

Certificate of Analysis

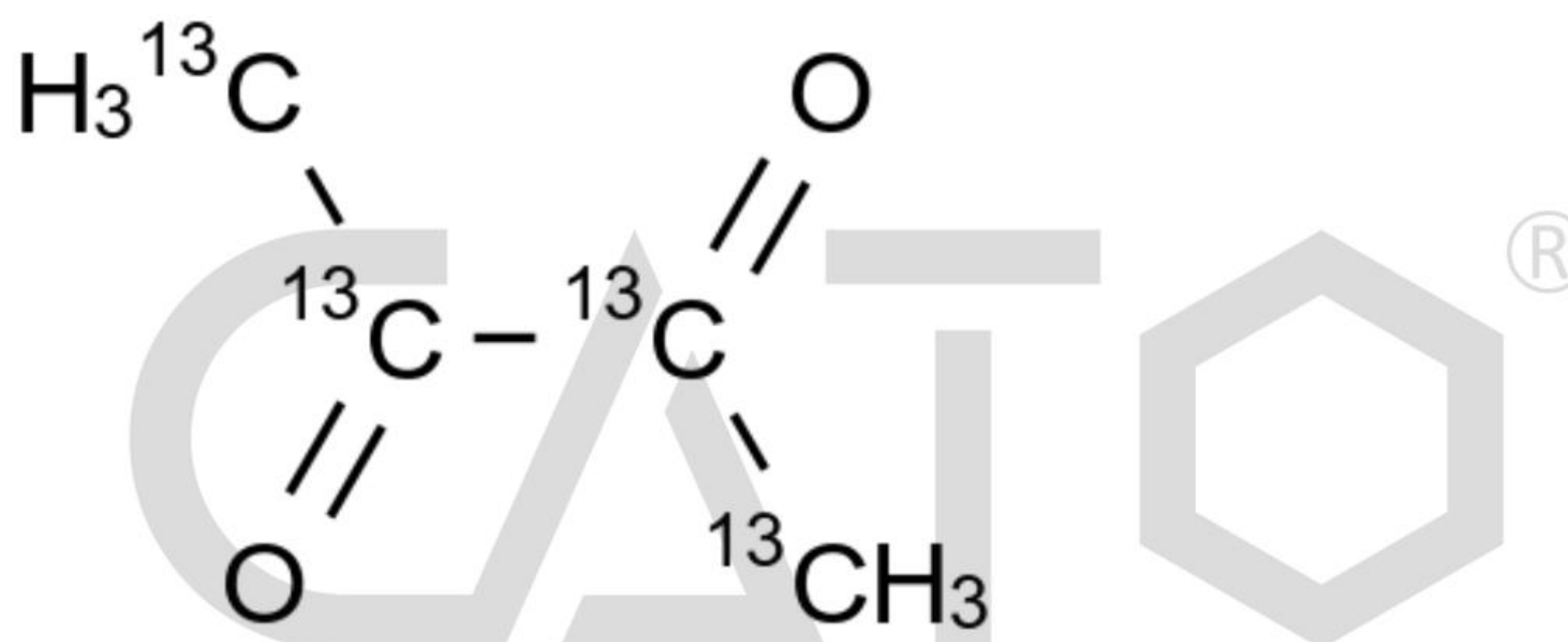
Reference Material & Standard

Product Name:	2,3-Butanedione-13C4 (in Methanol)	Catalogue Number:	C1050151
Synonyms:	N/A	Lot Number:	0617-RH-0077
CAS Number:	1083053-33-1	Expiry Date:	Apr 19, 2030
Molecular Formula:	[13C] ₄ H ₆ O ₂	Storage:	-20°C±5°C Protected from light and Sealed
Molecular Weight:	90.06	Shipping Condition:	Shipping with Ice Packs

Warning:



Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Yellow Liquid
Identification	LCMS	Confirmed
Purity	GC	89.0%
Uncertainty		±2.2%

Comment:

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:

Prepared by:

Lisa

Reviewed by:

Hin Lam

Approved by General Manager:

David

Date: Jun 23, 2026

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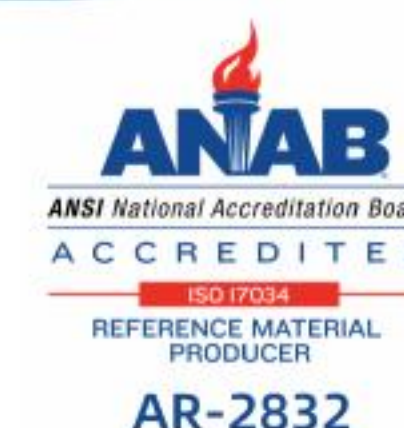
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