



Mikromol™



Certificate of Analysis

Reference Material

Product name

Cyclizine N-Oxide Dihydrochloride

Product code

MM1265.04-0025

CAS number

not listed

Molecular weight

355.30

Molecular formula

C₁₈H₂₂N₂O · 2HCl

Lot number

1145277

Appearance

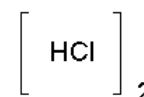
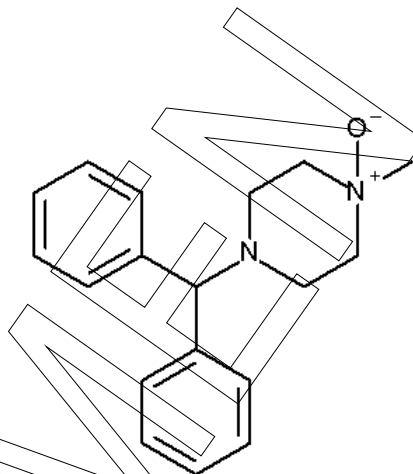
light beige solid

Melting point

124 °C (dec)

Long-term storage

2 to 8 °C, dark



Assay "as is"
88.3 %

Date of shipment:

14 Oct 2022

Producer confirms that this reference material (RM) meets the specification detailed on this Certificate of Analysis for **one year** from the date of shipment, provided the substance is stored under the recommended conditions unopened in the original container.

Release by:	Date of Release:		Product Release
Dr. Sabine Schröder	Luckenwalde, 16 Jun 2021		



MikromolTM

Product information

For laboratory use only. Not suitable for human or animal consumption.

Before usage of the RM, it should be allowed to warm to room temperature. No drying required, as the certified value is already corrected for the content of water and other volatile materials.

The product quality is controlled by regularly performed quality control tests (retests).

Further content

Identity

Assay

Final result

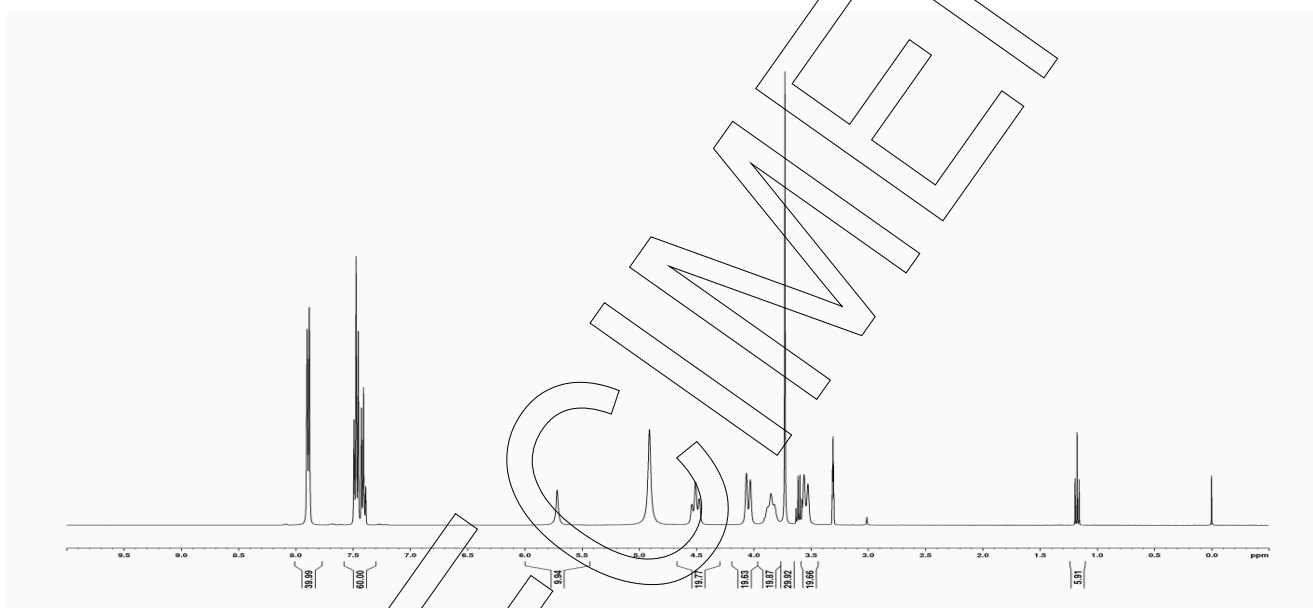
Revision table

SPECIMEN

Identity

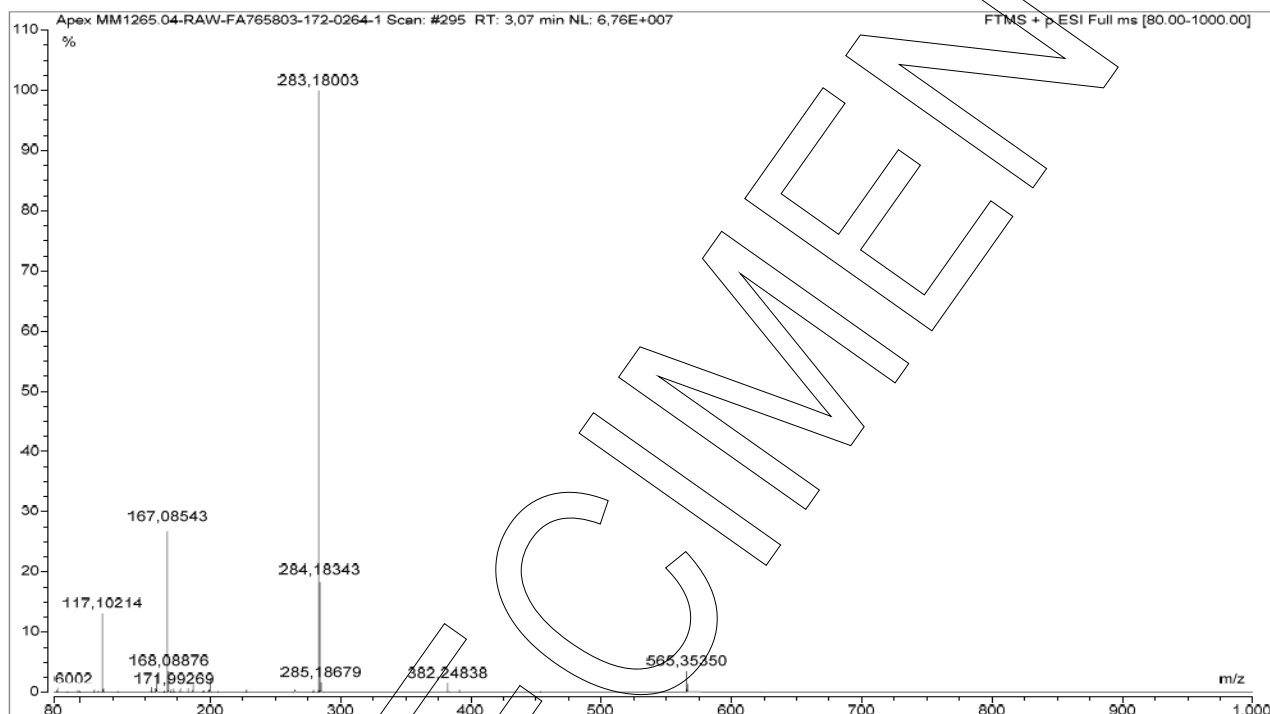
The identity of the reference material was established by following analyses.

Method	Conditions	Result
¹ H-NMR	400 MHz, CD ₃ OD	Structure confirmed



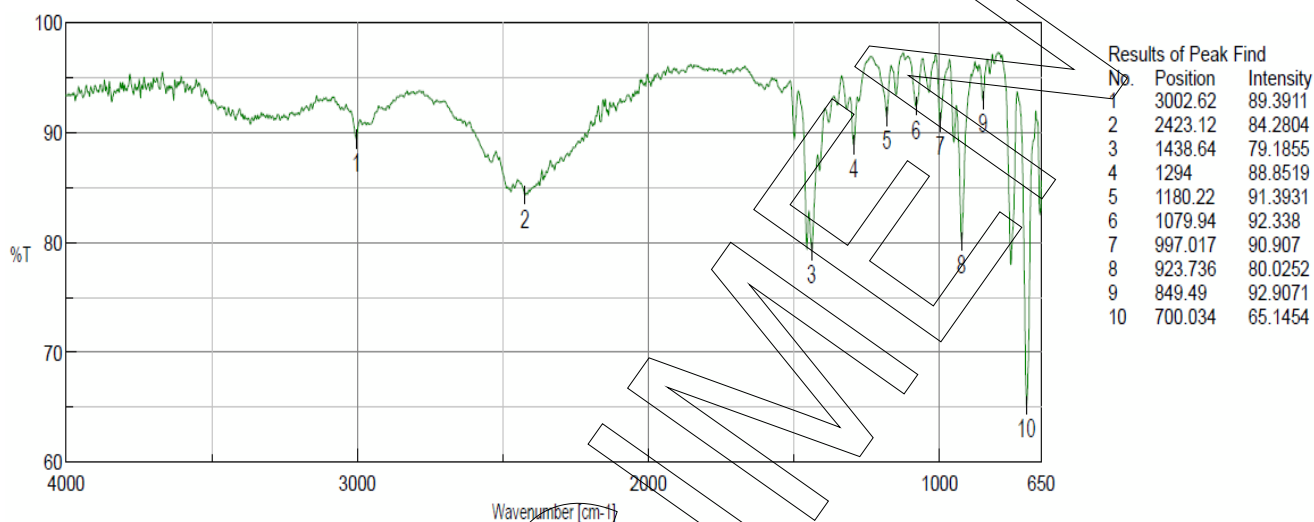


Method	Conditions	Result
MS	3.5 kV ESI+; capillary temperature: 269 °C Theoretical value: 283.18049	Structure confirmed





Method	Conditions	Result
IR	Attenuated Total Reflection Fourier Transform Infrared (ATR-FTIR) Spectroscopy	Structure confirmed



Assay

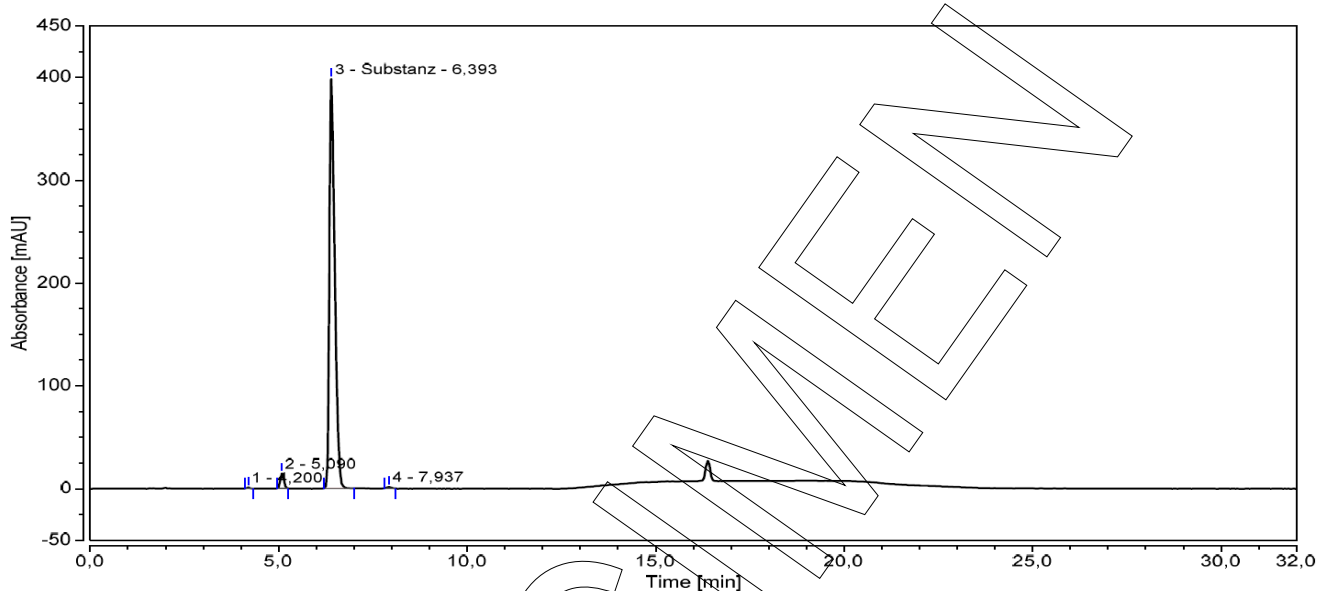
The assay of the reference material was assessed by following analyses.

Purity by High Performance Liquid Chromatography (HPLC)

HPLC Conditions:	
Column	Hypersil Gold C18; 5 µm, 150 x 4.6 mm
Column temperature	40 °C
Detector	DAD, 225 nm
Injector	Auto 2 µl; 0.266 mg/ml in Acetonitrile/Water 50/50 (v/v)
Flow rate	1.0 ml/min
Phase A	Water, 0.1 % H ₃ PO ₄
Phase B	Acetonitrile, 0.1 % H ₃ PO ₄
Gradient program	0-9 min A/B 70/30 9-12 min A/B to 20/80 12-17 min A/B 20/80 17-20 min A/B to 70/30 20-32 min A/B 70/30 (v/v)



HPLC chromatogram and peak table



Area percent report - sorted by signal

Pk #	Retention time	Area	Area %	
1	4.200	0.118	0.17	
2	5.090	1.594	2.35	
3	6.393	65.955	97.16	
4	7.937	0.216	0.32	
Totals		67.883	100.00	

The content of the analyte was determined as ratio of the peak area of the analyte and the cumulative areas of the purities, added up to 100 %. System peaks were ignored in calculation.

Result (n = 3)

97.16 %; SD < 0.01 %



Volatile content

Water content	
Method	Karl Fischer titration
Result (n = 3)	6.62 %; SD = 0.11 %

Residual solvents	
Method	¹ H-NMR
Result (n = 1)	Sum: 2.49 % 2.49 % Ethanol

Final result

Assay "as is": **88.31 %**

The assay "as is" is assessed by 100% method (mass-balance) and is equivalent to the assay based on the not anhydrous and not dried substance respectively.

The calculation of the 100% method follows the formula:

$$\text{Assay (\%)} = (100 \% - \text{volatile contents (\%)}) * \frac{\text{Purity (\%)}}{100 \%}$$

Volatile contents are considered as absolute contributions and purity is considered as relative contribution. Inorganic residues are excluded by additional tests.

Revision table

Revision	Date	Reason for revision
00	16 Jun 2021	Release of the Certificate of Analysis - initial version

Product warranties for the RM are set out in the terms and conditions of purchase.