



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.20

Section 1 - Product and Company Information

Product Name: Methoxychlor, approx. 95%
Product Number: M1501
Brand: Sigma Chemical

Company: Sigma-Aldrich
Street Address: 3050 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 800 325 5052

Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

Table with 5 columns: Substance Name, CAS #, SARA 313, EC no, Annex I Index Number. Row 1: METHOXYCHLOR, 72-43-5, Yes, 200-779-9

Formula: C16H15Cl3O2
Synonyms: Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-methoxy-, 2,2-Bis(p-anisyl)-1,1,1-trichloroethane, 1,1-Bis(p-methoxyphenyl)-2,2,2-trichloroethane, 2,2-Bis(p-methoxyphenyl)-1,1,1-trichloroethane, Dianisyltrichloroethane, 2,2-Di-p-anisyl-1,1,1-trichloroethane, Dimethoxy-DDT, p,p'-Dimethoxydiphenyltrichloroethane, 2,2-Di-(p-methoxyphenyl)-1,1,1-trichloroethane, Di(p-methoxyphenyl)-trichloromethyl methane, DMDT, p,p'-Dwumetoksydwufenylotrojchloroetan (Polish), ENT 1,716, Ethane, 2,2-bis(p-anisyl)-1,1,1-trichloro-, Hlgalmetox, Mariate, Methoxide, Methoxychlor (ACGIH:OSHA), p,p'-Methoxychlor, Methoxychlor 2 EC, Methoxy-DDT, Metoksychlor (Polish), Metox, Mezox K, Moxie, NCI-C00497, OMS 466, RCRA waste number U247, 1,1,1-Trichloro-2,2-bis(4-methoxy-phenyl)-aethan (German), 1,1,1-Trichloro-2,2-bis(p-anisyl)ethane, 1,1'-(2,2,2-Trichloroethylidene)bis(4-methoxybenzene), 1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane, 1,1,1-Trichloro-2,2-bis(4-methoxyphenyl)ethane, 2,2,2-Trichloro-1,1-bis(4-methoxyphenyl)ethane, 1,1,1-Trichloro-2,2-di(4-methoxyphenyl)ethane, 4,4-(2,2,2-Trichloroethylidene)dianisole

Section 3 - Hazards Identification

Emergency Overview

Harmful. Harmful by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. Possible mutagen. Reproductive hazard. Target organ(s): Nerves. Kidneys.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Immediate Treatment - Work Site

In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Eye Exposure

Assure adequate flushing of the eyes by separating the eyelids with fingers.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media Suitable

Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions.

Exposure Hazard(s)

Material: Harmful solid.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Avoid inhalation. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep tightly closed. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

Engineering Controls

Use only in a chemical fume hood. Safety shower and eye bath.

Personal Protective Equipment

Other

Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

General Hygiene Measures

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Exposure Limits

Country	Type	Value
Poland	NDS	10 MG/M3
Poland	NDSch	-
Poland	NDSP	-

Country	Source	Type	Value
USA	ACGIH	TWA	10 MG/M3
USA	MSHA Standard-air	TWA	10 MG/M3
USA	OSHA.	PEL	8H TWA 15 MG/M3, TOTAL DUST
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH		(0.07 MG/M3 LOQ)

Section 9 - Physical/Chemical Properties

Appearance

Molecular Weight: 345.66 AMU

pH	N/A
BP/BP Range	N/A
MP/MP Range	86 - 88 °C
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	N/A
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A

Flammability	N/A
Autoignition Temp	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability

Materials to Avoid
Strong oxidizing agents.

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide, Hydrogen chloride gas.

Section 11 - Toxicological Information

Route of Exposure

Multiple Routes
Harmful if swallowed, inhaled, or absorbed through skin. May cause irritation.

Target Organ(s) or System(s)

Central nervous system. Kidneys.

RTECS Number: KJ3675000

Toxicity Data

Oral - Human: 6430 mg/kg (LDL0)

Oral - Rat: 1855 mg/kg (LD50)
Remarks: Behavioral:Convulsions or effect on seizure threshold.
Behavioral:Excitement.
Behavioral:Ataxia.

Skin - Rat: > 6000 mg/kg (LD50)

Oral - Mouse: 510 mg/kg (LD50)
Remarks: Behavioral:Convulsions or effect on seizure threshold.
Behavioral:Excitement.
Behavioral:Ataxia.

Oral - Rabbit: > 6000 mg/kg (LD50)

Skin - Rabbit: > 6000 mg/kg (LD50)

Intraperitoneal - Hamster: 500 MG/KG (LD50)

Oral - Duck: > 2000 mg/kg (LD50)

Chronic Exposure - Carcinogen

Rat - Oral: 18200 MG/KG 2Y C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Tumorigenic Effects: Prostate tumors.

Mouse - Oral: 56700 MG/KG 90W C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Tumorigenic Effects: Testicular tumors.

Dog - Oral: 383 GM/KG 3Y C
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors.

Rat - Oral: 41 GM/KG 2Y C
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Multiple effects. Lungs, Thorax, or Respiration:Other changes.

Mouse - Oral: 62622 MG/KG 2Y C
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors.

Rat - Oral: 80 GM/KG 2Y C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Liver:Tumors. Tumorigenic Effects: Ovarian tumors.

Rat - Oral: 72800 MG/KG 2Y C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Liver:Tumors.

Rat - Oral: 87360 MG/KG 2Y C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Liver:Tumors.

Rat - Oral: 10920 MG/KG 1Y C
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Blood:Lymphomas including Hodgkin's disease.

Rat - Oral: 45500 MG/KG 1Y C
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Blood:Lymphomas including Hodgkin's disease.

IARC Carcinogen List

Rating
Group 3

NTP Carcinogen List

<u>Rating</u>	<u>Species</u>	<u>Route</u>
No evidence.	Mouse/rat	Feed

ACGIH Carcinogen List

Rating
A4

Chronic Exposure - Teratogen

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	2 GM/KG	Oral	(6-15D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.			
Mouse	3 GM/KG	Oral	(6-15D PREG)
Result: Effects on Embryo or Fetus: Fetal death.			

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation test</u>
Rat	150 UMOL/L	liver	DNA damage
Rat	28 GM/KG	Oral 10W	sperm
Mouse	10 MG/L (+S9)	lymphocyte	Mutation in microorganisms
Mouse	2 MG/L	fibroblast	Morphological transformation.
Mouse	6 MG/KG	Oral 50D	Cytogenetic analysis
Hamster	10 MG/L	Embryo	Morphological transformation.
Hamster	50 MG/KG	Intraperitoneal	Cytogenetic analysis

Chronic Exposure - Reproductive Hazard

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.			
Rat	66 GM/KG	Oral	(33D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands.			
Rat	2 GM/KG	Oral	(6-15D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).			
Rat	4250 MG/KG	Oral	(42D PRE-21D POST)
Result: Maternal Effects: Ovaries, fallopian tubes. Effects on Newborn: Physical. Effects on Newborn: Delayed effects.			
Rat	10625 MG/KG	Oral	(42D PRE-21D POST)
Result: Maternal Effects: Uterus, cervix, vagina. Effects on Fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles). Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).			
Rat	7 GM/KG	Unreported	(70D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).			
Rat	2100 MG/KG	Unreported	(21D PRE)
Result: Maternal Effects: Oogenesis.			
Rat	9100 MG/KG	Unreported	(70D MALE/21D PRE)
Result: Effects on Fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles).			
Mouse	1 GM/KG	Oral	(20D PREG)
Result: Maternal Effects: Ovaries, fallopian tubes.			
Mouse	900 MG/KG	Oral	(6-8D PREG)
Result: Maternal Effects: Uterus, cervix, vagina.			
Mouse	2 GM/KG	Oral	(6-15D PREG)
Result: Maternal Effects: Parturition.			
Mouse	800 MG/KG	Intraperitoneal	(1D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).			
Mouse	99 MG/KG	Subcutaneous	(5-7D PREG)
Result: Effects on Newborn: Biochemical and metabolic. Effects on Newborn: Behavioral.			
Rabbit	330 MG/KG	Oral	(6-27D PREG)
Result: Maternal Effects: Other effects. Specific Developmental Abnormalities: Musculoskeletal system.			

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations**Appropriate Method of Disposal of Substance or Preparation**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information**DOT**

Proper Shipping Name: Toxic solids, organic, n.o.s.
UN#: 2811
Class: 6.1
Packing Group: Packing Group III
Hazard Label: Toxic substances.
PIH: Not PIH

IATA

Proper Shipping Name: Toxic solid, organic, n.o.s.
IATA UN Number: 2811
Hazard Class: 6.1
Packing Group: III

Section 15 - Regulatory Information**EU Additional Classification**

Symbol of Danger: Xn

Indication of Danger

Harmful.

Risk Statements R: 20/21/22 40

Harmful by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect.

Safety Statements S: 7 23 36/37/39 45

Keep container tightly closed. Do not breathe fumes. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Classification and Label Text**Indication of Danger**

Harmful.

Risk Statements

Harmful by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect.

Safety Statements

Keep container tightly closed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Do not breathe fumes. Wear suitable protective clothing, gloves, and eye/face protection.

US Statements

Possible mutagen. Reproductive hazard. Target organ(s): Nerves. Kidneys.

United States Regulatory Information

SARA Listed: Yes

Notes: This product is subject to SARA section 313 reporting requirements.

Canada Regulatory Information**WHMIS Classification**

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.