



CERTIFICATE OF ANALYSIS

20 Martin Ross Avenue, North York, ON, M3J 2K8, CANADA
Tel: (416) 665-9696, Fax: (416) 665-4439
Email: orders.trc@lgcgroup.com Website: www.trc-canada.com

1. Identification

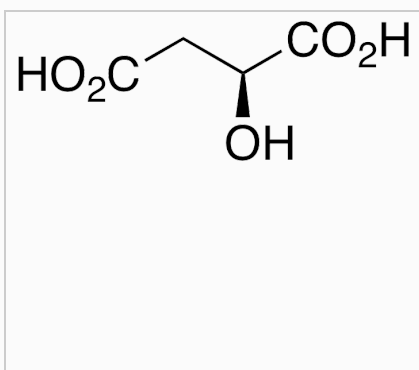
Catalogue Number: M159505

CAS Number: 97-67-6

Product: L-(-)-Malic Acid

Synonym: (2S)-2-Hydroxybutanedioic Acid; (-)-(S)-Malic Acid; (-)-Hydroxysuccinic Acid; (-)-L-Malic Acid; (-)-Malic Acid; (2S)-2-Hydroxybutanedioic Acid; (2S)-2-Hydroxy-

Structure:



Molecular Formula:

C₄H₆O₅

Molecular weight:

134.09

Source of Product:

N/A

Solubility:

DMSO (Slightly), Methanol (Slightly), Pyridine (Slightly)

Lot Number: 1-TIF-27-1

Purity: 98%

Shipping Condition: This Product Is Stable To Be Shipped At Room Temperature

Storage Condition: 20°C

2. Warning

Warning 1:

Warning 2:

Warning 3:

3. Analytical Information

Tests:	Specifications:	Results:
Appearance	White to Off-White Solid	White Solid
NMR	Conforms to Structure	Conforms
MS	Conforms to Structure	Conforms
HPLC Purity	Report Result	99.06% (ELSD)

Additional Information: N/A

Purity is based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of $\pm 2\%$. Isotopic purity is based on mass distribution observed. The contents of the specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.

4. Signatures

Reviewed By	Reviewed By	C of A Approved By	Test Date	Retest Date
Henry Tieu	Toni Rantanen	Chanell Chu	7/18/2023	7/16/2027