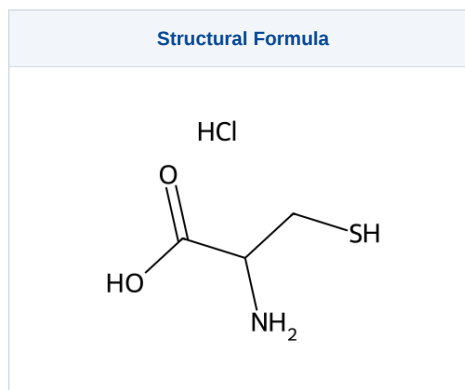


## CERTIFICATE OF ANALYSIS

Standard product specification — applicable to all consignments of this product and grade supplied by Scapex Exports Pvt. Ltd., manufacturer and supplier of quality chemicals.

|                   |                                                   |
|-------------------|---------------------------------------------------|
| Product Name      | DL-Cysteine hydrochloride, 98+%                   |
| C.A.S. Number     | 10318-18-0                                        |
| Molecular Formula | C <sub>3</sub> H <sub>8</sub> CINO <sub>2</sub> S |
| Molecular Weight  | 157.62                                            |
| Grade / Standard  | Fine chemical grade — assay on specification      |
| Physical Form     | White crystalline powder                          |
| Product Category  | Vitamins, Minerals & Amino Acids                  |
| Country of Origin | India                                             |



## ANALYTICAL RESULTS

| S. No. | Test Parameter                | Specification                              | Result                   | Method               |
|--------|-------------------------------|--------------------------------------------|--------------------------|----------------------|
| 1      | Description                   | White crystalline powder                   | <b>Complies</b>          | Visual               |
| 2      | Identification                | Conforms to the structure of the substance | <b>Complies</b>          | FTIR / Chemical test |
| 3      | Solubility                    | As per specification                       | <b>Complies</b>          | Visual / Monograph   |
| 4      | Specific Optical Rotation     | As per monograph                           | <b>Conforms</b>          | Polarimetry          |
| 5      | Loss on Drying                | Not more than 0.5 % w/w                    | <b>0.16</b>              | Gravimetry           |
| 6      | Residue on Ignition           | Not more than 0.1 % w/w                    | <b>0.013</b>             | Gravimetry           |
| 7      | Chloride                      | Not more than 0.05 %                       | <b>0.0101</b>            | Turbidimetry         |
| 8      | Lead (Pb)                     | Not more than 3 ppm                        | <b>Less than 0.5 ppm</b> | ICP-MS               |
| 9      | Heavy Metals (as Pb)          | Not more than 10 ppm                       | <b>Less than 5 ppm</b>   | ICP-OES              |
| 10     | Total Aerobic Microbial Count | Not more than 1000 cfu/g                   | <b>131 cfu/g</b>         | IP / USP <61>        |
| 11     | Total Yeast & Mould Count     | Not more than 100 cfu/g                    | <b>7 cfu/g</b>           | IP / USP <61>        |
| 12     | Escherichia coli              | Absent in 1 g                              | <b>Absent</b>            | IP / USP <62>        |
| 13     | Salmonella species            | Absent in 10 g                             | <b>Absent</b>            | IP / USP <62>        |
| 14     | Structure                     | Conforms to reference structure            | <b>Complies</b>          | FTIR / NMR           |

#### Remarks

Material supplied against this specification is analysed on every production lot and **conforms** to the limits stated above in all tested parameters. Results shown are the typical values obtained for this grade.

Retained samples are held against every export consignment. Store in tightly closed original packing, in a cool, dry, well-ventilated place away from incompatible materials and direct sunlight.

#### Checked and Approved by

##### Prem Panchal

Quality Assurance  
Scapex Exports Pvt. Ltd.

This document sets out the standard specification for the product named above and applies to all consignments of this grade. It is issued by Scapex Exports Pvt. Ltd. as manufacturer and supplier. Refer to the Material Safety Data Sheet (MSDS) before handling.