

Certificate of Analysis

**EHRENSTORFER™**

ISO Guide 34 Reference Material

Product Identification

Article Code: DRE-C16986101**Article Name:** Sudan 1**Formula:** C₁₆H₁₂N₂O**Mol. Weight:** 248.28**CAS No.:** 842-07-9**Lot Number:**

G170606

Expiry Date:

01.03.2023

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: 99.64% (g/g)**Expanded Uncertainty U=** 0.50% (g/g)

The uncertainty of this standard is calculated in accordance with the ISO Guide 34 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 + 0.5% H₃PO₄**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 [%]
0	90	10
0.3	90	10
8	0	100
9.5	0	100
10	90	10

Ret. Time: 7.74 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: <0.10% (g/g) by Karl-Fischer-Titration ($U(\text{exp}) = 0.03\%$ (g/g)).

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

Identity: EA, NMR, RT, IR, UV

Certificate Revision 1 - 18.06.2018 - M. Beck

Certified on: 18.06.2018**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 Guide 34:2009 with relevant parts of DIN EN ISO/IEC 17025:2005 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.

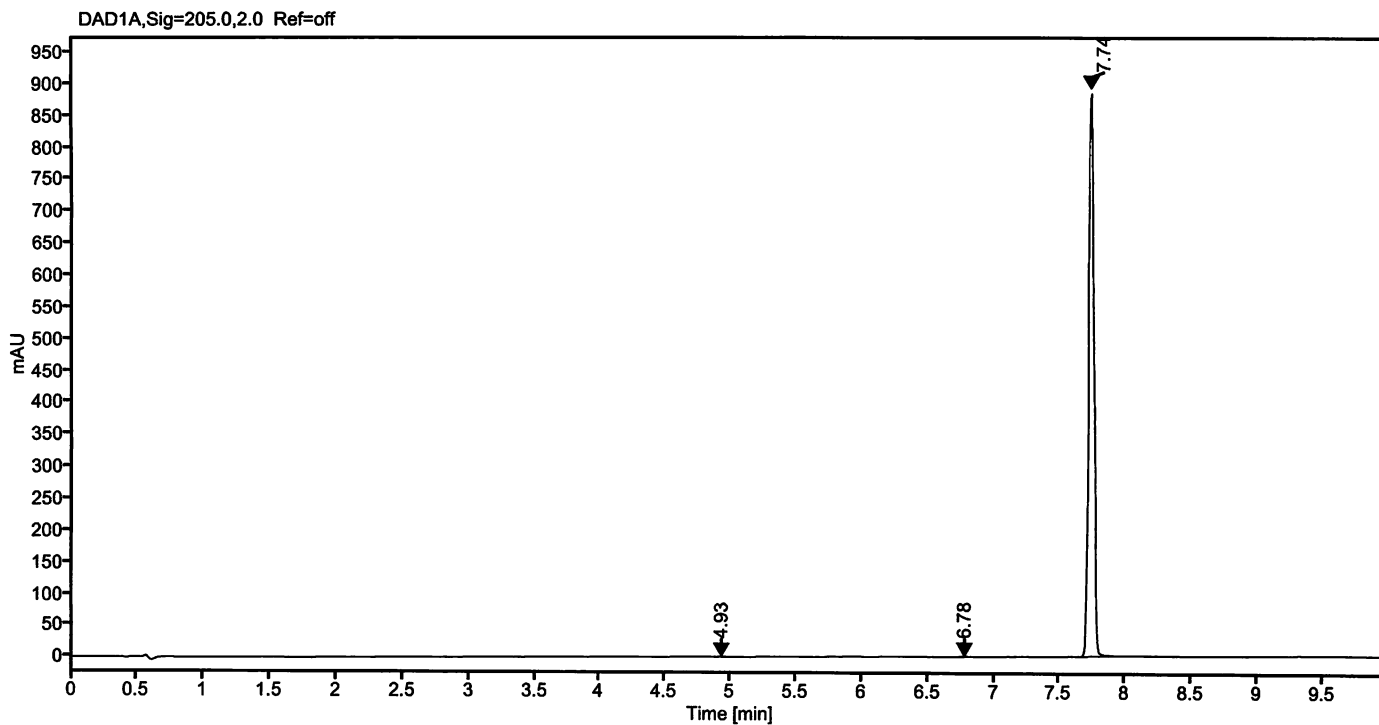
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The warranty for this product is limited to the purchasing price of this product.

Data file: 16986101-03-r001.dx
Sample name: 80326AL G170606
Inj. volume [µl]: 2.0
Acq. method: Gradient_10-100_P.amx

Instrument: UHPLC 2
Sequence Name: 27032018-2
Injection date: 3/27/2018 3:42:35 PM
Location: P1-D2

T.619

Sample Description Sudan 1



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

Nr.	RT [min]	Area	Height	Area%
1	4.93	2.06955	0.78	0.08
2	6.78	2.14784	0.80	0.09
3	7.74	2453.81626	887.71	99.83
Sum		2458.03		

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