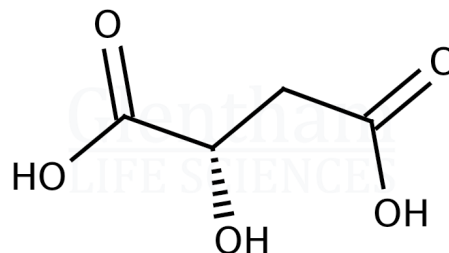


## Certificate of Analysis

Product Name L-(-)-Malic acid  
Glentham Code GK8399  
CAS Number 97-67-6  
EINECS 202-601-5  
MDL Number MFCD00064213  
PubChem SID 310275986  
Batch Number 453QZL

Molecular Weight 134.09  
Molecular Formula  $C_4H_6O_5$   
Storage Temp. +20°C



Property	Specification	Batch 453QZL
Physical Description	White to almost white powder or crystals	White powder
Solubility (10% in water)	Clear, colourless to very faintly turbid solution	Clear, colourless solution
Specific Optical Rotation ( $[\alpha]_{20/D}$ )	-5.0 - -8.0 ° (c=10, acetone)	-6.52°
Melting Point	101.0 - 104.0 °C	101.4 - 103.8 °C
Residue on Ignition	≤ 0.1%	0.04%
Water (KF)	≤ 0.5%	0.20%
Assay (Titration)	≥ 99.0%	99.3%

Specification Version v1.1  
Manufacture Date 2021-04-13  
Re-Test Date 2029-05-11

Glentham Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check [www.glentham.com](http://www.glentham.com) or contact us using the details above for the current version of this document.

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