

## Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)  
Classifications according to Regulation (EC) No 1272/2008.  
Printdate 04 Mar 2024

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product name:

Cadusafos

### 1.1. Catalog No.:

677780

### 1.2. Relevant identified uses of the substance or mixture

Identified: Laboratory chemical  
uses: R&D

### 1.3. Uses advised against:

HPC Standards GmbH  
Am Wieseneck 7

04451 Cunnersdorf  
Deutschland

Tel. +49 34291 3372-36  
Fax. +49 34291 3372-39  
contact@hpc-standards.com

### 1.4. Emergency telephone number

HPC Standards Tel. +49 34291 3372-36  
This number is only available during office hours.

## 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture  
Classification according to Regulation (EC) No 1272/2008  
Acute toxicity, Oral (Category 2), H300  
Acute toxicity, Inhalation (Category 1), H330  
Acute toxicity, Dermal (Category 1), H310  
Acute aquatic toxicity (Category 1), H400

### 2.2. Label elements

#### 2.2.1. Pictogram



#### 2.2.2.

Signal word Danger  
Hazard statement(s)  
H300 + H310 + H330 Fatal if swallowed, in contact with skin or if inhaled

H400 Very toxic to aquatic life.  
Precautionary statement(s)  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash hands thoroughly after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing.  
P284 Wear respiratory protection.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
Supplemental Hazard Statements none  
2.3 Other hazards - none

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances  
Synonyms : S,S-di-sec-butyl O-ethyl phosphorodithioate  
O-Ethyl S,S-bis(1-methylpropyl) phosphorodithioate  
Formula : C<sub>10</sub>H<sub>23</sub>O<sub>2</sub>PS<sub>2</sub>  
Molecular weight : 270.39 g/mol  
CAS-No. : 95465-99-9  
Hazardous ingredients according to Regulation (EC) No 1272/2008  
Component: S,S-di-sec-butyl O-ethyl phosphorodithioate  
CAS-No.  
95465-99-9  
Classification: Acute Tox. 2; Acute Tox. 1;  
Aquatic Acute 1; H300, H330,  
H310, H400  
M-Factor - Aquatic Acute: 10  
Concentration: <= 100 %

#### 3.1.1. Formula

C<sub>10</sub>H<sub>23</sub>O<sub>2</sub>PS<sub>2</sub>

#### 3.1.2. Molecular Weight (g/mol)

270.39

#### 3.1.3. CAS-No.

95465-99-9

#### 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.

###### 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. FIRE-FIGHTING 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

Carbon oxides, Sulphur oxides, Oxides of phosphorus

##### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

##### 5.4 Further information

No data available

#### 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.

#### 7. HANDLING AND STORAGE

##### 7.1 Precautions for safe handling

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

Normal measures for preventive fire protection.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. 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

7.3 Specific end use(s)

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

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 gloves 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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

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 (US) or type ABEK (EN 14387) respirator cartridges as a backup to engine 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

Colour: colourless yellow

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

112 - 114 °C at 1.1 hPa

g) Flash point 129.4 °C

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 1.054 g/cm<sup>3</sup> at 20 °C
- n) Water solubility 0.248 g/l
- o) Partition coefficient: noctanol/  
water  
Pow: 3.9 at 20 °C
- 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

## 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 acids and 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

## 11. TOXICOLOGICAL INFORMATION

- 11.1 Information on toxicological effects  
Acute toxicity  
LD50 Oral - Rat - 37.1 mg/kg(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
LD50 Oral - Mouse - 71.4 mg/kg(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
LC50 Inhalation - Rat - 4 h - 0.026 mg/l(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
LD50 Dermal - Rabbit - male - 24.4 mg/kg(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
LD50 Dermal - Rabbit - female - 41.8 mg/kg(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
Skin corrosion/irritation  
Skin - Rabbit(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
Result: No skin irritation  
Serious eye damage/eye irritation  
Eyes - Rabbit(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
Result: No eye irritation  
Respiratory or skin sensitisation  
No data available(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
Germ cell mutagenicity  
No data available(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
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.  
Reproductive toxicity

No data available(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
Specific target organ toxicity - single exposure  
No data available(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
Specific target organ toxicity - repeated exposure  
No data available  
Aspiration hazard  
No data available(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
Additional Information  
RTECS: Not available  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.  
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## 12. ECOLOGICAL INFORMATION

12.1 Toxicity  
Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 0.13 mg/l - 96.0 h(S,S-di-secbutyl O-ethyl phosphorodithioate)  
LC50 - Lepomis macrochirus (Bluegill sunfish) - 0.17 mg/l - 96.0 h(S,S-di-secbutyl O-ethyl phosphorodithioate)  
Toxicity to daphnia and other aquatic invertebrates  
LC50 - Daphnia (water flea) - 0.0013 mg/l - 48 h(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
Toxicity to algae EC50 - Algae - 5.3 mg/l - 96 h(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
12.2 Persistence and degradability  
12.3 Bioaccumulative potential  
No data available  
12.4 Mobility in soil  
No data available(S,S-di-sec-butyl O-ethyl phosphorodithioate)  
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  
Very toxic to aquatic life.

## 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.  
Contaminated packaging  
Dispose of as unused product.

## 14. TRANSPORT INFORMATION

14.1 UN number  
UN number: 3077, Environmental Hazardous substance, solid, N.O.S.

14.2 Hazchem Code: 2Z

14.3 Special Provision: 274, 331, 335, 375, AU01

14.4 Limited quantities: ADG 7 specifies a Limited Quantity value of 5kg for this class of product.

14.5 Dangerous Goods Class: Class 9: Miscellaneous Dangerous Goods.

14.6 Packing Group: III

14.7 Packing Instruction: P002, IBC08, LP02

Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Dangerous Goods of Class 1 (Explosives)

## 15. REGULATORY INFORMATION

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

## 16. OTHER INFORMATION

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. For lab use only!