

Certificate of Analysis

Reference Material & Standard

Product Name:	(S)-(-)-Limonene	Catalogue Number:	CCFD200003
Synonyms:	N/A	Lot Number:	0821-RG-0067
CAS Number:	5989-54-8	Expiry Date:	Aug 20, 2029
Molecular Formula:	C ₁₀ H ₁₆	Storage:	2°C ~ 8°C Protected from light and Sealed
Molecular Weight:	136.23		

Warning:



Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Colourless Liquid
Identification	GCMS&CNMR&HNMR	Confirmed
Purity	GC	98.303%
Water Content	Karl Fischer	0.3448%
Assay		98.0%
Uncertainty		±0.4%

Comment:

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

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

Water Content is considered as absolute effect, GC 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:

Prepared by:

Lisa

Reviewed by:

Hin Lam

Approved by General Manager:

David

Date: Aug 21, 2025

Date: Aug 22, 2025

Date: Aug 22, 2025



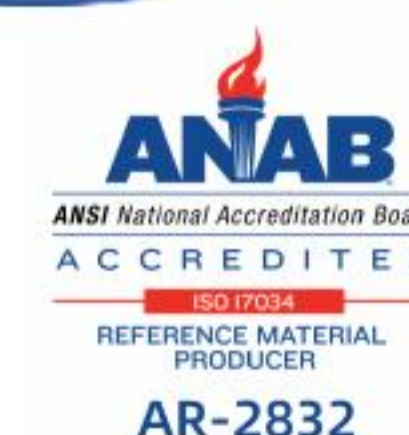
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