

Malathion-d₆ (dimethyl-d₆)

Section 1. Chemical product and company identifications

Product code: D-5071

Chemical formula: C₁₀H₁₃D₆O₆PS₂

CAS: 1189877-72-2

CAS (unlabelled): 121-75-5

Synonyms: S-[1,2-Bis(ethoxycarbonyl)ethyl]-O,O-dimethylphosphorodithioate

Supplier / Manufacturer:

C/D/N Isotopes Inc.

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In case of emergency:

TOXYSKAN HOTLINE: 1-855-780-0599

Section 2. Hazards identifications

Physical state: Liquid

Warning: Toxic if swallowed. Fatal if inhaled.




Routes of entry: Inhalation, ingestion, skin and eyes

GHS (Globally Harmonized System of Classification and Labelling of Chemicals):

GHS Classification:

- Acute toxicity, Oral (Category 3)
- Acute toxicity, Inhalation (Category 1)
- Skin sensitisation (Category 1)
- Carcinogenicity (Category 1B)

GHS Label elements:

- Pictograms:   
- Signal word: Danger

Hazards statement:

- H301 Toxic if swallowed.
- H330 Fatal if inhaled.
- H317 May cause an allergic skin reaction.
- H350 May cause cancer.

Precautionary statement:

- P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302 + P350 IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P316 Get emergency medical help immediately.

Section 3. Composition and information on ingredients

<u>Name</u>	<u>CAS</u>	<u>Concentration %</u>
Malathion -d ₆	1189877-72-2	> 95

Section 4. First aid measures

Eye contact: Flush eyes with water as a precaution.

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Section 5. Firefighting measures

Flammability of the product: Combustible at high temperature.

Lower explosion limit: No data available.

Upper explosion limit: No data available.

Auto-ignition temperature: No data available.

Flash point: 163 °C (325 °F)

Products of combustion: Hazardous decomposition products formed under fire conditions: Carbon oxides, sulphur oxides, phosphorus oxides.

Firefighting media and instructions: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Section 6. Accidental release measures

Personal precautions: Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Environmental precautions: Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Section 7. Handling and storage

Handling: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Provide appropriate exhaust ventilation.

Storage: STORE REFRIGERATED. Adequate ventilation.

Section 8. Exposure Controls, Personal Protections

Engineering controls: Use mechanical exhaust or laboratory fumehood to avoid exposure.

Eyes: Safety glasses with side-shields conforming to NIOSH (US) or EN 166 (EU).

Respiratory: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US).

Hands: Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Skin/body: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Section 9. Physical and chemical properties (unlabelled)

Molecular weight: 330.36 g/mol

Physical status: Liquid

Color: Colorless to yellow

Odour: Heavy characteristic odor

Density: 1.230 g/cm³

Melting point: 3 °C (37 °F)

Boiling point: 156 - 157 °C (313 - 315 °F) at 1 hPa (0.75 mmHg)

Vapour pressure: No data available

Vapour density: No data available

Partition coefficient (octanol/water): log Pow: 2.36

Water solubility: 143 mg/L

Section 10. Stability and reactivity

Stability and reactivity: Stable under recommended storage conditions.

Incompatibility: Strong oxidizing agents.

Products of combustion: Hazardous decomposition products formed under fire conditions: Carbon oxides, sulphur oxides, phosphorus oxides.

Reactivity conditions: No data available.

Section 11. Toxicological information (unlabelled)

Toxicological data: Malathion

Information on ingredients:

<u>Name</u>	<u>CAS</u>	<u>LD₅₀</u>	<u>LC₅₀</u>
Malathion	121-75-5	Oral - Rat - 290 mg/kg Dermal - Rabbit - 4,100 mg/kg	Inhalation - Rat - 4 h - 43.8 mg/m ³

Potential acute effects

- **Eyes:** May cause eye irritation.
- **Skin:** May be harmful if absorbed through skin. May cause skin irritation. May cause an allergic skin reaction.
- **Inhalation:** Fatal if inhaled. May cause respiratory tract irritation.
- **Ingestion:** Toxic if swallowed.

Potential chronic effects

- **Carcinogenic effects:** This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. IARC: 2A - Group 2A: Probably carcinogenic to humans (Malathion). ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- **Mutagenic effects:** Genotoxicity in vitro - Human - leukocyte. Cytogenetic analysis. Genotoxicity in vitro - Human - lymphocyte. Cytogenetic analysis. Genotoxicity in vitro - Human - lymphocyte. DNA inhibition. Genotoxicity in vitro - Human - fibroblast. Other mutation test systems. Genotoxicity in vitro - Human - leukocyte. Sister chromatid exchange. Genotoxicity in vitro - Human - fibroblast. Sister chromatid exchange. Genotoxicity in vitro - Hamster - ovary. Cytogenetic analysis. Genotoxicity in vitro - Hamster - Lungs. Cytogenetic analysis. Genotoxicity in vitro - Hamster - Lungs. Sister chromatid exchange. Genotoxicity in vitro - Hamster - ovary. Sister chromatid exchange. Genotoxicity in vitro - Human - lymphocyte. Unscheduled DNA synthesis. Genotoxicity in vitro - Human - lymphocyte. Micronucleus test. Genotoxicity in vivo - Mouse - Oral. Cytogenetic analysis. Genotoxicity in vivo - Mouse - Skin. Cytogenetic analysis. Genotoxicity in vivo - Mouse - Intraperitoneal. Cytogenetic analysis. Genotoxicity in vivo - Hamster - Intraperitoneal. Cytogenetic analysis.
- **Teratogenic effects:** Developmental Toxicity - Rat - Oral. Specific Developmental Abnormalities: Urogenital system. Developmental Toxicity - Rabbit - Oral. Effects on Embryo or Fetus: Other effects to embryo.
- **Medical conditions aggravated by overexposure:** No data available.

Section 12. Ecological information

Ecological data:

<u>Name</u>	<u>Results</u>	<u>Species</u>	<u>Period</u>
Malathion	0.046 mg/l LC50	Lepomis macrochirus	96 h
	0.002 mg/l EC50	Daphnia magna	48 h
	4.06 mg/l EC50	Pseudokirchneriella subcapitata	72 h

Effects on environment: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Mobility: No data available.

Environmental precautions: No data available.

Persistence and degradability: No data available.

Bioaccumulative potential: Oryzias latipes - 168 h - 12.8 µg/l. Bioconcentration factor (BCF): 12.

Section 13. Disposal considerations

Waste disposal: Contact a licensed professional waste disposal service to dispose of this material.

Section 14. Transportation information

Classification DOT/IMDG/IATA label:

Shipping name: Organophosphorus pesticide, liquid, toxic (Malathion)

UN number: UN3018

Class: 6.1

Packaging group: I

Additional information: None

Section 15. Regulatory information

UNITED STATES: NFPA classification



Health: 4
Flammable: 1
Reactivity: 0
Special conditions: None

Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous

U.S. Federal regulations:

TSCA 8(b) inventory: Malathion

SARA 302/304/311/312 extremely hazardous substances: Not Listed

SARA 302/304 emergency planning and notification: Not Listed

SARA 302/304/311/312 hazardous chemicals: Not Listed

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard: Listed

CWA (Clean Water Act) 307: Not Listed

CWA (Clean Water Act) 311: Not Listed

CAA (Clean Air Act) 112 accidental release prevention: Not Listed

CAA (Clean Air Act) 112 regulated flammable substances: Not Listed

CAA (Clean Air Act) 112 regulated toxic substances: Not Listed

State regulations:

DEA List I Chemicals (Precursor Chemicals): Not Listed

DEA List II Chemicals (Essential Chemicals): Not Listed

Substances in Massachusetts: Listed

Dangerous substances in New Jersey: Listed

New York – Dangerous substances with acute effects: Not Listed

Dangerous substances in Pennsylvania – right to know: Listed

WHMIS (Canada):



D1A - Very toxic material causing immediate and serious toxic effects

D1B - Toxic material causing immediate and serious toxic effects



D2A - Very toxic material causing other toxic effects

D2B - Toxic material causing other toxic effects

Section 16. Additional information

References:

- ANSI Z400.1, MSDS Standard, 2001.
- Manufacturer's Material Safety Data Sheet.
- 29CFR Part1910.1200 OSHA MSDS Requirements.
- 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. -Canada
- Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
- Federal act on the controlled products
- Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2002.
- Toxicological repertory, HSC.
- Material safety data sheet from the components.

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Elaborated by: Toxyscan Inc., 1-866-780-0599

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