

Certificate of Analysis

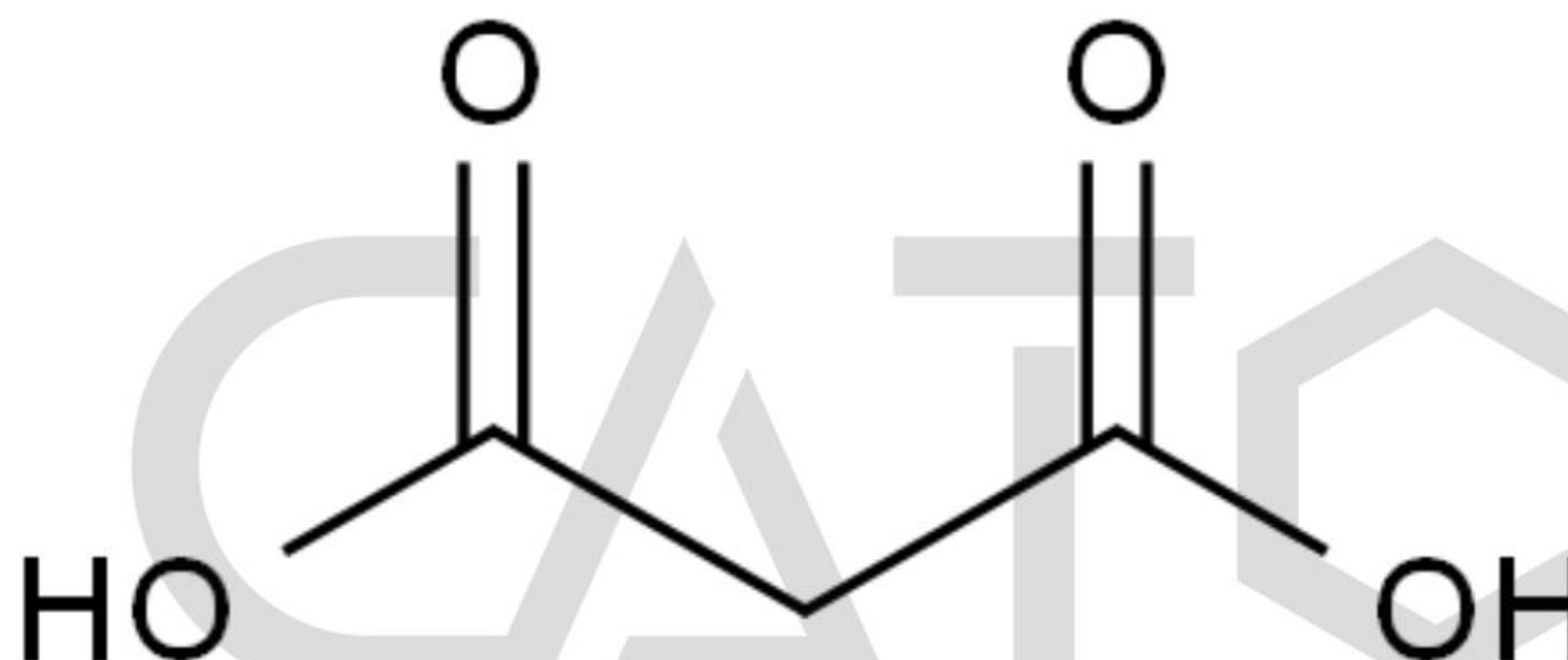
Reference Material & Standard

Product Name:	Malonic Acid	Catalogue Number:	CCEM500600
Synonyms:	N/A	Lot Number:	0619-RG-0079
CAS Number:	141-82-2	Expiry Date:	Jun 18, 2029
Molecular Formula:	C ₃ H ₄ O ₄	Storage:	Room Temp Protected from light and Sealed
Molecular Weight:	104.06	Shipping Condition:	Shipping at Room Temperature

Warning:



Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White Solid
Identification	LCMS&IR&UV&CNMR&HNMR	Confirmed
Purity	HPLC	99.453%
Water Content	Karl Fischer	0.5979%
Assay		98.9%
Uncertainty		±0.4%

Comment:

1. The calculation of the mass balance method follows the formula (calculated on the non-dried basis):

$\text{Assay (\%)} = (100\% - \text{Water Content}) * \text{Purity HPLC (\%)} / 100\%$

Water Content is considered as absolute effect, HPLC 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:

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Date: Dec 24, 2025

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