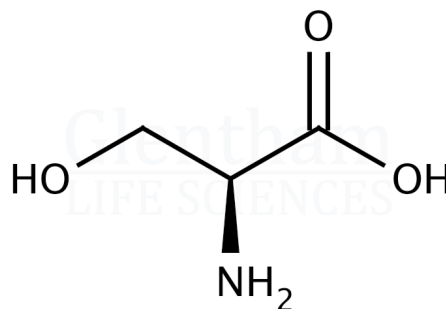


## Certificate of Analysis

Product Name L-Serine  
Glenthams Code GM1114  
CAS Number 56-45-1  
EINECS 200-274-3  
MDL Number MFCD00064224  
PubChem SID 310279962  
Batch Number 755XSL

Molecular Weight 105.09  
Molecular Formula  $C_3H_7NO_3$   
Storage Temp. +20°C



Property	Specification	Batch 755XSL
Physical Description	White crystals or crystalline powder	White crystalline powder
Identification (IR)	To conform to standard	Conforms
Solubility (5% in water)	Clear, colourless solution	Conforms
Specific Optical Rotation ( $[\alpha]_{20/D}$ )	+14.0 - +15.6 °	+15.4°
Chloride	≤ 0.05%	Conforms
Sulphate	≤ 0.03%	Conforms
Iron (Fe)	≤ 30ppm	Conforms
Heavy Metals (as Pb)	≤ 15ppm	Conforms
Any Individual Impurity	≤ 0.5%	Conforms
Total Impurities	≤ 2.0%	Conforms
Residue on Ignition	≤ 0.1%	0.0%
Loss on Drying	≤ 0.2%	0.02%
Assay	98.5 - 101.5 % (dried basis)	100.1%
Pharmacopoeia Specification(s)	USP	Conforms to USP

Specification Version v1.1  
Manufacture Date 2021-05-30  
Re-Test Date 2030-02-04

Glenthams Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check [www.glenthams.com](http://www.glenthams.com) or contact us using the details above for the current version of this document.

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