

Certificate of Analysis



ISO Guide 34 Reference Material

Product Identification

Article Code: DRE-C10148500
Article Name: Amaranth
Formula: C₂₀H₁₁N₂O₁₀S₃ 3Na
Mol. Weight: 604.47
CAS No.: 915-67-3

Lot Number: G977779
Expiry Date: 09.08.2022
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: 86.86% (g/g)
Expanded Uncertainty U= 1.00% (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: Poroshell 120 EC-C18 2,7 µm 4,6 x 50 mm
Inj.-Vol.: 10.0 µl
Flow: 1.0 ml/min
Ret.Time: 6.95 min

Method Details

Eluent A: Acetonitrile
Eluent B: 1.7 g Tetrabutylammoniumhydrogen sulfate + 0.7 g Na₂HPO₄ / 1L Water, pH = 3.35

Time[min]	Eluent A [%]	Eluent B [%]
0	20	80
1	20	80
9	50	50
15	50	50
20	20	80

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: 8.74% (g/g) by Karl-Fischer-Titration ($U(\text{exp}) = 0.23\%$ (g/g)).

Purity was determined by elemental analysis

Identity: EA, NMR, RT, IR, UV, MS

Certificate Revision 1 - 09.08.2018 - N. Müller

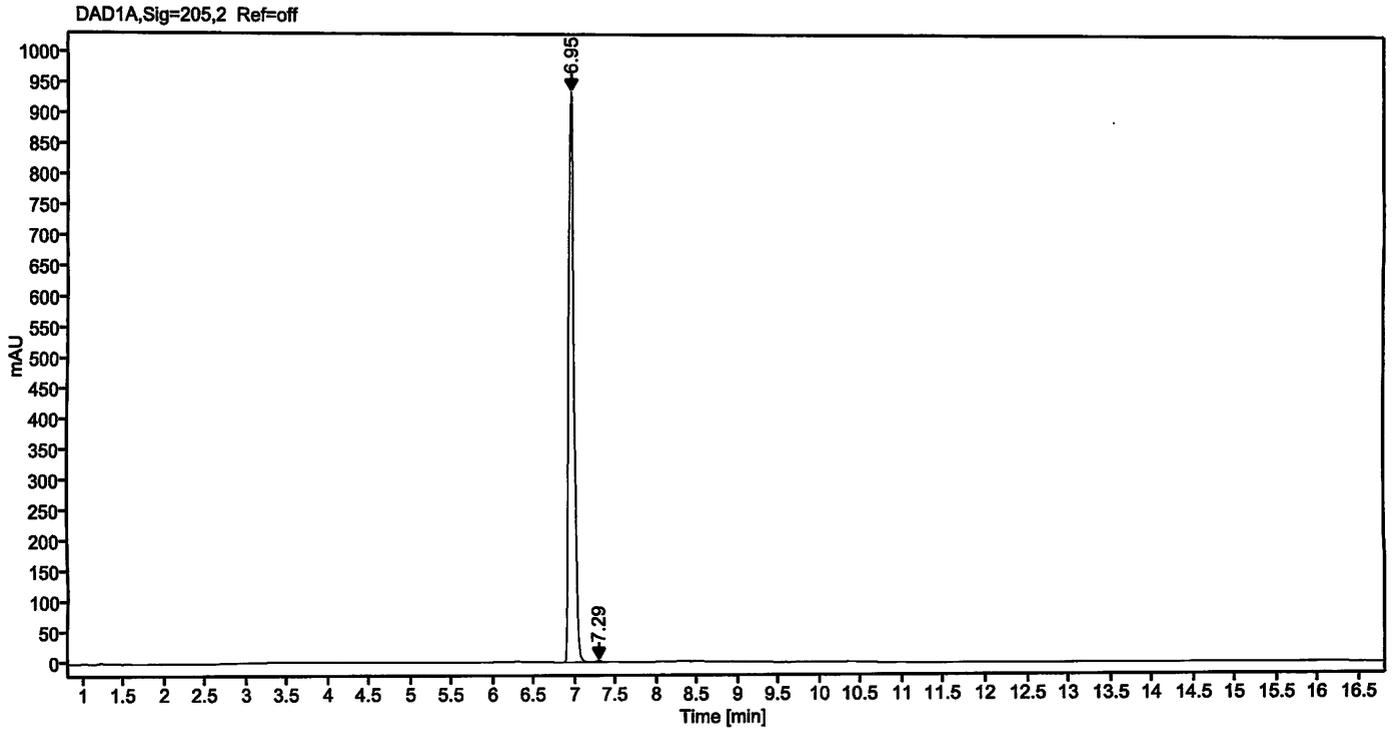
Certified on: 09.08.2018
Certified by: N. Müller
RM Release

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: 10148500-03.dx **Instrument:** DAD5
Sample name: 80802WA G977779 **Sequence Name:** 07082018-SE
Inj. volume [µl]: 10.0 **Injection date:** 8/7/2018 10:02:01 AM
Acq. method: S2_Gradient_BrilliantBlack.amx **Location:** P1-C2

Sample Description Amaranth
 Column: Poroshell 120 EC-C18 2,7 µm 4,6 x 50 mm
 Eluent: Tetrabutylammoniumhydrogen sulfate (1.7 g) and Na2HPO4 (0.7 g) in 1 L Water (pH 3.35 with H3PO4)



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

Nr.	RT [min]	Area	Height	Area%
1	6.95	4168.07219	936.81	99.73
2	7.29	11.37645	2.90	0.27
	Sum	4179.45		

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