

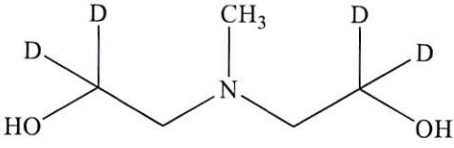
## Certificate of Analysis

Certificate No.: **20260617013**

Date: June 17, 2026



Retest date: June 12, 2029

<b>Compound Name:</b> N-Methyl Diethanolamine-d <sub>4</sub>	
<b>Synonyms:</b>	2,2'-(methylazanediyl)bis(ethan-1,1-d <sub>2</sub> -1-ol)
<b>TLC Catalogue Number:</b>	E-184018
<b>CAS Number:</b>	53484-71-2
<b>Alternate CAS Number:</b>	105-59-9 (non-labelled)
<b>Molecular Weight:</b>	123.19
<b>Molecular Formula:</b>	C <sub>5</sub> H <sub>9</sub> D <sub>4</sub> NO <sub>2</sub>
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	7446-039A4
<b>Storage Conditions:</b>	Store at 2-8 °C
<b>Solubility:</b>	Methanol, DMSO, Acetonitrile



The chemical structure shows a central nitrogen atom bonded to a methyl group (CH<sub>3</sub>) and two ethyl chains. Each ethyl chain has a hydroxyl group (OH) at the end. The alpha carbons of both ethyl chains are labeled with 'D', indicating deuterium substitution.

Test Description	Specifications	Results
<b>Visual Description</b>	Colorless liquid	<b>Conforms</b>
<b>Identification</b>		
IR	Conforms to structure	<b>Conforms</b>
MS	Conforms to structure	<b>Conforms</b>
<sup>1</sup> H NMR	Conforms to structure	<b>Conforms</b>
<b>Purity (HPLC)</b>	Not less than 95.0%	<b>100.0%</b>
<b>Impurity (HPLC)</b>	N/A	
<b>Isotopic Enrichment</b>	Not less than 98.0%	<b>99.5%</b>
<b>Water Content (KF)</b>	N/A	<b>2.3%</b>
<b>Residual Solvents (NMR)</b>	1.7% methanol	
<b>Assay (%)</b>	Not less than 90.0%	<b>96.0%</b>
<b>Recommendation:</b>	<b>Release.</b>	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		06/17/2026
Approved by:	Quality Assurance		06/17/2026

**Attachments:** Peak Attribution Table, Assay Calculation, HPLC, IR, MS and NMR spectra.