Chemical Safety Data Sheet MSDS / SDS

Methoxychlor SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Methoxychlor

CAS: 72-43-5

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Specific target organ toxicity – single exposure, Category 2

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed
H371 May cause damage to organs
H400 Very toxic to aquatic life

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P308+P316 IF exposed or concerned: Get emergency medical help immediately.
P391 Collect spillage.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Methoxychlor
Common names and synonyms:	Methoxychlor
CAS number:	72-43-5
EC number:	200-779-9
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give one or two glasses of water to drink. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Toxicity is relatively low. Inhalation or ingestion causes generalized depression. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Observation. Persons exposed to high levels of organochlorine pesticides by any route should be observed for sensory disturbances, incoordination, speech slurring, mental aberrations, and involuntary motor activity that would warn of imminent convulsions. Solid

organochlorine insecticides

SECTION 5: Firefighting measures

Suitable extinguishing media

Water, foam, dry chemical, or carbon dioxide.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating and toxic hydrogen chloride gas may be formed in fire. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a POTW is acceptable only after review by the governing authority. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must meet Hazardous Material Criteria for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Separated from food and feedstuffs. Well closed. Keep in a well-ventilated room.Storage temperature: ambient

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 10 mg/m3, as TWA; A4 (not classifiable as a human carcinogen).MAK: (inhalable fraction): 1 mg/m3; peak limitation category: II(8); skin absorption (H); pregnancy risk group: B

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Methoxychlor is a white crystalline solid which is often dissolved in a liquid carrier such as diesel oil. It can cause illness by inhalation, skin absorption and/or ingestion. The primary hazard is the threat to the environment. Immediate steps should be taken to limit its spread to the environment. If dissolved in a liquid carrier, it can easily penetrate the soil and contaminate groundwater and nearby streams. It is used as a pesticide.
Colour:	Colorless crystals (technical, grey powder)
Odour:	Slight, fruity odor
Melting point/freezing point:	86-88°C(lit.)
Boiling point or initial boiling point and boiling range:	greater than or equal to 100°C.
Flammability:	Combustible Solid, but difficult to burn.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	less than 60 degrees°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	less than 1 mg/mL at 73° F (NTP, 1992)

Partition coefficient n-octanol/water:	log Kow = 5.08
Vapour pressure:	Very low (NTP, 1992)
Density and/or relative density:	1.4 g/cm3
Relative vapour density:	12 (NTP, 1992) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH considers methoxychlor to be a potential occupational carcinogen.
Decomposes on heating and on burning. This produces toxic and corrosive gases including hydrogen chloride (see ICSC 0163).
Reacts with oxidants. Attacks some plastics and rubber.

Chemical stability

Stable to UV light.

Possibility of hazardous reactions

The material is a combustible solid, but difficult to ignite.METHOXYCHLOR turns pink or tan on exposure to light. This chemical is incompatible with alkaline materials, especially in the presence of catalytically-active metals. It is slightly corrosive to iron and aluminum. It is decomposed by refluxing with sodium in isopropyl alcohol. It is also incompatible with strong oxidizers. It will attack some forms of plastics, rubber and coatings. (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

Contact with strong oxidizers may cause fires and explosions.

Hazardous decomposition products

When heated to decomp, it emits highly toxic fumes of /hydrogen chloride/ .

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 6000 mg/kg Technical material

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Classification of carcinogenicity: 1) evidence in humans: no data; 2) evidence in animals: insufficient. Overall summary evaluation of carcinogenic risk to humans is Group 3: The agent is not classifiable as to its carcinogenicity to humans. From table

Reproductive toxicity

No information is available on the reproductive or developmental effects of methoxychlor in humans. Methoxychlor and its metabolites possess estrogenic properties. Reproductive and developmental effects have been reported in animals orally exposed to methoxychlor. (4,6) Effects to the development of the female reproductive system, gross and histopathological changes in the male and female reproductive systems, effects on male and female reproductive function (i.e., decreased fertility in males and

females, decreased spermatogenesis, and interference with estrus cycling), and changes to hormone levels have been reported in orally exposed animals. (4) In rabbits orally exposed to methoxychlor, excessive loss of litters (abortions) was observed. (6) Skeletal effects were observed in the offspring of rats exposed to methoxychlor by gavage (experimentally placing the chemical in the stomach). (4,6) Long-term oral exposure to methoxychlor has been reported to increase fetotoxicity in animals, as well as to affect the reproductive development and reduce the fertility of offspring. (4,6)

STOT-single exposure

no data available

STOT-repeated exposure

Animal tests show that this substance possibly causes toxic effects upon human reproduction.

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying or when dispersed, especially if powdered.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: Lepomis macrochirus (Bluegill, weight 0.6 g); Conditions: freshwater, flow through, 18 deg C, pH 7.4, hardness 272 mg/L CaCO3; Concentration: 100 ug/L for 24 hr (95% confidence limit 62-162 ug/L) /98% purity, technical material

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea, age <24 hr); Conditions: freshwater, static; Concentration: 1800 ug/L for 48 hr (95% confidence interval: 1500-2100 ug/L); Effect: intoxication, immobilization /40% purity

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: First-order rate constants of 0.001 to 0.004 (half-life of 7 to 29 days), 0.002 to 0.003 (half-life of 9.6 to 14.4 days), 0.001 to 0.006 (half-life of 4.8 to 29 days), and 0.002 to 0.004 per hour (half-life of 7 to 14.4 days) were measured for methoxychlor added to 4 different freshwaters(1). In an aerobic die-away study using water from the Santa Rosa Sound, FL, methoxychlor had a half-life of >25 days(2). In an aerobic shake-flask river die-away test, methoxychlor was biodegraded in a mixed water/sediment

sample, rate not given(3). The degradation of methoxychlor in 2 sandy loam soils was dependent on water content; soils with 3% and 10% water content degraded methoxychlor to only trace amounts within 30 to 38 and 20 to 26 weeks, respectively(4). Methoxychlor applied to soil during a 2-year field study was fairly persistent; residues remaining after 1, 2, and 3 months made up 92, 38, and 27% of the original application(5). One year later, measurable concentrations of methoxychlor were still present in soil as well as products from the partial dechlorination of the parent compound(5). Second-order rate constants of 5.2X10-14 and 6.1X10-16 liters per organism-hr (half-lives of 111 and 9500 days, respectively, assuming a bacterial concentration of 5X10+9 organisms/L) were measured dependent on 15% and 90% sorption, respectively, to sediments in river die-away studies(6).

Bioaccumulative potential

Bioconcentration factors (BCF) for methoxychlor of 8300 in fathead minnow (Pimephales promelas)(1) and 138 in sheepshead minnow (Cyprinodon variegatus)(4) have been measured in continuous flow systems. According to a classification scheme(6), these BCF values suggest that bioconcentration in aquatic organisms is high to very high(SRC). However, as seen in the BCF from the sheepshead minnow study, some variation between species in the ability to metabolize this compound may exist(7-9). Bioconcentration factors (BCF) for methoxychlor of 12,000 in mussel(2), 5000-8570 in snail (Physa integra), 348-1130 in stonefly (Pteronarcys dorsata)(3) and 1500 in soft clams (Mya avenaria)(5) have also been measured in continuous flow systems.

Mobility in soil

Measured average sorption coefficient (Koc) values in various pond and river sediments are as follows: 23,000 in sand, 82,000 in coarse silt, 88,000 in medium silt, 93,000 in fine silt and 83,000 in clay(1). In another study, a K value of 620 was found in a water-sediment system(2). Another study determined a K value of 2009 in soil(3). According to a classification scheme(4), these Koc values suggest that methoxychlor is expected to be immobile in soil. Mass balances in pond, river and wet sand (25% moisture) systems spiked with methoxychlor indicate that 98.6, 97.0, and 92.1%, respectively, of all methoxychlor was retained in the sediment(5).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN2811 (For reference only, please check.)
IMDG: UN2811 (For reference only, please check.)
IATA: UN2811 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)
IMDG: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)
IATA: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)

Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Not Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Ingestion in large amounts may cause effects on the liver, kidneys and central nervous system.Temperature of decomposition is unknown in the literature.Depending on the degree of exposure, periodic medical examination is suggested.If the substance is

formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s).Carrier solvents used in commercial formulations may change physical and toxicological properties.See ICSC 0034.