



CERTIFICATE OF ANALYSIS

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1. Identification

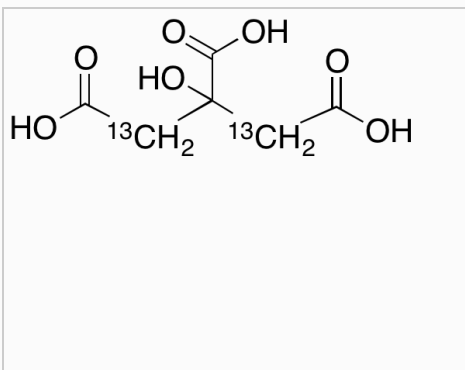
Catalogue Number: C521060

CAS Number: 121633-50-9

Product: Citric acid-2,4-13C2

Synonym: 2-Hydroxy-1,2,3-propane-1,3-13C2-tricarboxylic Acid;

Structure:



Molecular Formula:

$C_4^{13}C_2H_8O_7$

Molecular weight:

194.11

Source of Product:

N/A

Solubility:

DMSO (Slightly), Methanol (Slightly)

Lot Number: 20-JPO-187-1

Purity: 94%

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

Storage Condition: 4°C

2. Warning

Warning 1:

Warning 2:

Warning 3:

3. Analytical Information

Tests:	Specifications:	Results:
Appearance	White to Pale Beige Solid	Off-White to Pale Yellow Solid
NMR	Conforms to Structure	Conforms
C NMR	Conforms to Structure	Conforms
HPLC Purity	Report Result	94.02% (ELSD)
MS	Conforms to Structure	Conforms
Isotopic Purity	>95%	99.0% (d0 = 0.25%)
Elemental Analysis	Conforms	%C: 37.08, %H: 3.92

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
Evan Burns	Toni Rantanen	Chanell Chu	9/23/2021	9/21/2025