

## SAFETY DATA SHEET

Version 5.3  
Revision Date 06/04/2016  
Print Date 11/05/2018

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1. PRODUCT AND COMPANY IDENTIFICATION

## 1.1 Product identifiers

Product name : Sulfotep

Product Number : 45664  
Brand : Sigma-Aldrich  
Index-No. : 015-027-00-3

CAS-No. : 3689-24-5

## 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)

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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 1), H300  
Acute toxicity, Inhalation (Category 1), H330  
Acute toxicity, Dermal (Category 1), 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 + H330  
H410

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

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
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.  
P271 Use only outdoors or in a well-ventilated area.

|                    |                                                                                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------|
| P273               | Avoid release to the environment.                                                                                   |
| P280               | Wear protective gloves/ protective clothing.                                                                        |
| P284               | Wear respiratory protection.                                                                                        |
| P301 + P310 + P330 | IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.                                                 |
| P302 + P350 + P310 | IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician.       |
| P304 + P340 + P310 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. |
| P362               | Take off contaminated clothing and wash before reuse.                                                               |
| P391               | Collect spillage.                                                                                                   |
| P403 + P233        | Store in a well-ventilated place. Keep container tightly closed.                                                    |
| 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

Synonyms : O,O,O',O'-Tetraethyl dithiopyrophosphate

Formula :  $C_8H_{20}O_5P_2S_2$

Molecular weight : 322.32 g/mol

CAS-No. : 3689-24-5

EC-No. : 222-995-2

Index-No. : 015-027-00-3

#### Hazardous components

| Component       | Classification                                                             | Concentration |
|-----------------|----------------------------------------------------------------------------|---------------|
| <b>Sulfotep</b> |                                                                            |               |
|                 | Acute Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H300 + H310 + H330, H410 | <= 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

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## 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

Hydrolyses readily.

### 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                                   |
|-----------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------|
| Sulfotep  | 3689-24-5 | TWA                                                                                                                                                                                                                                                      | 0.100000 mg/m3     | 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                                                                                                                                                                                                                                                      | 0.1 mg/m3      | USA. ACGIH Threshold Limit Values (TLV)                                                 |
|  |  | 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                                                                                                                                                                                                                                                      | 0.200000 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|  |  | Skin designation                                                                                                                                                                                                                                         |                |                                                                                         |
|  |  | TWA                                                                                                                                                                                                                                                      | 0.2 mg/m3      | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|  |  | Skin designation                                                                                                                                                                                                                                         |                |                                                                                         |
|  |  | TWA                                                                                                                                                                                                                                                      | 0.2 mg/m3      | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                           |
|  |  | Skin notation                                                                                                                                                                                                                                            |                |                                                                                         |
|  |  | TWA                                                                                                                                                                                                                                                      | 0.200000 mg/m3 | USA. NIOSH Recommended Exposure Limits                                                  |
|  |  | Potential for dermal absorption                                                                                                                                                                                                                          |                |                                                                                         |
|  |  | TWA                                                                                                                                                                                                                                                      | 0.2 mg/m3      | USA. NIOSH Recommended Exposure Limits                                                  |
|  |  | Potential for dermal absorption                                                                                                                                                                                                                          |                |                                                                                         |
|  |  | PEL                                                                                                                                                                                                                                                      | 0.2 mg/m3      | 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.

## 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      | No data available |
| 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                             | No data available |
| 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 Corrosive to most metals in the presence of moisture, reacts slowly with water to form non-hazardous products, Strong oxidizing agents

### 10.6 Hazardous decomposition products

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 - 5 mg/kg

LC50 Inhalation - Rat - 4 h - 38 mg/m<sup>3</sup>

Remarks: Autonomic Nervous System:Other (direct) parasympathomimetic.

LD50 Dermal - Rabbit - 20 mg/kg

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 identified as a carcinogen or potential carcinogen by OSHA.

#### 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: XN4375000

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 at cholinergic nerve sites., Headache, Nausea, Vomiting, Dizziness, Drowsiness, Confusion., Weakness, Muscle cramps/spasms., Change in pupil size., Fever, Seizures., Incoordination.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 0.178 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.0025 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 with long lasting effects.

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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: I  
Proper shipping name: Toxic, liquids, organic, n.o.s. (Sulfotep)  
Reportable Quantity (RQ): 100 lbs  
Marine pollutant: yes  
Poison Inhalation Hazard: No

### IMDG

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

### IATA

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

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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 |
|----------|-----------|---------------|
| Sulfotep | 3689-24-5 | 2007-07-01    |

### 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.

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

|          | CAS-No.   | Revision Date |
|----------|-----------|---------------|
| Sulfotep | 3689-24-5 | 2007-07-01    |

### Pennsylvania Right To Know Components

|          | CAS-No.   | Revision Date |
|----------|-----------|---------------|
| Sulfotep | 3689-24-5 | 2007-07-01    |

## New Jersey Right To Know Components

Sulfotep

CAS-No.  
3689-24-5

Revision Date  
2007-07-01

## 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 + H330 | Fatal if swallowed, in contact with skin or if inhaled |
| H310               | Fatal in contact with skin.                            |

### HMIS Rating

|                        |   |
|------------------------|---|
| Health hazard:         | 4 |
| Chronic Health Hazard: | * |
| Flammability:          | 0 |
| Physical Hazard        | 0 |

### NFPA Rating

|                    |   |
|--------------------|---|
| Health hazard:     | 4 |
| Fire Hazard:       | 0 |
| Reactivity Hazard: | 0 |

### Further information

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### Preparation Information

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

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