

Certificate of Analysis

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|------------|--------------------------|---------------------|---------------|
| SUPPLIER: | JK BIO-CHEM CO.,LTD | | |
| PRODUCT: | DL-MALIC ACID FOOD GRADE | | |
| BATCH NO.: | 130911 | DATE: | SEPT 11, 2013 |
| QUANTITY: | 7000KGS | MANUFACTURING DATE: | SEPT 11, 2013 |
| P.O NO.: | 13RCIS003001621 | EXPIRY DATE: | SEPT 10, 2015 |

| ITEM | STANDARD | RESULTS |
|------------------------------------------------------------|-------------------------------------|-------------------------------------|
| Description | White crystalline granule or powder | White crystalline granule or powder |
| Assay(as C ₄ H ₆ O ₅) | 99.0%~100.5% | 99.06% |
| Specific rotation [α]D ²⁵ _C | -0.10 ° ~ +0.10 ° | 0 |
| Heavy Metals | 10ppm max | 10ppm max |
| Fumaric acid | 1.0% max | 0.90% |
| Residue on Ignition | 0.1% max | 0.07% |
| Maleic acid | 0.05% max | 0.01% |
| Water-insoluble Matter | 0.1% max | 0.01% |
| Arsenic (as As ₂ O ₃) | 2ppm max | 2ppm max |
| Sulphate | 300mg/kg max | <300mg/kg |
| Chloride | 100ppm max | 100ppm max |
| Initial melting point | 127.0 °C min | 129.0 °C |
| Colour 10% Solution APHA | 10 max | 10 max |

FINAL RESULT: THIS BATCH IS CONFORMING TO THE STANDARD OF FOOD GRADE

INSPECTOR: 吴彬

QUALITY CONTROL SECTION: 王晓红

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