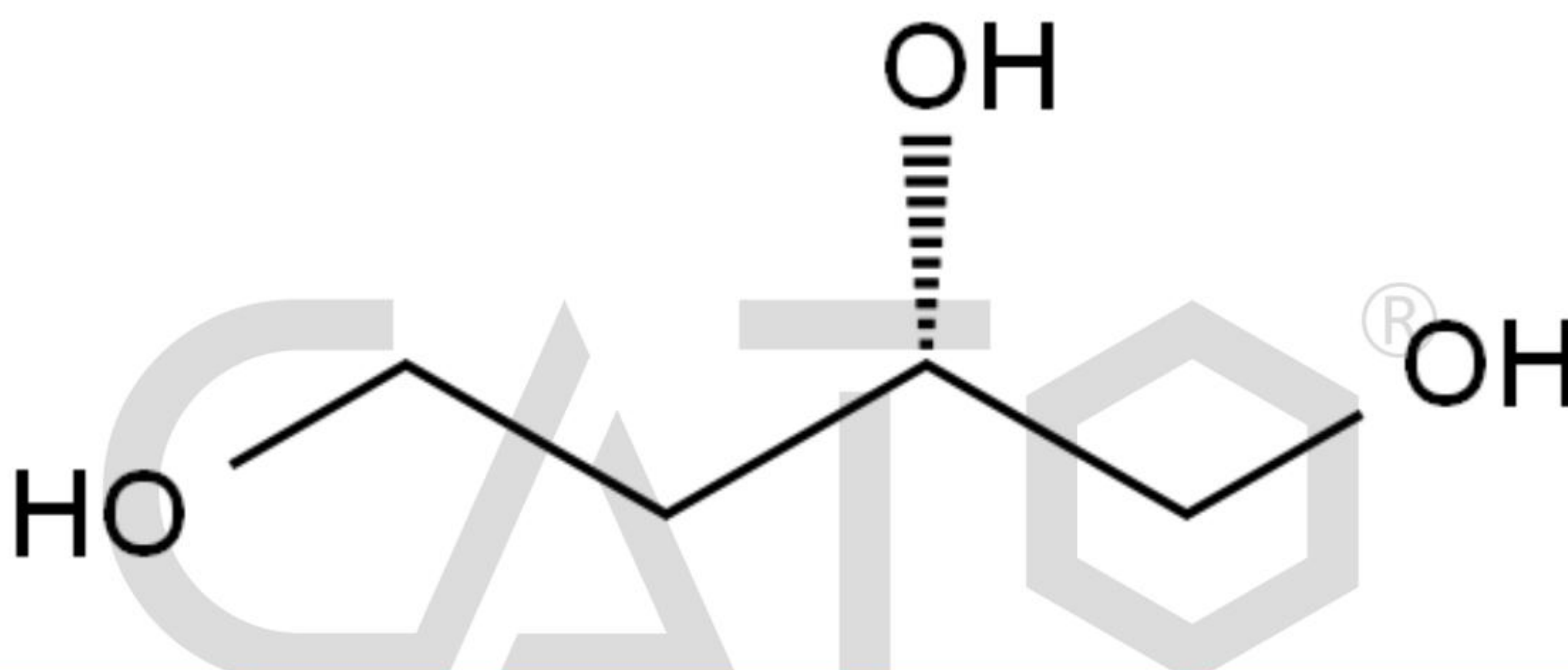


Certificate of Analysis

Reference Material & Standard

Product Name:	(S)-(-)-1,2,4-Butanetriol	Catalogue Number:	CCHM704082
Synonyms:	N/A	Lot Number:	0330-RH-0074
CAS Number:	42890-76-6	Expiry Date:	Mar 29, 2030
Molecular Formula:	C ₄ H ₁₀ O ₃	Storage:	2°C ~ 8°C Protected from light and Sealed
Molecular Weight:	106.12	Shipping Condition:	Shipping at Room Temperature

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Colourless Liquid
Identification	GCMS&HNMR	Confirmed
Purity	GC	99.805%
Water Content	Karl Fischer	12.7141%
Assay		87.1%
Uncertainty		±1.4%

Comment:

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

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

Water Content is considered as absolute effect, GC purity is considered as relative effect.
- 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:

Hinlam

Approved by General Manager:

David

Date: Mar 30, 2026

Date: Mar 30, 2026

Date: Mar 30, 2026

