

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.com

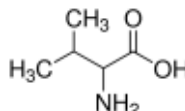
Email USA: techserv@sial.com

Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
DL-Valine - ≥97%

Product Number: W344400
Batch Number: MKBX2831V
Brand: ALDRICH
CAS Number: 516-06-3
MDL Number: MFCD00004267
Formula: C₅H₁₁NO₂
Formula Weight: 117.15 g/mol
Quality Release Date: 13 JAN 2016
Expiration Date: DEC 2020



Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder	Powder
Infrared Spectrum	Conforms to Structure	Conforms
Proton NMR Spectrum	Conforms to Structure	Conforms
Final Melting Point	≤ 295 °C	287 °C
Carbon	49.7 - 52.8 %	51.4 %
Nitrogen	11.6 - 12.3 %	12.0 %
Purity (GC)	≥ 97.0 %	97.8 %
Solubility (Color)	Colorless to Faint Yellow	Colorless
Solubility (Turbidity) c = 5%; Water	Clear to Slightly Hazy	Clear
Optical Rotation No Rotation c = 5%; Water	≥ 0.0 deg	0.1 deg
Water (by Karl Fischer)	≤ 3.0 %	0.1 %
Arsenic (As)	≤ 3.0 ppm	< 1.0 ppm
Cadmium (Cd)	≤ 1.0 ppm	< 1.0 ppm
Mercury (Hg)	≤ 1.0 ppm	< 1.0 ppm
Lead (Pb)	≤ 10.0 ppm	< 1.0 ppm
Expiration Date Period 5 Years	-----	-----

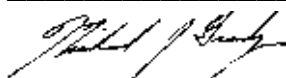
Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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Michael Grady, Manager
Quality Control
Milwaukee, WI US

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