Neurotoxicology and Teratology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.9- 1987-
					Reproductive - Effects on Newborn - delayed effects	Volume(issue)/page/year: 16,241,1994
TDLo - Lowest published toxic dose	Inhalation	Rodent - rat	116 ppm/6H	multigenerations	Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus)	DCTODJ Drug and Chemical Toxicology. (Marcel Dekker, 270 Madison Ave., New York, NY 10016) V.1-1977/78- Volume(issue)/page/year: 18,271,1995
TDLo - Lowest published toxic dose	Administration onto the skin	Rodent - rat	7500 mg/kg	female 6-15 day(s) after conception	Reproductive - Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)	FAATDF Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-40, 1981-97. For publisher information, see TOSCF2 Volume(issue)/page/year: 2,73,1982
					Reproductive - Fertility - litter size (e.g. # fetuses per litter; measured before birth)	
					Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus)	
TDLo - Lowest	Administration onto the skin	Rodent - rat	7500 mg/kg	female 6-15 day(s) after	Reproductive - Maternal	FAATDF Fundamental and Applied Toxicology.

published toxic dose			conception	Effects - other effects Reproductive - Specific Developmental Abnormalities - musculoskeletal system	(Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-40, 1981-97. For publisher information, see TOSCF2 Volume(issue)/page/year: 2,73,1982	
TDLo - Lowest published toxic dose	Administration onto the skin	Rodent - rat	7500 mg/kg	female 6-15 day(s) after conception	Reproductive - Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus) Reproductive - Effects on Embryo or Fetus - fetal death	NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: OTS0555033
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - rat	166 mg/kg	female 9 day(s) after conception	Reproductive - Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Reproductive - Specific Developmental Abnormalities - Central Nervous System Reproductive - Specific Developmental Abnormalities - musculoskeletal system	BIRUAA Biologische Rundschau. (VEB Gustav Fischer Verlag, Postfach 176, Jena DDR-6900, Ger. Dem. Rep.) V.1- 1963- Volume(issue)/page/year: 14,38,1976

TDL _o - Lowest published toxic dose	Oral	Rodent - mouse	12825 mg/kg	female 11-15 day(s) after conception	Reproductive - Fertility - post- implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus) Reproductive - Specific Developmental Abnormalities - craniofacial (including nose and tongue)	EPASR* United States Environmental Protection Agency, Office of Pesticides and Toxic Substances. (U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC 20460) History unknown. Volume(issue)/page/year: 8EHQ-1087-0695
TDL _o - Lowest published toxic dose	Intraperitoneal	Rodent - mouse	7625 mg/kg	female 11-15 day(s) after conception	Reproductive - Fertility - post- implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus) Reproductive - Specific Developmental Abnormalities - craniofacial (including nose and tongue)	EPASR* United States Environmental Protection Agency, Office of Pesticides and Toxic Substances. (U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC 20460) History unknown. Volume(issue)/page/year: 8EHQ-1087-0695
TDL _o - Lowest published toxic dose	Oral	Rodent - rat	7.5 gm/kg	female 6-20 day(s) after conception	Reproductive - Effects on Embryo or Fetus - fetotoxicity	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford,

					(except death, e.g., stunted fetus) Reproductive - Specific Developmental Abnormalities - musculoskeletal system	NY 10523) V.20- 1982- Volume(issue)/page/year: 40,1705,2002
TDL _o - Lowest published toxic dose	Oral	Rodent - rat	11.25 gm/kg	female 6-20 day(s) after conception	Reproductive - Specific Developmental Abnormalities - craniofacial (including nose and tongue)	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 40,1705,2002
TDL _o - Lowest published toxic dose	Oral	Rodent - rat	7500 mg/kg	female 6-20 day(s) after conception	Reproductive - Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Reproductive - Specific Developmental Abnormalities - musculoskeletal system	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 40,1705,2002
TDL _o - Lowest published toxic dose	Oral	Rodent - rat	3750 mg/kg	female 6-20 day(s) after conception	Reproductive - Specific Developmental Abnormalities - other developmental abnormalities	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 40,1705,2002
TDL _o - Lowest published toxic dose	Oral	Rodent - rat	84000 mg/kg	male 12 week(s) pre-mating	Reproductive - Paternal Effects - testes, epididymis, sperm duct Reproductive - Fertility - male fertility index (e.g. # males impregnating females per #	REPTED Reproductive Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.1- 1987- Volume(issue)/page/year: 20,453,2005

males exposed
to fertile
nonpregnant
females)

MUTATION DATA

Type of Test	Route of Exposure or Administration	Species/Test System	Dose Data	Reference
Sex chromosome loss and nondisjunction		Yeast - Saccharomyces cerevisiae	154 mmol/L	EMMUEG Environmental and Molecular Mutagenesis. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987- Volume(issue)/page/year: 11,31,1988

REVIEWS

TOXICOLOGY ENTOX* Encyclopedia of Toxicology: Reference Book, Elsevier, 2005

REVIEW Volume(issue)/page/year: -,252,2005

TOXICOLOGY TOLED5 Toxicology Letters. (Elsevier Science Pub. B.V., POB 211, 1000 AE

REVIEW Amsterdam, Netherlands) V.1- 1977- Volume(issue)/page/year: 199,203,2010

TOXICOLOGY FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House,

REVIEW Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 109,1,2017

OCCUPATIONAL EXPOSURE LIMITS

OEL-AUSTRALIA: TWA 25 ppm (103 mg/m³), STEL 75 ppm (309 mg/m³), JUL2008

OEL-AUSTRIA: MAK-TMW 20 ppm (80 mg/m³);KZW 80 ppm (320 mg/m³), skin, 2007

OEL-DENMARK: TWA 5 ppm (20 mg/m³), MAY2011

OEL-FINLAND: TWA 10 ppm (40 mg/m³), STEL 20 ppm (80 mg/m³), skin, NOV2011

OEL-GERMANY: MAK 20 ppm (82 mg/m³), 2011

OEL-GERMANY: MAK 20 ppm (82 mg/m³), skin, 2011

OEL-ICELAND: TWA 50 ppm (200 mg/m³), NOV2011

OEL-JAPAN: OEL 1 ppm (4 mg/m³), skin, MAY2012

OEL-THE NETHERLANDS: MAC-TGG 80 mg/m³, 2003

OEL-NEW ZEALAND: TWA 25 ppm (103 mg/m³); STEL 75 ppm (309 mg/m³), skin, JAN2002

OEL-NORWAY: TWA 50 ppm (200 mg/m³), JAN1999

OEL-PERU: TWA 25 ppm (101 mg/m³); STEL 75 ppm (304 mg/m³), JUL2005

OEL-RUSSIA: STEL 100 mg/m³, JUN2003

OEL-SWEDEN: TWA 50 ppm (200 mg/m³);STEL 75 ppm (300 mg/m³), JUN2005

OEL-SWITZERLAND: MAK-W 20 ppm (80 mg/m³), KZG-W 40 ppm (160 mg/m³), skin, JAN2011

NIOSH STANDARDS DEVELOPMENT AND SURVEILLANCE DATA

NIOSH Occupational Exposure Survey Data

NOHS - National Occupational Hazard Survey (1974)

Hazard code: M1569

No. of industries: 30

No. of facilities: 2458 (estimated)

No. of occupations: 43

No. of employees: 25255 (estimated)

NOES - National Occupational Exposure Survey (1983)

Hazard code: M1569

No. of industries: 63

No. of facilities: 3902 (estimated)

No. of occupations: 73

No. of employees: 85169 (estimated)

No. of female employees: 23478 (estimated)

STATUS IN U.S.

EPA TSCA Section 8(b) CHEMICAL INVENTORY

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

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001

END OF RECORD

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