

# Certificate of Analysis



## ISO Guide 34 Reference Material

### Product Identification

Article Code: DRE-C16986101

Article Name: Sudan 1

Formula: C<sub>16</sub>H<sub>12</sub>N<sub>2</sub>O

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).

	Method Details
Instrument:	UHPLC/DAD
Detection:	DAD
Column:	LUNA Omega C18 1.6 µm 100 x 2.1 mm
Inj.-Vol.:	2 µl
Flow:	0.5 ml/min
Ret.Time:	7.74 min
	Time[min] Eluent A [%] Eluent B [%]
	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: <0.10% (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.

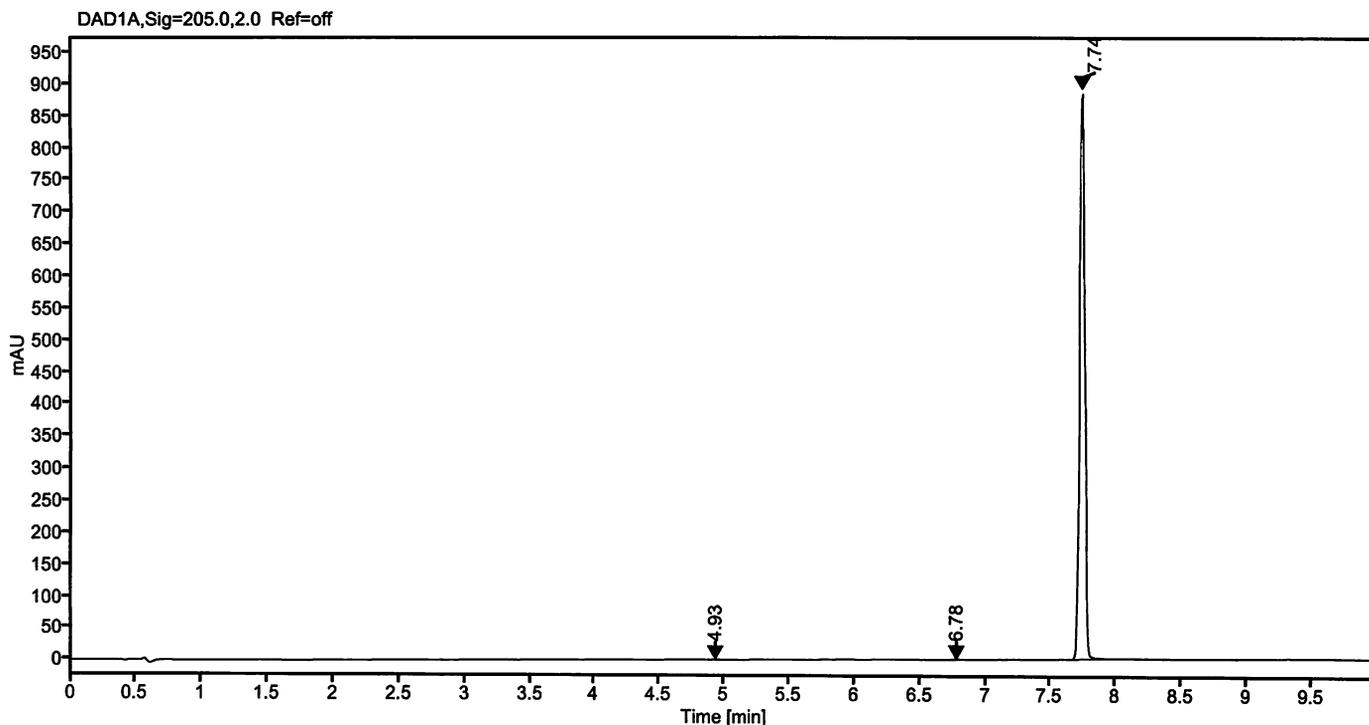
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Phone +49 821 906080 - Fax +49 821 9060888 - augsburg.inquiry@lgcgroup.com  
The warranty for this product is limited to the purchasing price of this product.

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		

*A. Ber*