

## L-SERINE

### SECTION 1: CHEMICAL PRODUCT IDENTIFICATION

Product Name: L-Serine  
Product Code: CM 23516  
CAS#: 56-45-1  
Synonym: (S)-2-Amino-3-hydroxypropionic acid  
Chemical Name: Not available  
Chemical Formula:  $C_3H_7NO_3$   
Formula weight : 105.09

### SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS

Composition:  
Name: L-Serine  
Toxicological Data on Ingredients:  
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.  
This substance is not classified as dangerous according to Directive 67/548/EEC.

### SECTION 3: HAZARDS IDENTIFICATION

Classification of the substance or mixture  
Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.  
Potential Acute Health Effects: Not available.  
Potential Chronic Health Effects: Not available.  
Carcinogenic Effects: Not available.  
Mutagenic Effects: Not available.  
Teratogenic Effects: Not available.  
Developmental Toxicity: Not Available

### SECTION 4: FIRST AID MEASURES

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. 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.  
Most important symptoms and effects, both acute and delay: No data available  
Indication of any immediate medical attention and special treatment needed: No data available

### SECTION 5: FIRE AND EXPLOSION DATA

Extinguishing media  
Suitable extinguishing media Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder.  
Special hazards arising from the substance or mixture  
Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Hydrogen chloride gas, Combustible.  
Development of hazardous combustion gases or vapours possible in the event of fire.  
Advice for firefighters Wear self-contained breathing apparatus for firefighting if necessary.



### SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

Environmental precautions Do not let product enter drains.

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.

### SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage, including any incompatibilities

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

Storage Class:

Storage class (TRGS 510): 11: Combustible Solids

Specific end use(s) A part from the uses:

No other specific uses are stipulated

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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 Safety glasses with side-shields conforming to EN166 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 For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure Do not let product enter drains.

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance Form	:Powder
Colour	:White
Odour	:Not available
Odour Threshold	:Not available
pH	:Not available
Melting point/freezingpoint	:222°C
Initial boiling point and boiling range	:Not available
Flash point	:Not available
Evaporation rate	:Not available
Flammability (solid, gas)	:Not available
Upper/lower flammability or explosive limits	:Not available



Vapour pressure	:Not available
Vapour density	:Not available
Relative density	:1,6 g/cm <sup>3</sup> at 22 °C - lit.
Water solubility	:359,7 g/l at 20 °C
Partition coefficient	:Not available
Auto-ignition temperature	:Not available

#### SECTION 10: STABILITY AND REACTIVITY DATA

Reactivity no data available

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents

Conditions to avoid :

no data available

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products Other decomposition products - In the event of fire

#### SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

LD50 Oral - Rat - male and female - > 2.000 mg/kg

LC50 Inhalation - Rat - male and female - 4 h - > 5,15 mg/l

Skin corrosion/irritation no data available

Serious eye damage/eye irritation no data available

Respiratory or skin sensitization no data available

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.

#### SECTION 12: ECOLOGICAL INFORMATION

Toxicity:

Toxicity to daphnia static test EC50 - Daphnia magna (Water flea) - > 83 mg/l - 48 h  
and other aquatic  
invertebrates

Persistence and degradability:

Biodegradability aerobic - Exposure time 28 d

Result: 81 % - Readily biodegradable

Bioaccumulative potential no data available

Mobility in soil no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available

Other adverse effects no data available

#### SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods Product Offer surplus and non-recyclable solutions to a licensed disposal company. 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.

#### SECTION 14: TRANSPORT INFORMATION

UN number:

ADR/RID:

IMDG:

IATA:

UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

Transport hazard class(es):

ADR/RID:

IMDG:

IATA:

Packaging group:

ADR/RID:

IMDG:

IATA:

Environmental hazards:

ADR/RID: No

IMDG Marinepollutant: No

IATA: No

#### SECTION 15: OTHER REGULATORY INFORMATION

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

#### SECTION 16: OTHER INFORMATION

References: Full text of H AND R-Statements.

Not Applicable

Other Special Considerations: Not available

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