Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Methamidophos
Product Number: 33395
Brand: Fluka
Supplier: Sigma-Aldrich
3500 Spruce Street
SAIN TOUS MO 62103
USA
Telephone: +1 600-325-5330
Fax: +1 600-325-5052
Emergency Phone # (For both supplier and manufacturer): +1 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards: Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption
Target Organs: Central nervous system, Heart, Blood, Eyes
GHS Classification: Acute toxicity, Oral (Category 2), Acute toxicity, Inhalation (Category 2), Acute toxicity, Dermal (Category 2), Eye irritation (Category 2B), Acute aquatic toxicity (Category 1)
GHS Label elements, including precautionary statements: Signal word Danger

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: O,S-Dimethyl phosphorimidodithioate
Formula: C9H6N2O2PS
Molecular Weight: 141.13 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
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<tbody>
<tr>
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<tr>
<td>CAS-No.</td>
<td>10265-92-6</td>
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<tr>
<td>EC-No.</td>
<td>235-866-0</td>
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<td>015-069-00-4</td>
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4. FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability: Not flammable or combustible.
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters: Wear self-contained breathing apparatus for fire fighting if necessary.
Hazardous combustion products: Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Oxides of phosphorus
6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: -20 °C

6. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

8. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form: crystalline
Colour: colourless

Safety data
pH: no data available
Melting point/freezing point: 42 - 45 °C (108 - 113 °F)
Boiling point: no data available

Flash point: 212 °C (414 °F) - closed cup
Ignition temperature: no data available
Auto-ignition temperature: no data available
Lower explosion limit: no data available
Upper explosion limit: no data available
Vapour pressure: no data available
Density: 1.310 g/cm³
Water solubility: soluble
Partition coefficient: log Pow: -0.93
n-Octanol/water: no data available
Relative vapor density: no data available
Odour: no data available
Odour Threshold: no data available
Evaporation rate: no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Corroses metal, Copper

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Oxides of phosphorus

Other decomposition products: no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD₅₀
LD₅₀ Oral - rat: 7.5 mg/kg
Inhalation LC₅₀
LC₅₀ Inhalation - rat: 4 h - 162 mg/m³
Dermal LD₅₀
LD₅₀ Dermal - rabbit: 100 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit: No skin irritation

Serious eye damage/eye irritation
Eyes - rabbit: Mild eye irritation

Respiratory or skin sensitization
no data available
Germ cell mutagenicity
Genotoxicity in vitro - mouse - Other cell types
Cytogenetic analysis
Genotoxicity in vitro - mouse - Other cell types
Sister chromatid exchange
Genotoxicity in vivo - mouse - Oral
Micronucleus test
Genotoxicity in vivo - mouse - Skin
Micronucleus test
Genotoxicity in vivo - mouse - Intraperitoneal
Sister chromatid exchange
Genotoxicity in vivo - mouse - Intraperitoneal
Micronucleus test

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
AGCH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by AGCH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Reproductive toxicity - mouse - Oral
Paternal Effects: Spermatogenesis is the most likely described adverse effect. Male and female reproductive effects may also be seen.

Teratogenicity
Developmental Toxicity - rat - Oral
Effects: Effects on Embryo or Fetus: Teratogenicity (except death, e.g., stunted fetuses). Specific Developmental Abnormalities: Cleared at stage 20 (Somite formation), Specific Developmental Abnormalities: Eye, ear.

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available
Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation: May cause respiratory tract irritation.
Ingestion: May cause fatigue.
Skin: May cause eye irritation.
Eyes: May cause eye irritation.

Signs and Symptoms of Exposure
Cholinesterase inhibitors can cause heavy salivation and secretion in the lungs, lachrymation, blurred vision, involuntary defecation, diarrhea, tremor, ataxia, sweating, hypothermia, lowered heart rate, and/or a fall in blood pressure as a result of their action on cholinergic nerve sites. Nausea, Vomiting, Dizziness, Drowsiness, Confusion, Weakness, Muscle cramps/pain, Changes in pupil size, Fever, Seizures, Incoordination, Convulsions, Coma.

Synergistic effects
no data available

Additional Information
RTECS: TB9475000

12. ECOLOGICAL INFORMATION
Toxicity
- Toxicity to fish: LC50 - Oncorhynchus mykiss (rainbow trout) - 1.28 mg/l - 96h
- Toxicity to daphnia: EC50 - Daphnia magna (Water flea) - 0.27 mg/l - 48h
- Toxicity to algae: EC50 - Desmodesmus subspicatus (green algae) - > 178 mg/l - 96h

Persistence and degradability
no data available
Bioaccumulative potential
no data available
Mobility in soil
no data available
PBT and vPvB assessment
no data available
Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS
Product
Offer surplus and non-recoverable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with a scrubber.
Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION
DOT (US)
UN number: 2811 Class: 6.1 Packing group: II
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Methamidophos)
Reportable Quantity (RQ): Marine Pollutant: No
Poison Inhalation Hazard: No
IMDG
UN number: 2811 Class: 6.1 Packing group: II
EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Methamidophos)
Marine Pollutant: Marine pollutant
IATA
UN number: 2811 Class: 6.1 Packing group: II
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Methamidophos)

15. REGULATORY INFORMATION
OSHA Hazards
Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption
SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:
Methamidophos

CAS-No.: 10265-62-6
Revision Date: 1993-04-24
SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minima) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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