

# Certificate of Analysis



## ISO Guide 34 Reference Material

### Product Identification

**Article Code:** DRE-C16986115  
**Article Name:** Sudan Orange G  
**Formula:** C<sub>12</sub>H<sub>10</sub>N<sub>2</sub>O<sub>2</sub>  
**Mol. Weight:** 214.22  
**CAS No.:** 2051-85-6

**Lot Number:** G979492  
**Expiry Date:** 11.09.2024  
**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: 97.56% (g/g)

Expanded Uncertainty U= 0.45% (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: HPLC/DAD

Detection: DAD

Column: ReproSil 100 C18 5 µm 250 x 3 mm

Inj.-Vol.: 5 µl

Flow: 1.0 ml/min

Ret.Time: 1.89 min

Method Details

Acetonitrile:Water+0.5% H<sub>3</sub>PO<sub>4</sub> 4:1

### 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, MS

Attachment: Exemplary chromatogram of given method

Certificate Revision 1 - 11.09.2018 - M. Beck

Certified on: 11.09.2018

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.

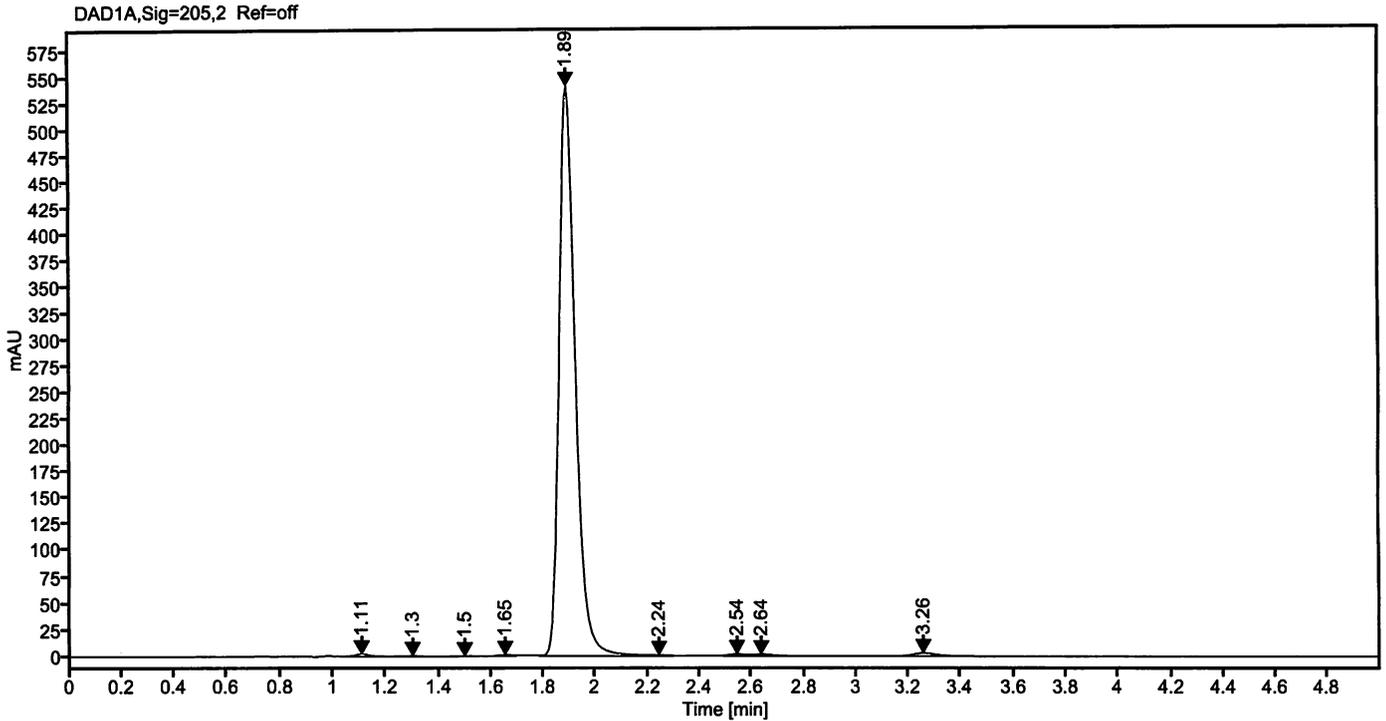
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The warranty for this product is limited to the purchasing price of this product.

AD000115

Data file: 16986115-28.dx  
Sample name: 80906AL G979492  
Inj. volume [µl]: 5.0  
Acq. method: S1\_41PK.amx

Instrument: DAD5  
Sequence Name: 06092018-1  
Injection date: 9/6/2018 10:24:25 PM  
Location: P2-E4

Sample Description Sudan Orange G



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

Nr.	RT [min]	Area	Height	Area%
1	1.11	7.51393	2.12	0.31
2	1.30	1.92756	0.48	0.08
3	1.50	1.19231	0.22	0.05
4	1.65	5.57449	1.36	0.23
5	1.89	2334.60068	540.85	97.69
6	2.24	3.77043	0.76	0.16
7	2.54	8.16967	1.74	0.34
8	2.64	9.31006	1.70	0.39
9	3.26	17.73650	2.90	0.74
	Sum	2389.80		