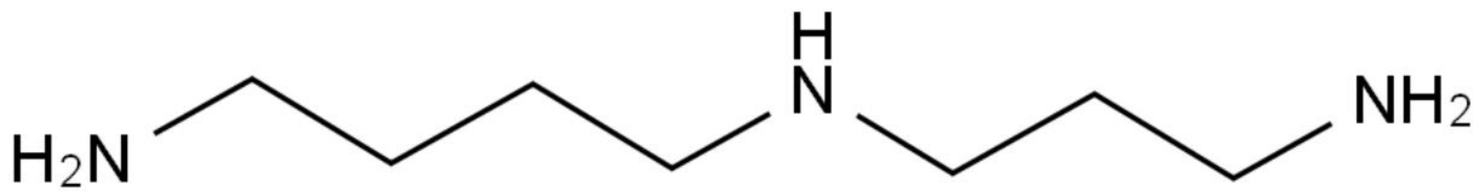
Certificate of Analysis

Reference Material & Standard

Product Name:	Spermidine	**Catalogue Number:**	CCHM700696
Synonyms:	N/A	**Lot Number:**	1110-RH-0054
CAS Number:	124-20-9	**Expiry Date:**	Nov 11, 2030
Molecular Formula:	$C_7H_{19}N_3$	**Storage:**	2°C ~ 8°C Protected from light and Sealed
Molecular Weight:	145.25	**Shipping Condition:**	Shipping at Room Temperature
		Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Colourless Low-Melting Solid
Identification	LCMS&HNMR	Confirmed
Purity	ELSD	100.000%
Water Content	Karl Fischer	2.2630%
Assay	Mass Balance	97.7%
Uncertainty		±0.3%

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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 ELSD (%) /100%*
Water Content is considered as absolute effect, ELSD 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 12, 2026

Reviewed by: Lisa Date: Nov 12, 2026

Approved by General Manager: David Date: Nov 12, 2026

CATO Research Chemicals Inc.