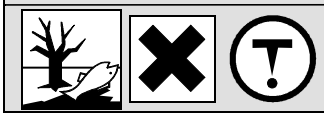
TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**Environmental hazard.** **Harmful compound, minimize exposure.** **CARCINOGEN. MINIMIZE EXPOSURE.** **POSSIBLE MUTAGEN. MINIMIZE EXPOSURE.**	

Section I. Chemical Product and Company Identification

Chemical Name **Methoxychlor**

Catalog Number	M1736
Synonym	1,1-Bis(4-methoxyphenyl)-2,2,2-trichloroethane; Dimethoxydiphenyltrichloroethane; DMDT
Chemical Formula	$C_{16}H_{15}Cl_3O_2$
CAS Number	72-43-5

Supplier
TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

In case of Emergency Call
Chemtrec®
(800) 424-9300 (U.S.)
(703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Methoxychlor	72-43-5	Min. 95.0 (GC)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.	Rat LD_{50} (oral) 1855 mg/kg Mouse LD_{50} (oral) 510 mg/kg Rabbit LD_{50} (dermal) >6 gm/kg

Section III. Hazards Identification

Acute Health Effects

Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Chronic Health Effects

CARCINOGENIC EFFECTS : Carcinogenic by RTECS criteria,
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Tumorigenic Effects.
Rat TDLo Oral 18200 mg/kg/2 years continuous
TOXIC Effects:
Tumorigenic - Carcinogenic by RTECS criteria
Tumorigenic Effects - Prostate tumors
Rat TDLo Oral 73 gm/kg/2 years continuous
TOXIC Effects:
Tumorigenic - Carcinogenic by RTECS criteria
Mouse TDLo Oral 56700 mg/kg/90 weeks continuous
TOXIC Effects:
Tumorigenic - Carcinogenic by RTECS criteria
Lung, Thorax, or Respiration - Tumors
Tumorigenic Effects - Testicular tumors
DEVELOPMENTAL TOXICITY: Reproductive effects.
Rat TDLo Oral 216 mg/kg, female 15-22 days of pregnancy and 10 days after birth
TOXC Effects:
Specific Developmental Abnormalities - Endocrine system
Specific Developmental Abnormalities - Urogenital system
Effects on Newborn - Delayed effects
Rat TDLo Oral 10625 mg/kg, female 42 day prior to mating - 21 days after birth
TOXIC Effects:
Maternal Effects - Uterus, cervix, vagina
Effects on Fertility - Mating performance
Effects on Fertility - Female fertility index
Rat TDLo Oral 1400 mg/kg, male 7 days prior to mating
TOXIC Effects:
Paternal Effects - Testes, epididymis, sperm duct
Paternal Effects - Prostate, seminal vessicle, Cowper's gland accessory glands
Paternal Effects - Other effects on male

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Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO_2), halogenated compounds. WARNING: Highly toxic HCl gas is produced during combustion.		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Environmentally hazardous material. Harmful material. Carcinogenic material. Possibly mutagenic material. Use a shovel to put the material into a convenient waste disposal container. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	ENVIRONMENTALLY HAZARDOUS. HARMFUL. CARCINOGEN. POSSIBLE MUTAGEN. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe dust.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent. 
Exposure Limits	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Solid. (Pale yellowish red crystal.)	Solubility	Very soluble in Ether, Benzene. Soluble in Alcohol, Toluene, Chloroform, Carbon tetrachloride. Insoluble in water.
Specific Gravity	Not available.		
Molecular Weight	345.65	Partition Coefficient	Log P_{ow}: 4.65 - 5.08
Boiling Point	Not available.	Vapor Pressure	Not applicable.
Melting Point	87°C (188.6°F)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

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Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents.

Section XI. Toxicological Information

RTECS Number	KJ3675000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD_{50} (oral) 1855 mg/kg Mouse LD_{50} (oral) 510 mg/kg Rabbit LD_{50} (dermal) >6 gm/kg
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Carcinogenic by RTECS criteria, **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Tumorigenic Effects. Rat TDLo Oral 18200 mg/kg/2 years continuous TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Tumorigenic Effects - Prostate tumors Rat TDLo Oral 73 gm/kg/2 years continuous TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Mouse TDLo Oral 56700 mg/kg/90 weeks continuous TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Lung, Thorax, or Respiration - Tumors Tumorigenic Effects - Testicular tumors **DEVELOPMENTAL TOXICITY**: Reproductive effects. Rat TDLo Oral 216 mg/kg, female 15-22 days of pregnancy and 10 days after birth TOXC Effects: Specific Developmental Abnormalities - Endocrine system Specific Developmental Abnormalities - Urogenital system Effects on Newborn - Delayed effects Rat TDLo Oral 10625 mg/kg, female 42 day prior to mating - 21 days after birth TOXIC Effects: Maternal Effects - Uterus, cervix, vagina Effects on Fertility - Mating performance Effects on Fertility - Female fertility index Rat TDLo Oral 1400 mg/kg, male 7 days prior to mating TOXIC Effects: Paternal Effects - Testes, epididymis, sperm duct Paternal Effects - Prostate, seminal vessicle, Cowper's gland accessory glands Paternal Effects - Other effects on male
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Methoxychlor's production and use as an insecticide to control a wide range of insect pests (particularly chewing insects) in field crops, forage crops, in animal houses, dairies, and in household and industrial premises, and also in forestry will result in its direct release to the environment. If released to air, an estimated vapor pressure of 2.6X10-6 mm Hg at 25 deg C indicates methoxychlor will exist in both the vapor and particulate phases. Vapor-phase methoxychlor will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 7 hours. Particulate-phase methoxychlor will be removed from the atmosphere by wet and dry deposition. If released to soil, methoxychlor is expected to be immobile based on Koc values from 23,000 to 93,000. Volatilization from moist soil surfaces is not expected to be an important fate process based upon a Henry's Law constant of 2.03X10-7 atm-cu m/mole. This compound may photolyze on soil surfaces based on studies reporting the photolysis of dry methoxychlor films exposed to sunlight. Methoxychlor is resistant to biodegradation under aerobic conditions but biodegrades fairly readily in anaerobic environments. Half-lives of 1 week to 2 months were reported for methoxychlor in 4 anaerobic flooded soils while in aerobic upland soils, half-lives of greater than 3 months were reported. Methoxychlor was not degraded over a 100-day period in aerobic soil while 73% degradation was observed under anaerobic conditions for the same time period. If released into water, methoxychlor is expected to adsorb to suspended solids and sediment based upon its Koc range. Methoxychlor was biodegraded in sediment-water mixtures under aerobic (half-lives of 115 and 206 days) and anaerobic conditions (half-lives of <28 days).The major degradation products under both oxygen conditions were dechlorinated methoxychlor (DMDD) and mono- and di-hydroxy derivatives of methoxychlor and dechlorinated methoxychlor. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's Henry's Law constant. Hydrolysis is also not expected to be an important fate process. While photolysis half-lives of 4.5 months and 2.2 to 5.4 hours have been reported for methoxychlor in distilled water and in sterilized natural waters, respectively, this compound is expected to adsorb to sediment and particulate material in water and may be removed from the surface by this process. Measured BCF values of 138 and 8300 in sheepshead minnows and fathead minnows, respectively, suggest bioconcentration in aquatic organisms may be species specific and may be very high. Occupational exposure to methoxychlor may occur through inhalation and dermal contact with this compound at workplaces where methoxychlor is produced or used. Monitoring data indicate that the general population is exposed to methoxychlor via inhalation of ambient air, ingestion of contaminated food and drinking water, and dermal contact with this compound. Methoxychlor is most likely to be found in crop foods where it is used as an insecticide.

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Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification	DOT Class 9: Miscellaneous hazardous material
PIN Number	UN3077
Proper Shipping Name	Environmentally hazardous substances, solid, n.o.s.
Packing Group (PG)	III
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This product is **NOT** on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list: (i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec. (ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on an MSDS sheet.
WHMIS Classification (Canada)	CLASS D-2B: Material causing other toxic effects (TOXIC). On DSL
EINECS Number (EEC)	200-779-9
EEC Risk Statements	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R45- May cause cancer. R46- May cause heritable genetic damage. R47- May cause birth defects.
Japanese Regulatory Data	Not available.

Section XVI. Other Information

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Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.