

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Thiosemicarbazide

Product Number : T33405  
Brand : Aldrich

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

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # : (314) 776-6555

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Thiocarbamoyl hydrazide

Formula :  $\text{CH}_5\text{N}_3\text{S}$   
Molecular Weight : 91.14 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Thiosemicarbazide</b>			
79-19-6	201-184-7	-	-

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Highly toxic by ingestion

##### HMIS Classification

Health Hazard: 3

Flammability: 0

Physical hazards: 0

##### NFPA Rating

Health Hazard: 0

Fire: 0

Reactivity Hazard: 0

##### Potential Health Effects

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.

**Skin** May be harmful if absorbed through skin. May cause skin irritation. May be fatal if absorbed through skin.

**Eyes** May cause eye irritation.

**Ingestion**

May be fatal if swallowed.

**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. 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. FIRE-FIGHTING MEASURES****Flammable properties**

Flash point not applicable

Ignition temperature no data available

**Suitable extinguishing media**

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

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods for cleaning up**

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE****Handling**

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**Storage**

Keep container tightly closed in a dry and well-ventilated place.

## 8. 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 N99 (US) or type P2 (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.

#### Eye protection

Safety glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	crystalline
Colour	beige

### Safety data

pH	no data available
Melting point	180 - 183 °C (356 - 361 °F)
Boiling point	no data available
Flash point	not applicable
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Materials to avoid

Strong oxidizing agents, Strong acids, Strong bases

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Sulphur oxides

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

LD50 Oral - rat - 9.16 mg/kg

LD50 Dermal - rabbit - 2,200 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Skin and Appendages: Other: Hair.

### Irritation and corrosion

no data available

### Sensitisation

no data available

### Chronic exposure

Carcinogenicity - rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.

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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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.

Genotoxicity in vitro - Human - HeLa cell

DNA damage

### Potential Health Effects

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation. May be fatal if absorbed through skin.
<b>Eyes</b>	May cause eye irritation.
<b>Ingestion</b>	May be fatal if swallowed.

### Additional Information

RTECS: VT4200000

## 12. ECOLOGICAL INFORMATION

### Elimination information (persistence and degradability)

no data available

### Ecotoxicity effects

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 20.8 mg/l - 96 h

### Further information on ecology

no data available

## 13. DISPOSAL CONSIDERATIONS

**Product**

Observe all federal, state, and local environmental regulations. 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.

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

UN-Number: 2811 Class: 6.1 Packing group: II  
 Proper shipping name: Toxic solids, organic, n.o.s. (Thiosemicarbazide)  
 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. (Thiosemicarbazide)  
 Marine pollutant: No

**IATA**

UN-Number: 2811 Class: 6.1 Packing group: II  
 Proper shipping name: Toxic solid, organic n.o.s. (Thiosemicarbazide)

**15. REGULATORY INFORMATION****OSHA Hazards**

Highly toxic by ingestion

**DSL Status**

All components of this product are on the Canadian DSL list.

**SARA 302 Components**

	CAS-No.	Revision Date
Thiosemicarbazide	79-19-6	1991-07-01

**SARA 313 Components**

	CAS-No.	Revision Date
Thiosemicarbazide	79-19-6	1991-07-01

**SARA 311/312 Hazards**

Acute Health Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
Thiosemicarbazide	79-19-6	1991-07-01

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Thiosemicarbazide	79-19-6	1991-07-01

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Thiosemicarbazide	79-19-6	1991-07-01

**California Prop. 65 Components**

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

## 16. OTHER INFORMATION

### 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 Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.