

## Chemical Safety Data Sheet MSDS / SDS

## SULPROFOS

Revision Date:2025-02-01 Revision Number:1

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

**Product identifier**

Product name : SULPROFOS  
CBnumber : CB5129467  
CAS : 35400-43-2  
EINECS Number : 252-545-0  
Synonyms : Sulprofos,Bolstar

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

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## SECTION 2: Hazards identification

**Classification of the substance or mixture**

Acute toxicity - Category 3, Oral  
Acute toxicity - Category 3, Dermal  
Acute toxicity - Category 2, Inhalation  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

**Label elements****Pictogram(s)**

Signal word : Danger

**Hazard statement(s)**

H330 Fatal if inhaled  
H410 Very toxic to aquatic life with long lasting effects

**Precautionary statement(s)**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 Wear respiratory protection.

P310 Immediately call a POISON CENTER or doctor/physician.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

#### **Prevention**

P264 Wash ... thoroughly after handling.

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

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P284 [In case of inadequate ventilation] wear respiratory protection.

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.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P316 Get emergency medical help immediately.

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P320 Specific treatment is urgent (see ... on this label).

P391 Collect spillage.

#### **Storage**

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

#### **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.

#### **Other hazards**

no data available

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## SECTION 3: Composition/information on ingredients

#### **Substance**

Product name	: SULPROFOS
Synonyms	: Sulprofos,Bolstar
CAS	: 35400-43-2
EC number	: 252-545-0
MF	: C12H19O2PS3
MW	: 322.45

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## SECTION 4: First aid measures

### Description of first aid measures

#### If inhaled

Fresh air, rest. Refer immediately for medical attention.

#### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

#### 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

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

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

Exposure Routes: inhalation, ingestion Symptoms: Nausea, vomiting, abdominal cramps, diarrhea, salivation; headache, dizziness, lassitude (weakness, exhaustion); rhinorrhea (discharge of thin mucus), chest tightness; blurred vision, miosis; cardiac irregularities; muscle fasciculation; dyspnea (breathing difficulty) Target Organs: respiratory system, central nervous system, cardiovascular system, blood cholinesterase (NIOSH, 2016)

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

Airway protection. Insure that a clear airway exists. Intubate the patients and aspirate the secretions with a large-bore suction device if necessary. Administer oxygen by mechanically assisted pulmonary ventilation if respiration is depressed. Improve tissue oxygenation as much as possible before administering atropine, so as to minimize the risk of ventricular fibrillation. In severe poisonings, it may be necessary to support pulmonary ventilation mechanically for several days. Organophosphate pesticides

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## SECTION 5: Firefighting measures

### Extinguishing media

If material on fire or involved in fire: Use water in flooding quantities as fog. Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Organophosphorus pesticides, solid, toxic

### Specific Hazards Arising from the Chemical

Excerpt from ERG Guide 152 [Substances - Toxic (Combustible)]: Combustible material: may burn but does not ignite readily. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form. (ERG, 2016)

### Advice for firefighters

Use alcohol-resistant foam, powder, carbon dioxide.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the

environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

### **Environmental precautions**

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

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

Environmental considerations: Air spill: Apply water spray or mist to knock down vapors. Organophosphorus pesticides, liquid, flammable, toxic; Organophosphorus pesticides, liquid, toxic; Organophosphorus pesticides, solid, toxic

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## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

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.

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

Separated from food and feedstuffs. Keep in a well-ventilated room. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Well closed.

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## **SECTION 8: Exposure controls/personal protection**

### **Control parameters**

#### **Occupational Exposure limit values**

TLV: 0.1 mg/m<sup>3</sup>, as TWA; (skin); A4 (not classifiable as a human carcinogen); BEI issued

#### **Biological limit values**

no data available

### **Exposure controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### **Individual protection measures**

#### **Eye/face protection**

Wear face shield or eye protection in combination with breathing protection.

#### **Skin protection**

Protective gloves. Protective clothing.

#### **Respiratory protection**

Use ventilation, local exhaust or breathing protection.

#### **Thermal hazards**

no data available

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	Liquid
Colour	Colorless oil; tan liquid /technical grade/
Odour	Phosphorus odor
Melting point/freezing point	-15°C /technical grade/
Boiling point or initial boiling point and boiling range	403.4°C at 760 mmHg
Flammability	Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	197.8°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	Low (NIOSH, 2016)
Partition coefficient n-octanol/water	log Kow = 5.48
Vapour pressure	8.4×10 <sup>-5</sup> Pa (20 °C)
Density and/or relative density	1.20 (20°C)
Relative vapour density	1.20 (20°C)
Particle characteristics	no data available

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## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating. This produces toxic fumes including phosphorus oxides and sulfur oxides.

### Chemical stability

Hydrolyzed in basic conditions and is stable in acid or neutral conditions.

### Possibility of hazardous reactions

Organothiophosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides. Partial oxidation by oxidizing agents may result in the release of toxic phosphorus oxides.

### Conditions to avoid

no data available

### Incompatible materials

This compound is incompatible with the following:None reported (NIOSH, 1997)

### **Hazardous decomposition products**

When heated to decomposition it emits very toxic fumes of phosphorus oxide and sulfur oxides

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## **SECTION 11: Toxicological information**

### **Acute toxicity**

- Oral: LD50 Rat (male) oral 304 mg/kg
- Inhalation: LC50 Rat inhalation >4.1 mg/L air/4 hr
- Dermal: LD50 Rat (male) percutaneous 5,491 mg/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**

Cholinesterase inhibition. The substance may cause effects on the nervous system. This may result in convulsions and respiratory failure. The effects may be delayed. Medical observation is indicated. Exposure could cause death. See Notes.

### **STOT-repeated exposure**

Cholinesterase inhibition. Cumulative effects are possible. See Acute Hazards/Symptoms.

### **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.

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## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: LC50 *Oncorhynchus mykiss* (Rainbow trout, donaldson trout) 29.7 ppm/96 hr; static (95% confidence interval: 25.4-34.9 ppm)

/Conditions of bioassay not specified in source examined/ /formulated product

Toxicity to daphnia and other aquatic invertebrates: EC50 *Daphnia magna* (Water flea) intoxication, immobile 0.75 ppb/48 hr; static (95% confidence interval: 0.52-1.09 ppb) /Conditions of bioassay not specified in source examined/ /formulated product

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### **Persistence and degradability**

Sulprofos exhibited significant biodegradation in the presence of nonsterile sediment/estuarine water slurries(1). The study involved a shake-flask test containing estuarine water only or water and sediment and the first order rate constants were 0.00817 1/hr in estuarine water and sediment and 0.00148 1/hr in estuarine water only(1). The respective half-lives are 3.5 days and 19.5 days(SRC). The half-life of sulprofos in soils ranges from several days to several weeks depending upon soil type, and the major metabolites are sulprofos sulfoxide and sulprofos sulfone(2). Sulprofos was rapidly degraded in a simulated pond consisting of 6 liters of pond water and 5 grams of a Lufkin sandy loam placed in an outdoor environment(3). Only about 2% of the nominal amount of sulprofos applied to the pond remained after 48 hours, and the route of degradation was assumed to be a combination of biodegradation, hydrolysis, and photolysis(3). The half-life of sulprofos applied to a Lufkin fine sandy loam was about 0.5 weeks and about 4 weeks in a construction site sandy soil; sulprofos sulfoxide was observed as the major degradation product in each case(3).

### **Bioaccumulative potential**

An estimated BCF of 3,300 was calculated for sulprofos(SRC), using a log Kow of 5.48(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is very high(SRC).

### **Mobility in soil**

Experimental Koc values for sulprofos are 12,000(1) and 13,500(2). According to a classification scheme(2), these estimated Koc values suggest that sulprofos is expected to be immobile in soil(SRC).

### **Other adverse effects**

no data available

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## **SECTION 13: Disposal considerations**

### **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.

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## **SECTION 14: Transport information**

### **UN Number**

ADR/RID: UN3018 (For reference only, please check.)

IMDG: UN3018 (For reference only, please check.)

IATA: UN3018 (For reference only, please check.)

### **UN Proper Shipping Name**

ADR/RID: ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC (For reference only, please check.)

IMDG: ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC (For reference only, please check.)

IATA: ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC (For reference only, please check.)

### **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.)

### **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.)

### **Environmental hazards**

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### **Special precautions for user**

no data available

### **Transport in bulk according to IMO instruments**

no data available

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## **SECTION 15: Regulatory information**

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

#### **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**

Not Listed.

#### **New Zealand Inventory of Chemicals (NZIoC)**

Not Listed.



**PICCS**

Not Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC**

Not Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

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## SECTION 16: Other information

### 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](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

Depending on the degree of exposure, periodic medical examination is suggested. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

**Disclaimer:**

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