ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Methidathion

Revision Date:2026-05-30 Revision Number:1

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

Product identifier

Product name	: Methidathion
CBnumber	: CB4160797
CAS	: 950-37-8
EINECS Number	: 213-449-4
Synonyms	: Methidathion,DMTP

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
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 2, Oral

Acute toxicity - Category 4, Dermal

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

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

Label elements

Pictogram(s)

□□□

Signal word Danger

Hazard statement(s)

H318 Causes serious eye damage

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P264 Wash skin thouroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 Wear respiratory protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P273 Avoid release to the environment.

Response

P301+P316 IF SWALLOWED: Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P317 Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

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

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: Methidathion
Synonyms	: Methidathion,DMTP
CAS	: 950-37-8
EC number	: 213-449-4
MF	: C6H11N2O4PS3
MW	: 302.33

SECTION 4: First aid measures

Description of first aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer immediately for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer immediately for medical attention. Wear protective gloves when administering first aid.

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

Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer immediately for medical attention.

Most important symptoms and effects, both acute and delayed

This material is poisonous to humans. Its toxic effects are by action on the nervous system. Human volunteers ingesting 0.11 mg/kg/day for 6 weeks had no clinical effects. (EPA, 1998)

Indication of any immediate medical attention and special treatment needed

Airway protection. Insure that a clear airway exists. Intubate the patients and aspirate the secretions with a large-bore suction device if necessary. Administer oxygen by mechanically assisted pulmonary ventilation if respiration is depressed. Improve tissue oxygenation as much as possible before administering atropine, so as to minimize the risk of ventricular fibrillation. In severe poisonings, it may be necessary to support pulmonary ventilation mechanically for several days. Organophosphate pesticides

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SECTION 5: Firefighting measures

Extinguishing media

Self contained breathing apparatus with a full facepiece operated in pressure demand, or other positive pressure mode /should be used in firefighting/. Parathion

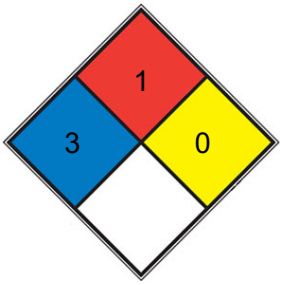
Specific Hazards Arising from the Chemical

Non-Specific -- Organophosphorus Pesticide, n.o.s.) Container may explode in heat of fire. Fire and runoff from fire control water may produce irritating or poisonous gases. Stable in neutral or weak acid solution. Hydrolyzed by alkali. (EPA, 1998)

Advice for firefighters

Use water spray. Use dry powder. Use carbon dioxide.

NFPA 704



HEALTH	3	Short exposure could cause serious temporary or moderate residual injury (e.g. liquid hydrogen, sulfuric acid, calcium hypochlorite, hexafluorosilicic acid)
FIRE	1	Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point

			at or above 93.3 °C (200 °F). (e.g. mineral oil, ammonia)
☐	REACT	0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,N2)
☐	SPEC. HAZ.		

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Ventilate area of spill or leak. collect for reclamation, or absorb in vermiculite, dry sand, earth, or a similar material. parathion

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

Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Well closed. Store in an area without drain or sewer access.Store in dry, well-ventilated, secure area out of reach of children and animals.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

Exposure 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

Eye/face protection

Wear face shield 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

Information on basic physicochemical properties

Physical state	solid
Colour	Colourless
Odour	Organophosphate odor
Melting point/freezing point	39-40°C
Boiling point or initial boiling point and boiling range	347.7°C at 760 mmHg
Flammability	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	164.1°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	DMSO (Slightly), Methanol (Slightly)
Partition coefficient n-octanol/water	log Kow = 2.20
Vapour pressure	2.5×10^{-4} Pa (20 °C)
Density and/or relative density	1.6 g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating. This produces toxic fumes.

Chemical stability

Relatively stable to hydrolysis in neutral, or slightly acidic media, less stable in more acidic (pH 1), or in alkaline media (pH 13, 50% loss in 30 min @ 25 deg C).

Possibility of hazardous reactions

Organophosphates, such as METHIDATHION, are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides. Partial oxidation by oxidizing agents may result in the release of toxic phosphorus oxides.

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /oxides of nitrogen, oxides of phosphorous and oxides of sulfur/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Guinea pig oral 25 mg/kg
- Inhalation: LC50 Rat inhalation 3.6 mg/L (4 hr) Technical
- 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

Cancer Classification: Group C Possible Human Carcinogen

Reproductive toxicity

no data available

STOT-single exposure

Cholinesterase inhibition. The substance may cause effects on the nervous system. This may result in convulsions and respiratory

depression. Exposure could cause death. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Cholinesterase inhibition. Cumulative effects are possible. See Acute Hazards/Symptoms.

Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: Lepomis macrochirus (Bluegill); Conditions: freshwater, static; Concentration: 2.2 ug/L for 96 hr (95% confidence interval: 0.9-5.1 ug/L) /95% purity
Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water Flea) 1st instar larvae; Conditions: freshwater, static; Concentration: 6.4 ug/L for 48 hr (95% confidence interval: 5.1-8.1 ug/L); Effect: intoxication, immobilization
Toxicity to algae: EC50; Species: Anabaena flosaquae (Blue-Green Algae); Conditions: freshwater, static, 24 deg C; Concentration: 67521 ug/L for 96 hr; Effect: decreased population biomass /96.1% purity technical product
Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: A half-life in aerobic soil of 11 days has been reported(1). Methidathion, at a concentration of 4 mg, containing chain labeled C14 was added to 400 cu cm of 4 different soils and incubated at 25 deg C(2). After 16 weeks, 7% C14, 8% C14, 1% C14, and 2% C14 remained in Puyallop sandy loam, Sultan silt loam, Chehalis clay loam, and organic soil, respectively(2). After 16 weeks, 49-60% methidathion remained in fumigated controls with <3% of the radioactivity was expired as CO2(2). An avg half-life of 12.42 days was measured for 1-50 ug/L methidathion added to filtered water collected during May-April, 1997 from the Limon River, between Mara and Paez, State of Zula, Argentina(3).

Bioaccumulative potential

Whole-body BCFs of 3.0, 2.2, 1.5, and 2.6 were measured using carp (Cyprino carpio L.) after 24, 72, 120, and 196 hr exposure to 2.6 ug/L methidathion, respectively(1). Average BCFs after 168 hr exposures were 6.4, 5.6, 4.6, 3.6, and 5.5 for guppy (female) (Lebistes reticulatus), guppy (male), killifish (Oryzias latipes), goldfish (Carassius aurapus), and cloud mountain fish (Tanichthys albonubes), respectively(2). According to a classification scheme(3), these BCF values suggest bioconcentration in aquatic organisms is low(SRC). Tests using the Mediterranean mussel, Mytillus galloprovincialis, resulted in a BCF value of 193(4).

Mobility in soil

Experimental Koc values of 34(1) and 761(2) in soil have been reported. According to a classification scheme(3), these Koc values suggest that methidathion is expected to have very high to low mobility in soil(SRC). Experimental Koc values of 7 and 56 were determined in 2 different pond sediments at pH 5.9 and 6.5, respectively(4). Methidathion was shown to have no to moderate leaching potential using agricultural soils characterized by high organic content from the Canary Island of Tenerife(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: UN2783 (For reference only, please check.)

IMDG: UN2783 (For reference only, please check.)

IATA: UN2783 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC (For reference only, please check.)

IMDG: ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC (For reference only, please check.)

IATA: ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC (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

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

PICCS

Not Listed.

Vietnam National Chemical Inventory

Listed.

IECSC

Not 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

Carrier solvents used in commercial formulations may change physical and toxicological properties.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.Do NOT take working clothes home.