

DL- Serine

PRODUCT IN FOCUS



DL-Serine

INTRODUCTION

DL-Serine is a racemic mixture of both the D- and L-forms of the amino acid serine, which is a polar, nonessential amino acid. It is an α -amino acid characterized by its hydroxyl-containing side chain, which enables it to take part in numerous biochemical reactions and synthetic processes. It functions as a pivotal intermediate in the biosynthesis of amino acids, including glycine and cysteine, underscoring its essential role in cellular metabolism. Moreover, it constitutes a critical pharmaceutical intermediate for the synthesis of a broad spectrum of therapeutic agents and drug candidates.

Manufacture

It is manufactured via microbial fermentation, typically using corn-derived glucose as the primary carbon source. During fermentation, selected microbial strains convert carbohydrates into L-Serine through enzymatic pathways followed by isolation, purification, and racemization steps to yield DL-Serine.

This biotechnological route offers a sustainable and vegan-compatible alternative to traditional chemical synthesis.

Applications

DL-Serine finds extensive applications across the pharmaceutical, nutraceutical, cosmetics and chemical industries.

Pharmaceutical Intermediates

- Used as a starting material or intermediate in the synthesis of various amino acids, peptides.
- In manufacture of compounds such as glycine, cysteine, and other biologically active molecules.
- Serves as a building block in the preparation of chiral drugs and intermediates.

Nutraceuticals & Dietary Supplements

- Functions as a nutritional additive in specific formulations aimed at supporting amino acid balance.
- In food fortification.

Chemical & Biochemical Research

- Widely used as a research reagent and biochemical standard in laboratories.
- Serves as a precursor for various synthetic reactions.

Cosmetic & Personal Care Applications

- Used in skin-care formulations as a conditioning or hydrating agent due to its amino acid properties.

Synonyms

2-acetamido-3-hydroxypropanoic acid

CAS no.

302-84-1

EINECS no.

206-130-6

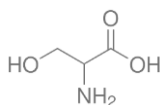
Molecular formula

$C_3H_7NO_3$

Molecular weight

105.09

Structure



DL- Serine

PRODUCT IN FOCUS



SPECIFICATIONS

Test	Unit	Specification
Appearance	-	White crystals or crystalline powder
Identification (By HPLC)	-	Retention time should correspond to WRS under assay test
State of solution	%	NLT 98.0
Loss on drying	%	NMT 0.3
Residue on ignition (Sulfated)	%	NMT 0.10
Chloride (Cl)	%	NMT 0.020
Ammonium (NH ₄)	%	NMT 0.02
Sulfate (SO ₄)	%	NMT 0.02
Heavy metals (Pb)	ppm	NMT 10
Iron (Fe)	ppm	NMT 10
Arsenic (As ₂ O ₃)	ppm	NMT 1
Assay	%	99.0 – 101.0

STORAGE & PRECAUTION

Store at ambient conditions

PACKING

25 kg drum

REACH Status

Not registered

ExSyn offers DL-Serine on commercial scales and welcomes enquiries. No matter the quantity you need, our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.