

## L-Serine 56-45-1 MSDS

<b>Name:</b>	L-Serine Material Safety Data Sheet
<b>Synonym:</b>	2-Amino-3-hydroxypropionic Acid; beta-Hydroxyalanine; Serine, L-; (S)-Serin
<b>CAS:</b>	56-45-1

### Section 1 - Chemical Product

MSDS Name: L-Serine Material Safety Data Sheet

Synonym: 2-Amino-3-hydroxypropionic Acid; beta-Hydroxyalanine; Serine, L-; (S)-Serin

### Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
56-45-1	L-Serine	ca.100	-

Hazard Symbols: None Listed.

Risk Phrases: None Listed.

### Section 3 - HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

The toxicological properties of this material have not been fully investigated. Light sensitive. Moisture sensitive.

Potential Health Effects

Eye:

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated.

Inhalation:

May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.

Chronic:

Laboratory experiments have resulted in mutagenic effects.



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#### **Section 4 - FIRST AID MEASURES**

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:

Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

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#### **Section 5 - FIRE FIGHTING MEASURES**

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

Use agent most appropriate to extinguish fire. Do NOT get water inside containers. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

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#### **Section 6 - ACCIDENTAL RELEASE MEASURES**

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers.

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#### **Section 7 - HANDLING and STORAGE**

Handling:

Wash thoroughly after handling. Use with adequate ventilation.

Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Store protected from light. Do not allow contact with water. Keep from contact with moist air and steam.



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Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture. Store protected from light.

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## Section 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

### Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits CAS# 56-45-1: Russia: 5 mg/m<sup>3</sup> TWA Personal Protective Equipment Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

### Skin:

Wear appropriate protective gloves to prevent skin exposure.

### Clothing:

Wear appropriate protective clothing to prevent skin exposure.

### Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Powder and chunks

Color: white

Odor: odorless

pH: Not available.

Vapor Pressure: Negligible.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 222 deg C (dec)

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature: 222 deg C

Solubility in water: Soluble.

Specific Gravity/Density: Not available.

Molecular Formula: C<sub>3</sub>H<sub>7</sub>NO<sub>3</sub>

Molecular Weight: 105.0539

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## Section 10 - STABILITY AND REACTIVITY

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

High temperatures, incompatible materials, light, dust generation, moisture.

Incompatibilities with Other Materials:

Moisture, strong oxidizing agents.

Hazardous Decomposition Products:

Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

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## Section 11 - TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 56-45-1: VT8100000 LD50/LC50:

Not available.

Carcinogenicity:

L-Serine - Not listed by ACGIH, IARC, or NTP.

Other:

See actual entry in RTECS for complete information.

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## Section 12 - ECOLOGICAL INFORMATION

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## Section 13 - DISPOSAL CONSIDERATIONS

Products which are considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local waste regulator for advice. Empty containers must be decontaminated before returning for recycling.

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## Section 14 - TRANSPORT INFORMATION

IATA

Not regulated as a hazardous material.

IMO

Not regulated as a hazardous material.

RID/ADR

Not regulated as a hazardous material.



## **Section 15 - REGULATORY INFORMATION**

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 56-45-1: 0

Canada

CAS# 56-45-1 is listed on Canada's DSL List.

CAS# 56-45-1 is not listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 56-45-1 is listed on the TSCA inventory.

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## **SECTION 16 - ADDITIONAL INFORMATION**

N/A