Certificate of Analysis

ISO 17034 Reference Material

Product Identification

Article Code: DRE-C10535000
Article Name: Benzene
Formula: C6H6
Mol. Weight: 78.11
CAS No.: 71-43-2

Lot Number: G991651
Expiry Date: 11.12.2024
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:	99.90% (g/g)
Expanded Uncertainty U=	0.70% (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(exp) = u(RM) x k, where k is the coverage factor at the 95% confidence level (k=2). Uncertainty u(RM) is based on the combination of the uncertainties associated with each individual operation involved in the analysis of the product: $u(RM) = \sqrt{u(char)^2 + u(bb)^2 + u(lts)^2 + u(sts)^2}$; u(char) is the uncertainty of characterisation; u(bb) uncertainty of homogeneity test; u(lts) uncertainty of stability test long-term; u(sts) uncertainty of stability test short-term. u(lts) and u(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:	GC/FID	Injector:	100°C
Detection:	FID	Initial Temp:	40°C for 5 min
Column:	Optima-5MS, 0.25 µm, 0.25 mm	End Temp:	100°C for 2 min
Inj.-Vol.:	1 µl	Gradient:	15°C/min
Flow:	1.0 ml/min		
Ret.Time:	4.41 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(exp) = 0.03% (g/g)).
Purity was determined by elemental analysis
Identity: EA, NMR, RT, IR, MS
Attachment: Exemplary chromatogram of given method

Certificate Revision 1 - 11.12.2018 - N. Müller

Certified on: 11.12.2018
Certified by: N. Müller
RM Release

The LGC Labor GmbH, accreditated 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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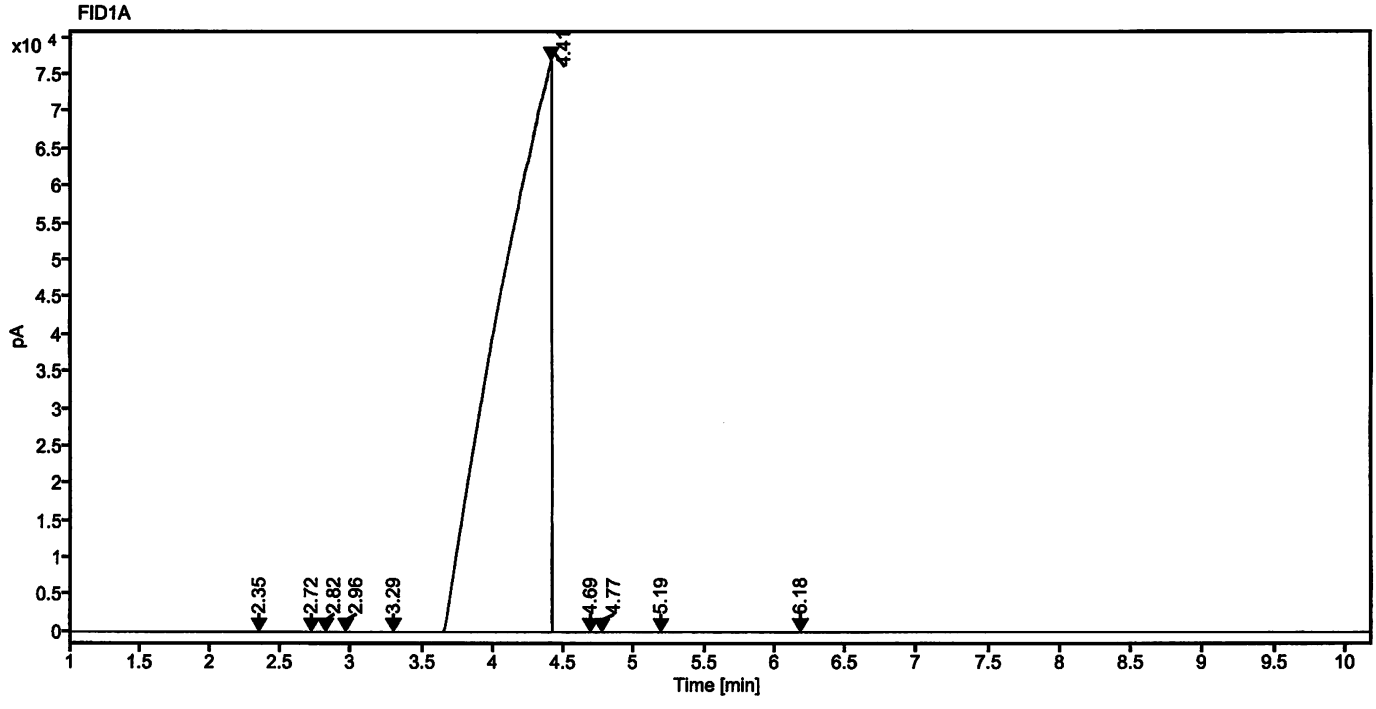
10.12.18
SSG

Data file:	10535000-02.dx	**Instrument:**	FID 3
Sample name:	G991651 1	**Sequence Name:**	2018KW49-1207a
Inj. volume [µl]:	1.0	**Injection date:**	12/7/2018 2:41:35 PM
Acq. method:	100.amx	**Location:**	52

Sample Description Benzene



Signal: FID1A

Nr.	RT [min]	Area [pA*s]	Height [pA]	Area%	Width [min]
1	2.35	57.21460	8.28	0.00	0.329
2	2.72	4.64557	1.07	0.00	0.125
3	2.82	3.85847	0.85	0.00	0.129
4	2.96	5.70650	0.75	0.00	0.295
5	3.29	3.86628	0.33	0.00	0.140
6	4.41	1916943.13877	76975.81	99.99	0.293
7	4.69	5.56028	3.50	0.00	0.096
8	4.77	0.56402	0.20	0.00	0.084
9	5.19	0.81420	0.20	0.00	0.153
10	6.18	14.17907	7.97	0.00	0.126
	Sum	1917039.55			