

## SAFETY DATA SHEET

Version 5.4  
Revision Date 03/07/2018  
Print Date 11/10/2018

**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Ethion

Product Number : 45477  
Brand : Sigma-Aldrich  
Index-No. : 015-047-00-2

CAS-No. : 563-12-2

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 2), H300  
Acute toxicity, Dermal (Category 2), H310  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

H300 + H310  
H410

Fatal if swallowed or in contact with skin.  
Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P262

Do not get in eyes, on skin, or on clothing.

P264

Wash skin thoroughly after handling.

P270

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

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing.

P301 + P310

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P302 + P350

IF ON SKIN: Gently wash with plenty of soap and water.

|      |  |
|------|--|
| P310 | Immediately call a POISON CENTER/doctor.                                   |
| P322 | Specific measures (see supplemental first aid instructions on this label). |
| P330 | Rinse mouth.   |
| P361 | Remove/Take off immediately all contaminated clothing.                     |
| P363 | Wash contaminated clothing before reuse.                                   |
| P391 | Collect spillage.  |
| P405 | Store locked up.   |
| P501 | Dispose of contents/ container to an approved waste disposal plant.        |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

|                  |   |
|------------------|---|
| Formula          | : C <sub>9</sub> H <sub>22</sub> O <sub>4</sub> P <sub>2</sub> S <sub>4</sub> |
| Molecular weight | : 384.48 g/mol  |
| CAS-No.          | : 563-12-2  |
| EC-No.           | : 209-242-3   |
| Index-No.        | : 015-047-00-2  |

#### Hazardous components

| Component     | Classification  | Concentration |
|---------------|---|---------------|
| <b>Ethion</b> |   |               |
|               | Acute Tox. 2; Aquatic Acute 1;<br>Aquatic Chronic 1; H300 +<br>H310, H410 | 90 - 100 %    |

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 4. FIRST AID MEASURES

#### 4.1 Description of 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

Flush eyes with water as a precaution.

##### If swallowed

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

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Special hazards arising from the substance or mixture

No data available

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

### 6.2 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.

### 6.3 Methods and materials for containment and cleaning up

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

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature 2 - 8 °C

Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

| Component | CAS-No.  | Value  | Control parameters     | Basis   |
|-----------|----------|--|------------------------|---|
| Ethion    | 563-12-2 | TWA  | 0.05 mg/m <sup>3</sup> | USA. ACGIH Threshold Limit Values (TLV)   |
|           | Remarks  | Cholinesterase inhibition<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section), see BEI® for Acetylcholinesterase Inhibiting Pesticide<br>Not classifiable as a human carcinogen<br>Danger of cutaneous absorption |                        |   |
|           |          | TWA  | 0.4 mg/m <sup>3</sup>  | USA. NIOSH Recommended Exposure Limits  |
|           |          | Potential for dermal absorption  |                        |   |
|           |          | PEL  | 0.4 mg/m <sup>3</sup>  | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|           |          | Skin   |                        |   |

### 8.2 Exposure controls

#### Appropriate engineering controls

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

## Personal protective equipment

### Eye/face 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 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.

### 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.

### Respiratory protection

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) or CEN (EU).

### Control of environmental exposure

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|   |   |
|---|---|
| a) Appearance                                   | Form: liquid                                      |
| b) Odour  | No data available                                 |
| c) Odour Threshold                              | No data available                                 |
| d) pH   | No data available                                 |
| e) Melting point/freezing point                 | No data available                                 |
| f) Initial boiling point and boiling range      | 164 - 165 °C (327 - 329 °F) at 0.4 hPa (0.3 mmHg) |
| g) Flash point                                  | No data available                                 |
| h) Evaporation rate                             | No data available                                 |
| i) Flammability (solid, gas)                    | No data available                                 |
| j) Upper/lower flammability or explosive limits | No data available                                 |
| k) Vapour pressure                              | No data available                                 |
| l) Vapour density                               | No data available                                 |
| m) Relative density                             | No data available                                 |
| n) Water solubility                             | insoluble   |
| o) Partition coefficient: n-octanol/water       | No data available                                 |
| p) Auto-ignition temperature                    | No data available                                 |
| q) Decomposition temperature                    | No data available                                 |
| r) Viscosity                                    | No data available                                 |
| s) Explosive properties                         | No data available                                 |
| t) Oxidizing properties                         | No data available                                 |

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Phosphorous oxides, Sulphur oxides

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides, Oxides of phosphorus

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 13 mg/kg

Remarks: (RTECS)

LC50 Inhalation - Rat - 864 mg/m3

LD50 Dermal - Rat - 62 mg/kg

Remarks: (RTECS)

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### 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.

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 on OSHA's list of regulated carcinogens.

#### Reproductive toxicity

No data available

No data available

#### Specific target organ toxicity - single exposure

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: TE4550000

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 0.18 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.06 mg/l - 48 h

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life.

Avoid release to the environment.

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**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable 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 an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 2810 Class: 6.1 Packing group: II  
Proper shipping name: Toxic, liquids, organic, n.o.s. (Ethion)  
Reportable Quantity (RQ): 10 lbs Marine pollutant: yes  
Poison Inhalation Hazard: No

**IMDG**

UN number: 2810 Class: 6.1 Packing group: II EMS-No: F-A, S-A  
Proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S. (Ethion)  
Marine pollutant: yes

**IATA**

UN number: 2810 Class: 6.1 Packing group: II  
Proper shipping name: Toxic liquid, organic, n.o.s. (Ethion)

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## 15. REGULATORY INFORMATION

### SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

|        | CAS-No.  | Revision Date |
|--------|----------|---------------|
| Ethion | 563-12-2 | 2007-03-01    |

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Massachusetts Right To Know Components

|        | CAS-No.  | Revision Date |
|--------|----------|---------------|
| Ethion | 563-12-2 | 2007-03-01    |

### Pennsylvania Right To Know Components

|        | CAS-No.  | Revision Date |
|--------|----------|---------------|
| Ethion | 563-12-2 | 2007-03-01    |

### New Jersey Right To Know Components

|        | CAS-No.  | Revision Date |
|--------|----------|---------------|
| Ethion | 563-12-2 | 2007-03-01    |

### 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.

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

|                 |   |
|-----------------|---|
| Acute Tox.      | Acute toxicity                              |
| Aquatic Acute   | Acute aquatic toxicity                      |
| Aquatic Chronic | Chronic aquatic toxicity                    |
| H300            | Fatal if swallowed.                         |
| H300 + H310     | Fatal if swallowed or in contact with skin. |
| H310            | Fatal in contact with skin.                 |

### HMIS Rating

|                        |   |
|------------------------|---|
| Health hazard:         | 3 |
| Chronic Health Hazard: | * |
| Flammability:          | 0 |
| Physical Hazard        | 0 |

### NFPA Rating

|                    |   |
|--------------------|---|
| Health hazard:     | 3 |
| Fire Hazard:       | 0 |
| Reactivity Hazard: | 0 |

### Further information

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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. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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