



SAFETY DATA SHEET

BA-1014

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L-Serine

Prepared in accordance with the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals, as adopted under the Work Health and Safety Regulations (Australia).

SECTION 1 — IDENTIFICATION

Product Name	L-Serine
Catalogue Number	BA-1014
CAS Number	56-45-1
Molecular Formula	$C_3H_7NO_3$
Synonyms	L-Ser-OH; 2-Amino-3-hydroxypropanoic acid; L-β-Hydroxyalanine
Grade	Food Grade
Recommended Use	Nutritional systems, food and supplement manufacturing, and specialised ingredient formulation. Not intended for therapeutic, diagnostic, or injectable use unless separately qualified.
Supplier	AuSaMicS Pty Ltd (Benario), 36/25 Trafalgar Road, Epping VIC 3076, Australia Phone: +61 412 520 598 Email: support@ausamics.com
Emergency Telephone	AuSaMicS Pty Ltd: +61 412 520 598 (business hours, AEST) Poisons Information Centre (Australia): 13 11 26 (24 hours)

SECTION 2 — HAZARDS IDENTIFICATION

GHS Classification: Not classified as a hazardous substance or mixture under the Australian WHS Regulations or GHS criteria.

Signal Word: None required. Pictograms: None required.

Other hazards: This substance does not meet the criteria for PBT (persistent, bioaccumulative, toxic) or vPvB (very persistent, very bioaccumulative). As with any fine powder, avoid unnecessary inhalation of dust.

SECTION 3 — COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	EC No.	Concentration
L-Serine	56-45-1	206-130-6	≥ 99%

Substance (not a mixture). Molecular weight: 105.09 g/mol.

SECTION 4 — FIRST AID MEASURES

Inhalation	Remove to fresh air. Seek medical attention if discomfort persists.
Skin Contact	Wash with plenty of water. Seek medical attention if irritation develops.
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Seek medical attention if irritation persists.

Ingestion	Rinse mouth with water. L-Serine is a normal dietary amino acid; ingestion of small amounts of the pure substance is not expected to be harmful, but this product is not intended for direct consumption outside its intended formulation use.
Most Important Symptoms	No significant symptoms expected under normal handling. Dust may cause mild, transient irritation to eyes or respiratory tract.

SECTION 5 — FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing media appropriate to the surrounding fire; product itself has low flammability risk.
Unsuitable Extinguishing Media	None known.
Specific Hazards	Combustible as a fine organic powder in the presence of an ignition source; thermal decomposition may release oxides of carbon and nitrogen.
Advice for Firefighters	Wear standard fire-fighting protective equipment and self-contained breathing apparatus if significant smoke/fume is present.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid generating dust. Use appropriate PPE (Section 8) if handling large spills.
Environmental Precautions	Not expected to pose a significant environmental hazard.
Containment & Clean-Up	Sweep or vacuum carefully (avoid dust generation) and collect in a suitable labelled container. Wash the spill site with water.

SECTION 7 — HANDLING AND STORAGE

Handling Precautions	Handle in a well-ventilated area. Avoid generating or inhaling dust.
Hygiene Measures	Wash hands after handling.
Storage Conditions	Store in a cool, dry place at 15–25°C. Keep container tightly closed.

SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standard	No specific Australian Workplace Exposure Standard established for L-Serine. Apply the general inhalable dust limit (10 mg/m ³) as a precaution.
Eye/Face Protection	Safety spectacles recommended for bulk powder handling.
Hand Protection	Standard laboratory gloves (e.g. nitrile).
Skin/Body Protection	Standard protective clothing.
Respiratory Protection	Not normally required with adequate ventilation; use a dust mask where dust generation is significant.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Physical State	Solid, crystalline powder
Appearance	White crystalline powder
Odour	Odourless

Taste	Slightly sweet
Melting Point	~222°C (decomposes)
Density	~1.6 g/cm ³
Solubility in Water	Freely soluble (~250 g/L at 20°C)
Solubility — Other	Insoluble in alcohol and ether
Specific Rotation [α] _{D20}	+14.4° to +16.0° (c = 10, 2N HCl)
pKa	2.21 (carboxyl), 9.15 (amino)
Flammability	Not classified as flammable under normal conditions

SECTION 10 — STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended ambient storage conditions.
Reactivity	Reacts with strong oxidising agents.
Hazardous Polymerisation	Will not occur.
Incompatible Materials	Strong oxidising agents.
Hazardous Decomposition Products	Oxides of carbon and nitrogen on strong heating or combustion.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute Toxicity	Low acute toxicity. L-Serine is a naturally occurring non-essential amino acid and a normal dietary component, involved in phosphatidylserine biosynthesis.
Skin/Eye Irritation	Not classified as irritant; dust may cause mild, transient mechanical irritation.
Sensitisation	No data indicating sensitisation potential.
Carcinogenicity/Mutagenicity/Reproductive Toxicity	No evidence of carcinogenicity, mutagenicity, or reproductive toxicity.

SECTION 12 — ECOLOGICAL INFORMATION

Aquatic Toxicity	Not expected to be toxic to aquatic organisms at typical use concentrations; a naturally occurring biological compound.
Persistence/Degradability	Readily biodegradable.
Bioaccumulative Potential	Not expected to bioaccumulate.
Mobility in Soil	No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Dispose of contents/container in accordance with local council and EPA requirements. Small quantities may generally be disposed of as general/organic waste; confirm with local regulations for larger quantities.

SECTION 14 — TRANSPORT INFORMATION

Not classified as Dangerous Goods under the Australian Dangerous Goods (ADG) Code, IATA, or IMDG regulations. No UN Number applicable. No special transport precautions required.

SECTION 15 — REGULATORY INFORMATION

Grade	Food Grade — suitable for food, nutraceutical, and specialised functional formulation use
WHS/GHS	Compliant with Australian WHS Regulations and current GHS classification criteria
Intended Use Restriction	Not for direct sale as a finished consumer food, supplement, or pharmaceutical product unless separately qualified for that purpose

SECTION 16 — OTHER INFORMATION

SDS Reference	SDS-BA-1014-SER
Revision Date	10 Feb 2026
Prepared By	AuSaMicS Pty Ltd (Benario Premium Ingredients)
Next Review	August 2028
Abbreviations	GHS = Globally Harmonized System; WHS = Work Health and Safety; PBT = Persistent, Bioaccumulative, Toxic; vPvB = very Persistent, very Bioaccumulative

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