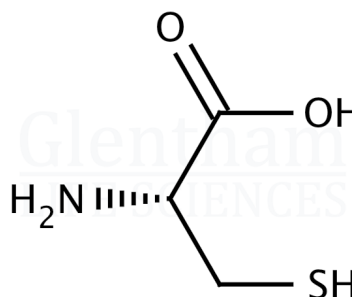


Certificate of Analysis

| | |
|-------------------|-------------------------------------------------|
| Product Name | L-Cysteine, 99%, non-animal origin |
| Glentham Code | GM8797 |
| CAS Number | 52-90-4 |
| EINECS | 200-158-2 |
| MDL Number | MFCD00064306 |
| Additional CAS | 345909-32-2 (\cdot xH ₂ O) |
| Batch Number | 372XGS |
| Molecular Weight | 121.16 |
| Molecular Formula | C ₃ H ₇ NO ₂ S |
| Storage Temp. | +20°C |



| Property | Specification | Batch 372XGS |
|-------------------------------------------------|------------------------------------------|----------------------------|
| Physical Description | White to almost white powder or crystals | White crystalline powder |
| Solubility (2.5% in water) | Clear, colourless solution | Clear, colourless solution |
| Solubility (10% in 2M HCl) | Clear, colourless solution | Clear, colourless solution |
| pH (2.5% in water) | 4.5 - 5.5 | 5.3 |
| Specific Optical Rotation ($[\alpha]_{20/D}$) | +8.3 - +9.5 ° (c=8, 1M HCl) | +8.5° |
| Chloride (Cl) | ≤ 0.05% | ≤ 0.04% |
| Sulphate (SO ₄) | ≤ 0.03% | ≤ 0.02% |
| Ammonium (NH ₄) | ≤ 0.02% | Conforms |
| Iron (Fe) | ≤ 10ppm | Conforms |
| Heavy Metals (as Pb) | ≤ 10ppm | Conforms |
| Residue on Ignition | ≤ 0.1% | 0.05% |
| Loss on Drying | ≤ 0.5% (105°C, 3h) | 0.48% |
| Assay (Titration) | 98.5 - 101.0 % | 99.2% |
| Origin | Vegetal fermentation | Conforms |

| | |
|-----------------------|------------|
| Specification Version | v1.0 |
| Manufacture Date | 2023-06-06 |
| Re-Test Date | 2031-06-30 |

Glentham Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check www.glentham.com or contact us using the details above for the current version of this document.

This document was generated electronically and is therefore valid without signature. © Glentham Life Sciences Ltd, 2024