

## SPECIFICATION

<b>Product name</b>	<b>L-Serine</b>
<b>Product code</b>	<b>SPLS01</b>
<b>Production site</b>	<b>Heilongjiang NHU Biotechnology</b>
<b>Trade name</b>	<b>L-Serine (intermediate, technical application)</b>
<b>Description</b>	
Ingredients	L-Serine
Formula	C <sub>3</sub> H <sub>7</sub> NO <sub>3</sub>
Molecular weight	105,09 g/mol
CAS No	56-45-1
<b>Properties</b>	
Shelf life	24 months after production date in unopened original packaging
Appearance	white crystal or crystalline powder, odourless
Solubility	readily soluble in water, almost insoluble in ethanol (96 %), acetone or ether
Assay on dried basis	98,50 % - 101,0 %
Transmittance of solution	> 98 %
Particle size	> 90 % through #20 mesh <10 % through #80 mesh
pH	5,5 to 6,5
Identification 1 (TIC)	The location and colour of the main spots in the test solution should be the same as the main spots in the control solution
Identification 2 (IR)	IR meets requirement
Appearance of solution	clear and ≤ BY <sub>6</sub>
optical rotation	+14,0 ° – +16,0 °
Chlorides	≤ 200 mg/kg
Sulfates	≤ 300 mg/kg
Ammonium	≤ 200 mg/kg
Iron (Fe)	≤ 10 mg/kg
Arsenic (As)	≤ 1,0 mg/kg
Lead	≤ 0,5 mg/kg
Cadmium (Cd)	≤ 0,5 mg/kg
Mercury (Hg)	≤ 0,1 mg/kg
Loss on drying	≤ 0,2 %
Residue on ignition	≤ 0,1 %

**Related Impurities**

Phenylalanine  $\leq 100$  mg/kg  
Ninhydrin-positive substances Any ninhydrin-positive substance:  
for each impurity  $\leq 0,2$  %  
Total impurities:  $\leq 0,5$  %

Residual solvent (as Methanol)  $\leq 3000$  mg/kg

**Microbiology**

Total plate count  $\leq 1000$  CFU/g  
Yeasts and Moulds  $\leq 100$  CFU/g  
E. coli negative in 10 g  
Salmonella negative in 25 g  
Staph. aureus negative 25 g

**Handling**

Usage Product can be used as intermediate (technical application).

Storage Store in a dry place, in sealed original container.

The product complies to EP.

## NHU EUROPE GmbH