

Certificate of Analysis

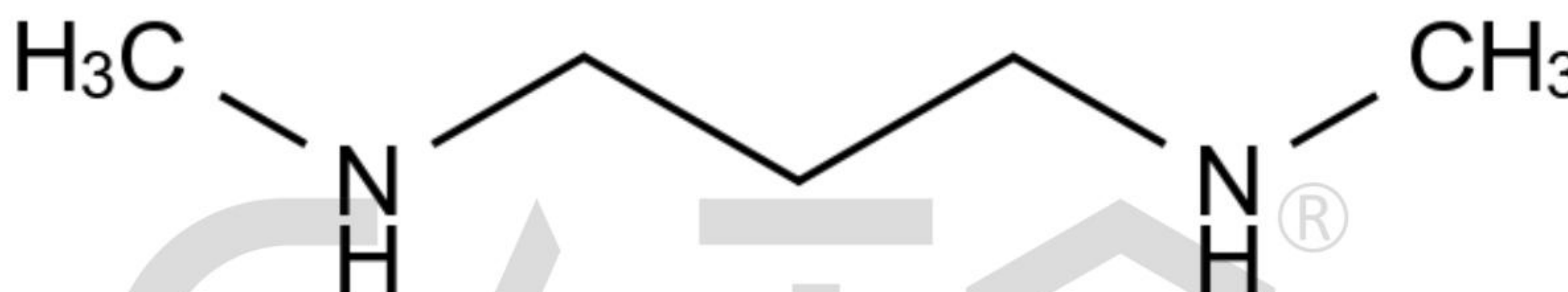
Reference Material & Standard

Product Name:	N,N'-Dimethyl-1,3-propylenediamine	Catalogue Number:	C1062219
Synonyms:	N/A	Lot Number:	0717-RH-0047
CAS Number:	111-33-1	Expiry Date:	Jul 20, 2029
Molecular Formula:	C ₅ H ₁₄ N ₂	Storage:	-20°C±5°C Protected from light and Sealed
Molecular Weight:	102.18	Shipping Condition:	Shipping with Ice Packs

Warning:



Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Colourless Liquid
Identification	GCMS&HNMR	Confirmed
Purity	GC	99.100%
Water Content	Karl Fischer	0.9746%
Assay		98.1%
Uncertainty		±0.3%

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:

Nice

Reviewed by:

Koi

Approved by General Manager:

David

Date: Jul 21, 2026

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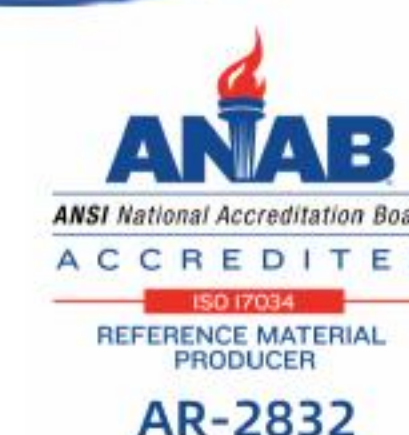
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