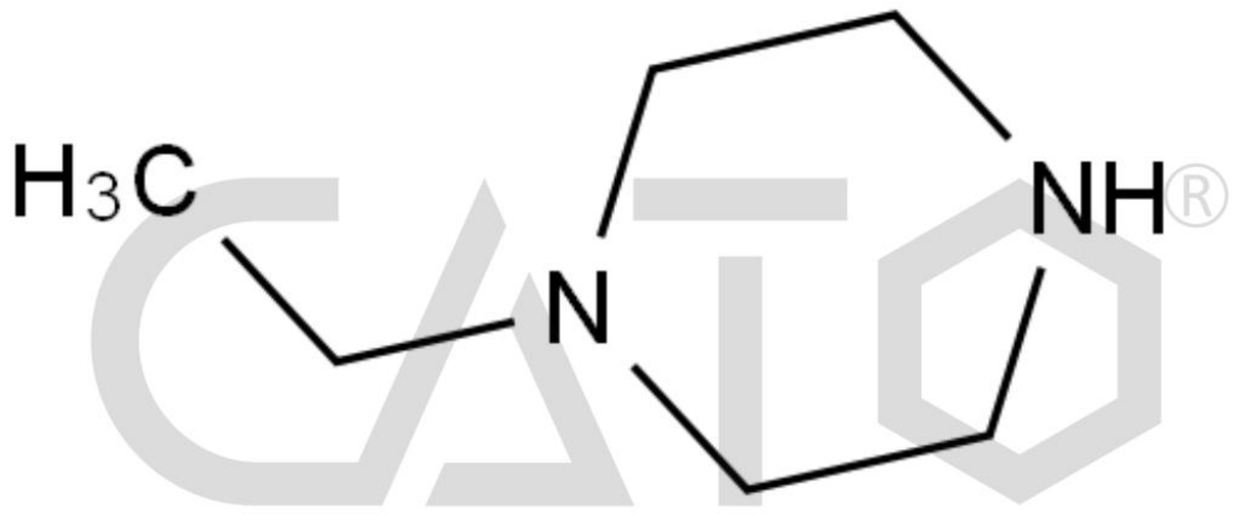
Certificate of Analysis

Reference Material & Standard

Product Name:	1-Ethylpiperazine	**Catalogue Number:**	CCAD300589
Synonyms:	N/A	**Lot Number:**	0921-RH-0044
CAS Number:	5308-25-8	**Expiry Date:**	Sep 22, 2030
Molecular Formula:	$C_6H_{14}N_2$	**Storage:**	Room Temp Protected from light and Sealed
Molecular Weight:	114.19	**Shipping Condition:**	Shipping at Room Temperature
		Warning:	

Chemical Structure:



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Test Items	Method	Results
Appearance	Visual inspection	Colourless Liquid
Identification	GCMS&HNMR	Confirmed
Purity	GC	100.000%
Water Content	Karl Fischer	0.4253%
Assay		99.6%
Uncertainty		±0.2%

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: Sep 23, 2026

Reviewed by: Lisa Date: Sep 24, 2026

Approved by General Manager: David Date: Sep 24, 2026

CATO Research Chemicals Inc.