

Methomyl 98%TC

Company Information

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SECTION 1: Identification

1.1GHS Product identifier

Product name Methomyl

1.2Other means of identification

Product number -

Other names IN 1179; methyl (1E)-N-[(methylcarbamoyl)oxy]ethanimidothioate; LANNATE

1.3Recommended use of the chemical and restrictions on use

Identified uses Insecticide

Uses advised against no data available

SECTION 2: Hazard identification

2.1Classification of the substance or mixture

Acute toxicity - Category 2, Oral

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

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

2.2GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H300 Fatal if swallowed

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

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

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.
	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.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Methomyl	Methomyl	16752-77-5	240-815-0	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Refer for medical attention. See Notes.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

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

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

4.2 Most important symptoms/effects, acute and delayed

Methomyl has high oral toxicity, moderate inhalation toxicity and low skin toxicity. The probable oral lethal dose for humans is between 7 drops and 1 teaspoon for a 150 pound adult. Death is due to respiratory arrest. (EPA, 1998)

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

Basic treatment: Establish a patent airway. Suction if necessary. Aggressive airway control may be needed. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary. Monitor for shock and treat if necessary. Anticipate seizures and treat if necessary. For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport. Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal. Carbamates and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Non-Specific -- Carbamate Pesticide, Solid) Wear self-contained breathing apparatus. (Non-Specific -- Carbamate Pesticide, Solid) Use agent suitable for type of surrounding fire. Use water in flooding quantities as a fog. Use alcohol foam, carbon dioxide, or dry chemical. (EPA, 1998)

5.2 Specific hazards arising from the chemical

When heated to decomposition, it emits very toxic fumes of nitrogen oxides and sulfur oxides. Do not subject liquid formulations to temperatures below 32F. (EPA, 1998)

5.3 Special protective actions for fire-fighters

Use water spray, foam, powder, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

A system for removing pesticides from the wash water produced by pesticide applicators as they clean their equipment has been developed. The first step is the flocculation/coagulation and sedimentation of the pesticide-contaminated wash water. The supernatant from the first step is then passed through activated carbon columns. Pesticides

SECTION 7: Handling and storage

7.1 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.

7.2 Conditions for safe storage, including any incompatibilities

Store in an area without drain or sewer access. Dry. Keep in a well-ventilated room. Separated from strong bases and food and feedstuffs. Keep /liq formulations/ away from heat, sparks, & open flame. Do not subject liquid to temperatures below 32 deg F.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 0.2 mg/m3, as TWA; (skin); A4 (not classifiable as a human carcinogen); BEI issued

Biological limit values

no data available

8.2 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.

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

Eye/face protection

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

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Methomyl is a white crystalline solid with slight sulfurous smell. Used as a nematocide, and an insecticide on vegetables, tobacco, cotton, alfalfa, soy beans, and corn. (EPA, 1998)
Colour	White crystalline solid
Odour	Slightly sulfurous
Melting point/freezing point	78°C
Boiling point or initial boiling point and boiling range	144°C
Flammability	Noncombustible Solid, but may be dissolved in flammable liquids.
Lower and upper explosion limit/flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	6 % at 77° F (NIOSH, 2016)
Partition coefficient n-octanol/water	log Kow= 0.60
Vapour pressure	5e-05 mm Hg at 77° F (EPA, 1998)
Density and/or relative density	1.17 g/cm ³
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on heating and on burning. This produces toxic and corrosive fumes including nitrogen oxides, sulfur oxides, hydrogen cyanide and methylisocyanate. Reacts with strong bases.

10.2 Chemical stability

Stable in neutral or slightly acidic soln.

10.3 Possibility of hazardous reactions

Liquid formulations flammable. METHOMYL is a carbamate ester. Carbamates are chemically similar to, but more reactive than amides. Like amides they form polymers such as polyurethane resins. Carbamates are incompatible with strong acids and bases, and especially incompatible with strong reducing agents such as hydrides. Flammable gaseous hydrogen is produced by the combination of active metals or nitrides with carbamates. Strongly oxidizing acids, peroxides, and hydroperoxides are incompatible with carbamates.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong bases.

10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /nitrogen oxides & sulfur oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat (male) oral 17 mg active ingredient/kg
- Inhalation: LD50 Rat (male) inhalation 0.45 mg/kg/4 hr
- Dermal: LD50 Rabbit (male) percutaneous >5000 mg ai/kg

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 E Evidence of Non-carcinogenicity for Humans

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes. The substance may cause effects on the nervous system. This may result in convulsions and respiratory depression. Cholinesterase inhibition. Exposure far above the OEL could cause death.

STOT-repeated exposure

The substance may have effects on the blood. This may result in anaemia.

Aspiration hazard

A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 *Pimephales promelas* (fathead minnow) 2.11 mg/l/96 at 24.1 deg C, 6.6 mg/l dissolved oxygen, 50.5 mg/l CaCO₃ water hardness, 38.4 mg/l CaCO₃ alkalinity, pH 7.4, tank vol 1.2 l, tank additions 12 vol/day, (95% confidence limit 1.84-2.42 mg/l), flow-through bioassay, purity, 99%
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

Methomyl seemed to be stable for about 16 days after application to an alluvial soil, but then degraded faster in the non-autoclaved alluvial soil as compared to autoclaved soil suggesting the importance of microbial degradation(1). Soil microorganisms were found to be the primary factor responsible for methomyl conversion in various soil types(2). Laboratory studies indicated that methyl radiolabeled methomyl was rapidly degraded in soil via microbial action with carbon dioxide as the principal end product(3). Microbial transformation of methomyl in two tobacco-growing soils was found to occur after an initial lag phase of 7-14 days, but occurred with virtually no lag phase in soils previously treated with methomyl(4). After the initial lag phase, half-lives of about 5-6 weeks were determined for methomyl in these soils(4). Comparison with tests using soils sterilized with sodium azide suggested that microbial transformation is likely to be the major factor in methomyl degradation in soil(4). The half-life of methomyl in three greenhouse soils was about 3-14 days(5). The half-life of methomyl was reported as 30 days in soil(6).

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated for methomyl(SRC), using a log Kow of 0.6(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

The measured Koc of methomyl was reported as 160(1). According to a classification scheme(2), this Koc value suggests that methomyl is expected to have moderate mobility in soil. Under field conditions and using laboratory studies, only slight movement of methomyl has been observed in soil(3,4).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 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

14.1 UN Number

ADR/RID: UN2991 (For reference only, please check.) IMDG: UN2991 (For reference only, please check.) IATA: UN2991 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: CARBAMATE PESTICIDE, LIQUID, IMDG: CARBAMATE PESTICIDE, LIQUID, TOXIC, IATA: CARBAMATE PESTICIDE, LIQUID, TOXIC, TOXIC, FLAMMABLE, flash point not less than 23 ° C CFLAMMABLE, flash point not less than 23 ° C (For reference only, please check.) (For reference only, please check.) (For reference only, please check.)

14.3 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.)

14.4 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.)

14.5 Environmental hazards

ADR/RID: Yes IMDG: Yes IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
Methomyl	Methomyl	16752-77-5	240-815-0
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)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019

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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

Methomyl is a mixture of (Z)- and (E)-isomers. If the pesticide is present in a formulation containing hydrocarbon solvents, vomiting should not be induced. Specific treatment is necessary in case of poisoning with this substance; the appropriate means

with instructions must be available. If the substance is formulated with solvents also consult the ICSCs of these materials. Carrier solvents used in commercial formulations may change physical and toxicological properties.

Disclaimer: 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. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.