



CERTIFICATE OF ANALYSIS

L-GLUTAMIC ACID

| ITEM | SPECIFICATION | RESULT |
|---|--|------------------------------------|
| 1. Description: | white crystals or crystalline Powder Strongly acid taste | white crystals strongly acid taste |
| 2. Specific rotation: | +31.5-+32.5 | +31.9 |
| 3. State of solution: | Not less than 98.0% | 98.80% |
| 4. Chloride (Cl): | Not more than 0.02% | Less than 0.02% |
| 5. Ammonium (NH ₄): | Not more than 0.02% | Less than 0.02% |
| 6. Sulphate(SO ₄): | Not more than 0.02% | Less than 0.02% |
| 7. Iron: | Not more than 10ppm | Less than 10ppm |
| 8. Heavy metals: | Not more than 10ppm | Less than 10ppm |
| 9. Arsenic (As ₂ O ₂): | Not more than 1ppm | Less than 1ppm |
| 10. Other amino acids: | Not detectable | Not detectable |
| 11. Loss on drying: | Not more than 0.1% | 0.09% |
| 12. Residue on ignition: | Not more than 0.1% | 0.04% |
| 13. Assay (on drying basis): | 99.0-100.5% | 99.90% |
| 14. PH: | 3.0-3.5 | 3.2 |