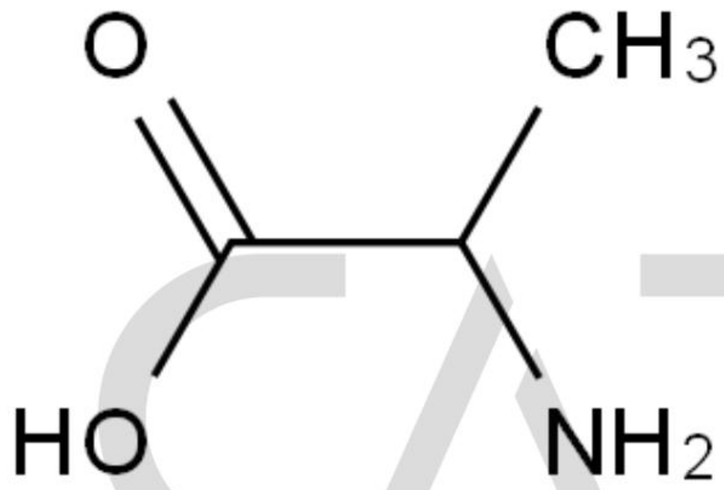
# Certificate of Analysis

## Reference Material & Standard

| | | | |
|---|---|---|---|
| **Product Name:** | DL-Alanine | **Catalogue Number:** | CCFD200092 |
| **Synonyms:** | N/A | **Lot Number:** | 0202-RE-0043 |
| **CAS Number:** | 302-72-7 | **Expiry Date:** | Apr 06, 2030 |
| **Molecular Formula:** | $C_3H_7NO_2$ | **Storage:** | 2°C ~ 8°C Protected from light and Sealed |
| **Molecular Weight:** | 89.09 | **Shipping Condition:** | Shipping at Room Temperature |

**Chemical Structure:**




| Test Items | Method | Results |
|---|---|---|
| **Appearance** | Visual inspection | White Solid |
| **Identification** | LCMS&IR&CNMR&HNMR | Confirmed |
| **Purity** | ELSD | 100.000% |
| **Loss on Drying** | TGA | 0.1162% |
| **Assay** | | 99.9% |
| **Uncertainty** | | ±0.2% |

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## Comment:

*1. The calculation of the mass balance method follows the formula (calculated on the non-dried basis):*
*Assay (%) = (100%-Loss on Drying) * Purity ELSD (%) /100%*
*Loss on Drying is considered as absolute effect, ELSD purity is considered as relative effect.*
*2. The uncertainty values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.*

**Signature:**

Prepared by: Alice Date: Sep 01, 2026

Reviewed by: Lisa Date: Sep 01, 2026

Approved by General Manager: David Date: Sep 01, 2026

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