

Certificate of Analysis

| | |
|------------------|-------------------|
| Date format | DD.MM.YYYY |
| Creation date | 05.12.2019 |
| Your order no. | 028782 |
| Date | 19.11.2019 |
| Delivery note | 80789804 000030 |
| Date of dispatch | 05.12.2019 |
| Our reference | 737001 000050 |
| Date | 19.11.2019 |
| Client number | |
| Date of arrival | 10.12.2019 |

Material / Product / Description

137243 / / L(+)-lactic acid 88% heat stable food grade in 25 kg drums

Shipping point

Jungbunzlauer S.A., Z.I. Et Portuaire - B.P. 32, 67390 Marckolsheim

| Batch | Quantity | Date of production | Date of expiry | Production plant, country | Country of Origin |
|---------|----------|--------------------|----------------|---------------------------|-------------------|
| 5125421 | 800 KG | 24.10.2019 | 10.2022 | Marckolsheim, FR | FR |

We herewith confirm that this product meets the requirements of Commission Regulation (EU) No 231/2012 and of the latest edition of the Food Chemical Codex (FCC). All analytical methods are in accordance with the latest requirements of the FCC or equivalent methods. Test methods are available on request.

| Parameter | Unit | Specification | Value |
|--|-------|---------------|-----------|
| Identification | | | conforms |
| Assay | % | 88.0 - 89.0 | 88.2 |
| Stereochemical purity (L-isomer) | % | >= 97 | conforms* |
| Colour (fresh) | APHA | <= 35 | 5 |
| Colour (after heating at 200°C, 2H) | APHA | <= 50 | 17 |
| Density (20°C) | g/cm3 | 1.19 - 1.21 | 1.21 |
| Sulfated ash | % | <= 0.05 | conforms* |
| Chloride | mg/kg | <= 10 | conforms* |
| Sulphate | mg/kg | <= 10 | conforms* |
| Cyanide | mg/kg | <= 1 | conforms* |
| Iron | mg/kg | <= 5 | conforms* |
| Lead (Pb) | mg/kg | <= 0.5 | conforms* |
| Arsenic | mg/kg | <= 1 | conforms* |
| Mercury | mg/kg | <= 1 | conforms* |
| Heavy Metals (as Pb) | mg/kg | <= 5 | conforms* |
| Calcium | mg/kg | <= 20 | conforms* |
| Citric oxalic phosphoric tartaric acid | | | conforms* |
| Readily carbonisable substances | | | conforms* |
| Reducing sugars | | | conforms* |