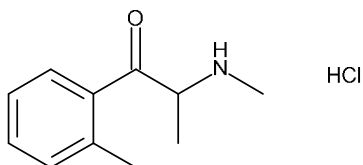


Certificate of Analysis Reference Material

Product name:	2-MMC HCl (2-Methylmethcathinone Hydrochloride)		
Lot number:	1640571		
Product code:	LPM-MMC-2314-HC	Last testing date:	n/a
Long-term storage:	2 to 8 °C, dark	Retest date:	January 2031



CAS number:	1246815-51-9		
Molecular formula:	C ₁₁ H ₁₅ NO HCl (salt)	Molecular formula:	C ₁₁ H ₁₅ NO (free base)
Molecular weight:	213.70 (salt)	Molecular weight:	177.24 (free base)

Assigned Value		Specification
Purity	99.59 %, SD ± 0.03 %	> 98.5 %
The purity is calculated from the distribution of 6 HPLC analyses.		
Free base content (Corrected from purity, water and residual solvent, if present)	82.60 %	> 80.0 %

FOR ANALYTICAL PURPOSES ONLY: NOT FOR HUMAN OR ANIMAL USE!

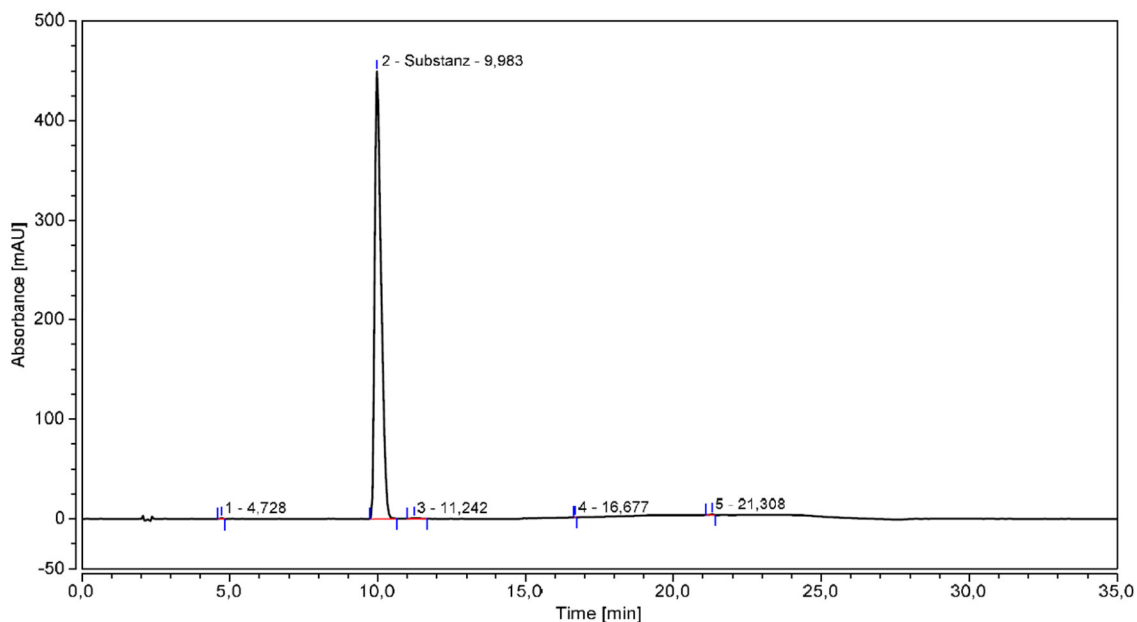
Producer confirms that this standard meets the specification stated in this certificate of analysis and warrants this product to meet the stated acceptance criteria through the retest date when stored unopened as recommended.

Release by:	Date of Release:		Product Release
Dr. Sabine Schröder	Luckenwalde, 20 May 2026		

Supportive Data

Test	Specification	Result
Appearance	white solid	conforms
Identity by melting point (DSC)	185 ± 5 °C	184 °C
Identity by NMR	corresponds to structure	conforms
Identity by IR	corresponds to structure	conforms
Identity by Mass Spectrometry	corresponds to structure	conforms
Purity (HPLC)	> 98.5 %	99.59 %
Water content	< 0.5 %	< 0.05 %
Residual solvent (GC)	< 0.3 %	< 0.05 %
Calculated content 100% Method ("as is")	> 95.0 %	99.59 %

HPLC Data:



HPLC Conditions:			
Column:	Conditions:	Detector:	Injector:
Hypersil Gold C18	1.0 ml/min, 40 °C	DAD	Auto
5 µm, 150 x 4.6 mm	0-12 min Water/Acetonitrile 90/10 12-17 min Water/Acetonitrile to 50/50 17-22 min Water/Acetonitrile 50/50 22-25 min Water/Acetonitrile to 90/10 25-35 min Water/ Acetonitrile 90/10 (v/v); 0.1% H ₃ PO ₄	250 nm	2 µl; 0.232 mg/ml in Methanol

Pk #	Time (min)	Area	Area %
1	4.728	0.089	0.08
2	9.983	114.644	99.60
3	11.242	0.257	0.22
4	16.677	0.008	0.01
5	21.308	0.103	0.09
Totals		115.102	100.00

Document history

Revision	Date	Reason for Revision
00	20 May 2026	Release of the Certificate of Analysis – initial version

GENERAL INFORMATION

Quality documentation:

This certificate of analysis is designed in accordance with ISO 33401 (Reference materials — Contents of certificates, labels and accompanying documentation).

Quality standards:

ISO 9001 Quality management system. Development, production, analysis and distribution of reference materials: DQS 102448

Quality control assessment:

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

Intended use:

The product covered by this certificate of analysis is designed for use in quality control procedures for the specified chemical compound listed on page 1. This product can be used for quantification and/or identification.

Retest dates:

Retest date of the unopened unit stored at the recommended storage condition is the last day of the month listed on page 1.

A retest is performed 6 months prior to the stated retest date if the batch is available for sale. Upon successful retesting, a new retest date or expiration date is set for the product. The certificate of analysis is then updated and made available on our web site.

Metrological traceability:

All balances are calibrated annually by an accredited calibration service. Calibration verification is performed regularly with certified traceable weights. Each balance has been assigned a minimum weighing.

Purity:

- Purity and/or chemical identity are determined by one or more of the following techniques: HPLC, GC, LCMS, IR, UV, NMR, Karl Fischer titration, melting point and optical rotation if applicable.
- Purity of isomeric compounds is reported as the sum of the isomers.
- All values are rounded to the last decimal place given.

Stability:

The manufacturer guarantees the stability through the date stated on page 1 of the certificate of analysis when handled and stored according to the conditions stated on page 1.

Handling:

Before usage of the product, it should be allowed to warm to room temperature. For long-term storage please refer to page 1.

Legal notice and limit of liability:

This product is for routine laboratory analysis and research purposes only. Due to the hazardous nature, only trained personnel should handle this product. Please refer to the safety data sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.