

Certificate of Analysis



ISO 17034 Reference Material

Product Identification

Article Code: DRE-C12786500

Article Name: 3,4-Dinitrotoluene

Formula: C₇H₆N₂O₄

Mol. Weight: 182.13

CAS No.: 610-39-9

Lot Number: G979834

Expiry Date: 09.10.2024

Storage Temperature: 20°C ± 4°C

Storage and handling: The RM should be stored in the original sealed bottle at the temperature given above. After use the bottle should be tightly closed and protected from moisture.

Purity: 99.13% (g/g)

Expanded Uncertainty U= 0.30% (g/g)

The uncertainty of this standard is calculated in accordance with the ISO 17034 and EURACHEM/CITAC Guide - Quantifying Uncertainty in Analytical Measurement, Second Edition. The expanded uncertainty is $U(\text{exp}) = u(\text{RM}) \times k$, where k is the coverage factor at the 95% confidence level ($k=2$). Uncertainty $u(\text{RM})$ is based on the combination of the uncertainties associated with each individual operation involved in the analysis of the product: $u(\text{RM}) = \sqrt{u(\text{char})^2 + u(\text{bb})^2 + u(\text{Its})^2 + u(\text{sts})^2}$; $u(\text{char})$ is the uncertainty of characterisation; $u(\text{bb})$ uncertainty of homogeneity test; $u(\text{Its})$ uncertainty of stability test long-term; $u(\text{sts})$ uncertainty of stability test short-term. $u(\text{Its})$ and $u(\text{sts})$ are not included in the calculation as the stability statement is based on real evidence opposed to simulation.

Minimum sample: 1 mg is recommended as the minimal sample amount. If less material is used, it is recommended to increase the certified uncertainty by a factor of two for half sample and a factor of four for a quarter of sample.

Intended use: Use this RM as calibrant for chromatography or any other analytical technique.

Analytical Data

Traceability of chromatography: To the International System of Units (SI).

Instrument: HPLC/DAD

Detection: DAD

Column: ReproSil 100 C18 5 µm 250 x 3 mm

Inj.-Vol.: 10 µl

Flow: 1.0 ml/min

Ret. Time: 12.87 min

Method Details

Eluent A: Acetonitrile:H₂O+0.5% H₃PO₄ 1:9 for 1 min

Eluent B: Acetonitrile:100% for 5 min

Eluent A -> Eluent B: 19 min

Comment

Traceability: The balances used are calibrated with weights traceable to the national standards (DKD).

Calibrated class A glassware is used for volumetric measurements.

Water Content: 0.17% (g/g) by Karl-Fischer-Titration ($U(\text{exp}) = 0.09\%$ (g/g)).

Purity was determined by chromatographic assay, corrected by water content and/or residue solvents.

Identity: EA, NMR, RT, IR, UV

Attachment: Exemplary chromatogram of given method

Certificate Revision 1 - 09.10.2018 - M. Beck

Certified on: 09.10.2018

Certified by: M. Beck

RM Release

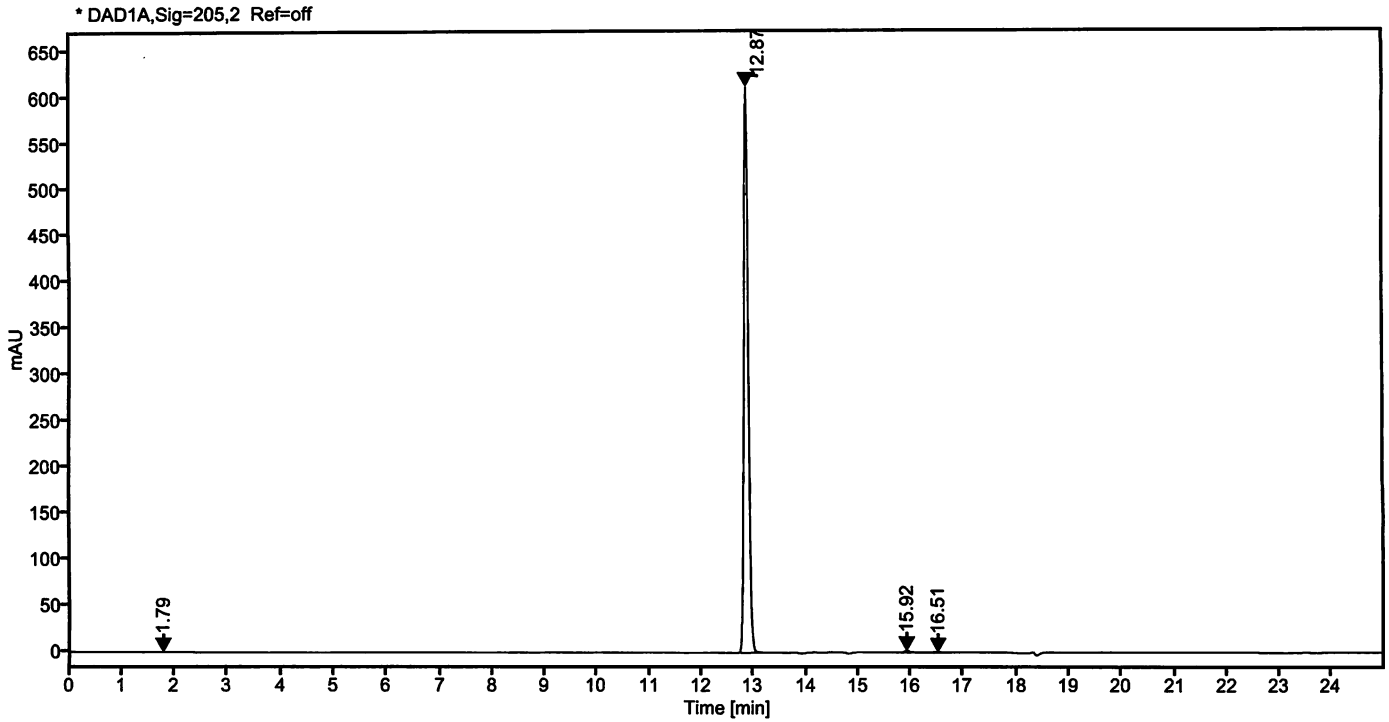
The LGC Labor GmbH, accredited by DAkS as indicated by the accreditation number D-RM-19883-01 & D-PL-19883-01, has shown competence based on ISO 17034:2017 with relevant parts of DIN EN ISO/IEC 17025:2018 for production of certified reference materials in form of organic pure substances and in form of single and multi-component solutions of organic pure substances.

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The warranty for this product is limited to the purchasing price of this product.

9-18-2018

Data file: 12786500-03-r001.dx Instrument: DAD5
Sample name: 80917AL G979834 Sequence Name: 17092018-2
Inj. volume [µl]: 10.0 Injection date: 9/18/2018 3:13:16 AM
Acq. method: S1_Gradient_10-100_PK.amx Location: P2-B5

Sample Description 3,4-Dinitrotoluene



Signal: * DAD1A,Sig=205,2 Ref=off

Nr.	RT [min]	Area	Height	Area%
1	1.79	2.49796	0.45	0.07
2	12.87	3516.12503	611.58	99.44
3	15.92	12.76080	2.24	0.36
4	16.51	4.45398	0.56	0.13
	Sum	3535.84		