

## **CERTIFICATE OF ANALYSIS**

Date: 14/01/16

**PRODUCT NAME : L-CYSTEINE HYDROCHLORIDE (MONOHYDRATE)**

**CAS No : 7048- 04- 6**

**Product code : 14040**

**Mol. Formula : C<sub>3</sub>H<sub>7</sub>NO<sub>2</sub>S.HCl.H<sub>2</sub>O**

**Batch No : MCR-11012**

**Mol. WT : 175.64**

**Mfd. : Jan. 2016**

**Exp. : Dec. 2020**

| S. R | Test                                       | Specification               | Observation       |
|------|--------------------------------------------|-----------------------------|-------------------|
| 1    | Assay (On dried basis)                     | 99 % min                    | 99.40 %           |
| 2    | Sp. rotation [ $\alpha$ ]<br>C = 2, 5N HCl | + 5.5 to + 6.5 <sup>0</sup> | +6.5 <sup>0</sup> |
| 3    | Loss on drying at 130°C                    | 9.0 – 11.5                  | 11.22             |
| 4    | Sulphated ash                              | 0.1% max                    | 0.04%             |
| 5    | Sulphate (SO <sub>4</sub> )                | 0.01% max                   | < 0.01%           |
| 6    | Iron (Fe)                                  | 0.001% max                  | < 0.001%          |
| 7    | Heavy metals (Pb)                          | 0.001% max                  | < 0.001%          |

**REMARK:** THE PRODUCT COMPLIES WITH THE ABOVE SPECIFICATIONS

**[Tested By]**

**[QC Incharge]**

**HEAD-QUALITY ASSUARANCE  
(G.G.Salian)**

**Note:** Computer generated image requires no sign.