

Certificate of Analysis



ISO 17034 Reference Material

Product Identification

Article Code: DRE-C12870000
Article Name: Dioxathion
Formula: C₁₂H₂₆O₆P₂S₄
Mol. Weight: 456.54
CAS No.: 78-34-2

Lot Number: G992365
Expiry Date: 29.11.2024
Storage Temperature: 4°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: 99.60% (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: | UHPLC/DAD | Method Details | | |
| Detection: | DAD | Eluent A: WA | | |
| Column: | LUNA Omega C18 1.6 µm 100 x 2.1 mm | Eluent B: Acetonitrile | | |
| Inj.-Vol.: | 2 µl | | | |
| Flow: | 0.5 ml/min | Time[min] | Eluent A [%] | Eluent B [%] |
| Ret.Time: | | 0 | 90 | 10 |
| | | 0.3 | 90 | 10 |
| | | 8 | 0 | 100 |
| | | 9.5 | 0 | 100 |
| | | 10 | 90 | 10 |

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: 0.11% (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
May decompose to Phosphorodithioic acid, O,O-diethyl S-(5,6-dihydro-1,4-dioxin-2-yl) ester during GC analysis
Certificate Revision 1 - 29.11.2018 - M. Beck

Certified on: 29.11.2018
Certified by: M. Beck
RM Release

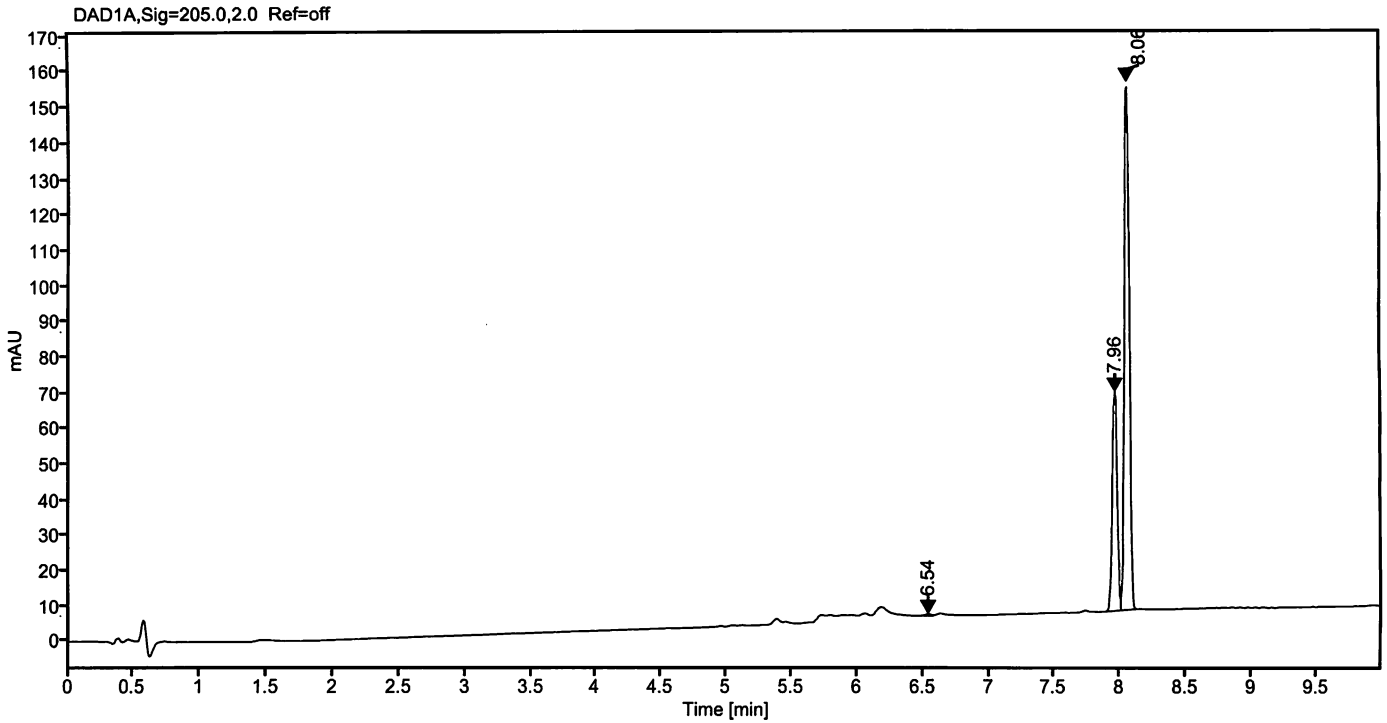
The LGC Labor GmbH, accredited by DAkkS as indicated by the accreditation number D-RM-19883-01 & D-PL-19883-01, has shown competence based on ISO 17034:2017 with relevant parts of DIN EN ISO/IEC 17025:2018 for production of certified reference materials in form of organic pure substances and in form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

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Data file: 12870000-07.dx Instrument: UHPLC 2
Sample name: 81122AL G992365 Sequence Name: 27112018-UH2
Inj. volume [µl]: 2.0 Injection date: 11/27/2018 6:44:33 PM
Acq. method: Gradient_10-100.amx Location: D1B-A4

Sample Description: Dioxathion



Signal: DAD1A,Sig=205.0,2.0 Ref=off

| Nr. | RT [min] | Area | Height | Area% |
|-----|----------|-----------|--------|-------|
| 1 | 6.54 | 1.53077 | 0.51 | 0.28 |
| 2 | 7.96 | 163.22584 | 61.44 | 29.33 |
| 3 | 8.06 | 391.69154 | 147.96 | 70.39 |
| | Sum | 556.45 | | |

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