CATO Research Chemicals Inc.

Make the Tests More Accurate

ISO 17034 : 2016 | ISO 9001 : 2015

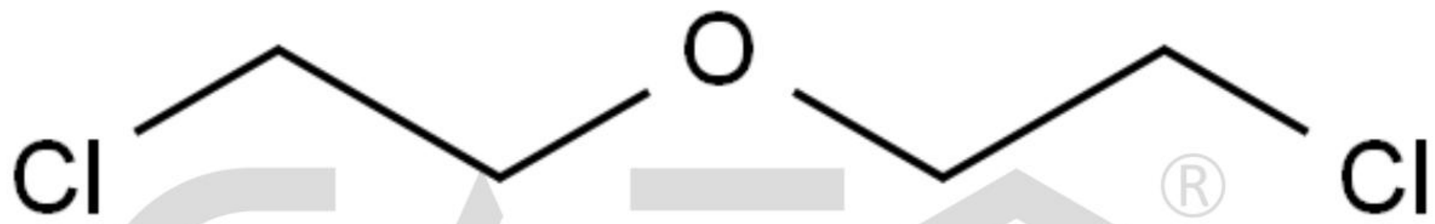
No.: 202511070036

Certificate of Analysis

Reference Material & Standard

Product Name:	Bis-(2-Chloroethyl)Ether	**Catalogue Number:**	CCEM500459
Synonyms:	N/A	**Lot Number:**	1111-RG-0008
CAS Number:	111-44-4	**Expiry Date:**	Nov 09, 2029
Molecular Formula:	$C_4H_8Cl_2O$	**Storage:**	Room Temp Protected from light and Sealed
Molecular Weight:	143.01	**Shipping Condition:**	Shipping at Room Temperature
		Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Colourless Liquid
Identification	GCMS&HNMR	Confirmed
Purity	GC	100.000%
Water Content	Karl Fischer	0.7830%
Assay		99.2%
Uncertainty		±0.2%

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Comment:

1. The calculation of the mass balance method follows the formula (calculated on the non-dried basis):
*Assay (%) = (100%-Water Content) * 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: Alice Date: Nov 10, 2025

Reviewed by: Hinlam Date: Nov 11, 2025

Approved by General Manager: David Date: Nov 11, 2025

CATO Research Chemicals Inc.

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ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER AR-2832

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