

SAFETY DATA SHEET

Version 6.1
Revision Date 07/17/2018
Print Date 11/16/2018

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : <SC>DL</>-Cysteine

Product Number : 861677

Brand : Aldrich

CAS-No. : 3374-22-9

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 Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

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 4), H302

Skin corrosion (Category 1A), H314

Serious eye damage (Category 1), H318

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

Acute aquatic toxicity (Category 3), H402

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)
H302

Harmful if swallowed.

H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life.
Precautionary statement(s)	
P260	Do not breathe dust or mist.
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/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363	Wash contaminated clothing before reuse.
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

3.2 Mixtures

Synonyms : (±)-2-Amino-3-mercaptopropionic acid

Formula : $C_3H_7NO_2S$

Molecular weight : 121.16 g/mol

Hazardous components

Hazardous components			
Component		Classification	Concentration
DL-Cysteine			
CAS-No.	3374-22-9	Acute Tox. 4; H302	>= 70 - < 90 %
EC-No.	222-160-2		
Triethylamine			
CAS-No.	121-44-8	Flam. Liq. 2; Acute Tox. 4; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; STOT SE 3; Aquatic Acute 2; H225, H302, H311 + H331, H314, H335, H401	>= 20 - < 30 %
EC-No.	204-469-4		
Index-No.	612-004-00-5		

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

Take off contaminated clothing and shoes immediately. 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. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. 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

Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides

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

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. 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 formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

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.

Keep in a dry place.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

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

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Triethylamine	121-44-8	TWA	0.5 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Visual impairment Not classifiable as a human carcinogen Danger of cutaneous absorption		
		STEL	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Visual impairment Not classifiable as a human carcinogen Danger of cutaneous absorption		
		See Appendix D - Substances with No Established RELs		
		TWA	25 ppm 100 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		C	1 ppm 4.1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

Hazardous components without workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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 particle respirator type N100 (US) or type P3 (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).

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: powder Colour: white
b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: 225 °C (437 °F) - dec.
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

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, Nitrogen oxides (NO_x), Sulphur oxides

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

Harmful if swallowed. (DL-Cysteine)

LD50 Oral - Rat - male and female - 730 mg/kg (Triethylamine)

(OECD Test Guideline 401)

Inhalation: No data available

LC50 Inhalation - Rat - 4 h - 7.22 mg/l (Triethylamine)

(OECD Test Guideline 403)

Dermal: No data available

LD50 Dermal - Rabbit - 580 mg/kg (Triethylamine)

(OECD Test Guideline 402)

Remarks: (ECHA)

No data available

No data available

Skin corrosion/irritation

No data available

Skin - Rabbit (Triethylamine)

Result: Corrosive

(OECD Test Guideline 404)

Serious eye damage/eye irritation

No data available

Eyes - Rabbit (Triethylamine)

Result: Causes serious eye damage.

(OECD Test Guideline 405)

Risk of corneal clouding. Causes serious eye damage. (Triethylamine)

Respiratory or skin sensitisation

No data available

Sensitisation test: - Guinea pig (Triethylamine)

Result: negative

Remarks: (ECHA)

Germ cell mutagenicity

No data available

No data available

Ames test (Triethylamine)

Salmonella typhimurium

Result: negative

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
No data available
No data available

Specific target organ toxicity - single exposure

No data available
May cause respiratory irritation. (Triethylamine)

Specific target organ toxicity - repeated exposure

No data available
No data available

Aspiration hazard

No data available (DL-Cysteine)
No data available (Triethylamine)

Additional Information

RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting (Triethylamine)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Triethylamine)

Central nervous system - Irregularities - Based on Human Evidence
Central nervous system - Irregularities - Based on Human Evidence (Triethylamine)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

Toxicity to fish	LC50 - <i>Oryzias latipes</i> (Orange-red killifish) - 24 mg/l - 96 h(Triethylamine) (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	semi-static test LC50 - <i>Ceriodaphnia dubia</i> (water flea) - 17 mg/l - 48 h(Triethylamine) (US-EPA)
Toxicity to algae	EC50 - <i>Pseudokirchneriella subcapitata</i> (green algae) - 8 mg/l - 72 h(Triethylamine) (OECD Test Guideline 201)
Toxicity to bacteria	EC50 - <i>Pseudomonas putida</i> - 95 mg/l - 17 h(Triethylamine) Remarks: (IUCLID)

12.2 Persistence and degradability

No data available

Biodegradability aerobic - Exposure time 28 d(Triethylamine)
Result: 80.3 % - Readily biodegradable.
(OECD Test Guideline 301B)

12.3 Bioaccumulative potential

No data available

Bioaccumulation *Cyprinus carpio* (Carp) - 42 d
at 25 °C(Triethylamine)

Bioconcentration factor (BCF): < 0.5
(OECD Test Guideline 305C)

Remarks: Does not bioaccumulate.

12.4 Mobility in soil

No data available(DL-Cysteine)
No data available(Triethylamine)

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.
Harmful to aquatic life.

No data available

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

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. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2923 Class: 8 (6.1) Packing group: III
Proper shipping name: Corrosive solids, toxic, n.o.s. (Triethylamine, DL-Cysteine)
Poison Inhalation Hazard: No

IMDG

UN number: 2923 Class: 8 (6.1) Packing group: III EMS-No: F-A, S-B
Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (Triethylamine, DL-Cysteine)

IATA

UN number: 2923 Class: 8 (6.1) Packing group: III
Proper shipping name: Corrosive solid, toxic, n.o.s. (Triethylamine, DL-Cysteine)

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Triethylamine	121-44-8	2007-03-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Triethylamine	121-44-8	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
DL-Cysteine	3374-22-9	
Triethylamine	121-44-8	2007-03-01

New Jersey Right To Know Components

DL-Cysteine
Triethylamine

CAS-No.
3374-22-9
121-44-8

Revision Date

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.

16. OTHER INFORMATION

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

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Eye Dam.	Serious eye damage
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H311 + H331	Toxic in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H401	Toxic to aquatic life.
H402	Harmful to aquatic life.
Skin Corr.	Skin corrosion
STOT SE	Specific target organ toxicity - single exposure

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
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