

Certificate of Analysis



ISO Guide 34 Reference Material

Product Identification

Article Code: DRE-C10860000

Article Name: Butachlor

Formula: C17H26ClNO2

Mol. Weight: 311.85

CAS No.: 23184-66-9

Lot Number: G979971

Expiry Date: 10.08.2022

Storage Temperature: 4°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: 96.39% (g/g)

Expanded Uncertainty U= 0.46% (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: GC/FID

Detection: FID

Column: Optima-5MS, 0.25 µm, 0.25 mm

Inj.-Vol.: 1 µl

Flow: 1.0 ml/min

Ret.Time: 18.70 min

Injector: 280°C

Initial Temp: 60°C for 5 min

End Temp: 280°C for 1 min

Gradient: 15°C/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, MS

Certificate Revision 1 - 10.08.2018 - N. Müller

Certified on: 10.08.2018

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.

LGC Labor GmbH - Bgm.-Schlosser-Straße 6A - 86199 Augsburg - Germany
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:

10860000-09.dx

Sample name:

80809CY G979971

Inj. volume [µl]:

1.0

Acq. method:

PESK.amx

Sample Description

Butachlor

Instrument:

FID 3

Sequence Name:

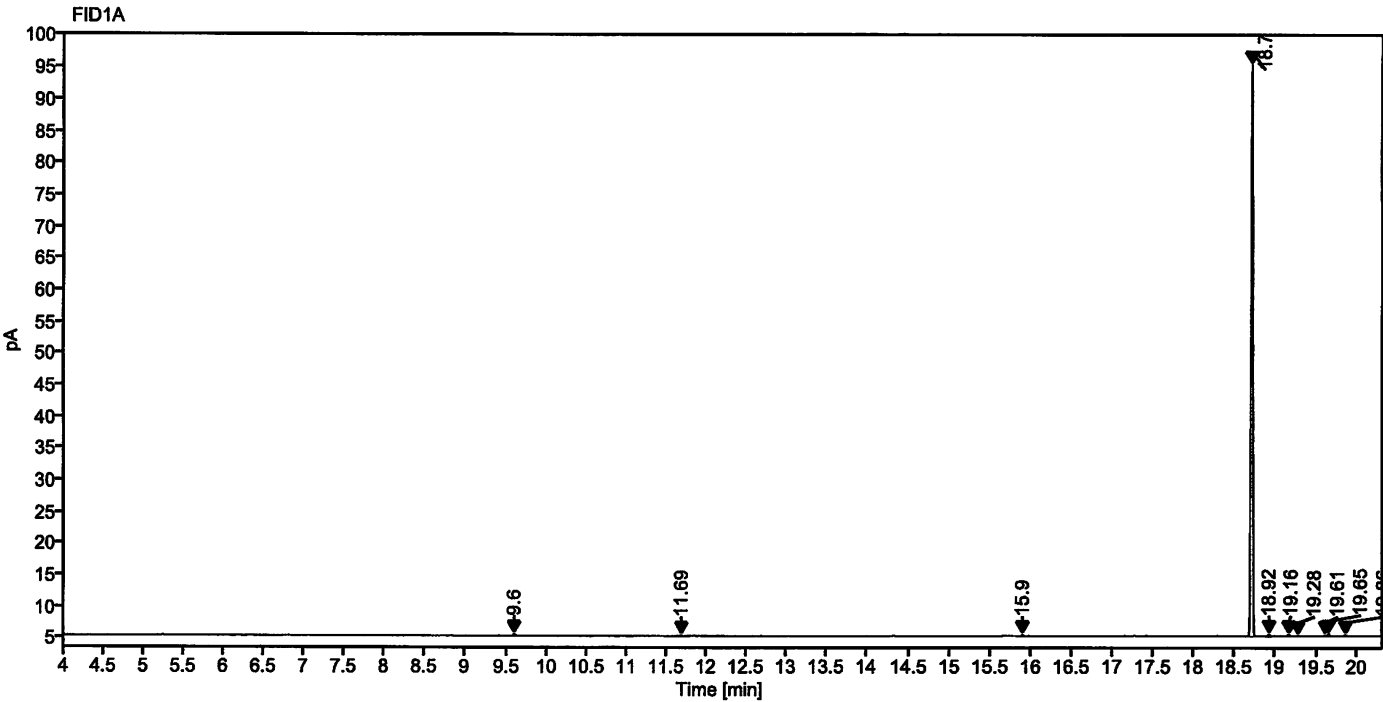
2018KW32-0809a

Injection date:

8/9/2018 6:08:15 PM

Location:

111



Signal: FID1A					
Nr.	RT [min]	Area [pA*s]	Height [pA]	Area%	Width [min]
1	9.60	0.62061	0.37	0.47	0.080
2	11.69	0.31176	0.20	0.24	0.068
3	15.90	0.46524	0.32	0.35	0.075
4	18.70	128.06270	90.10	96.79	0.104
5	18.92	0.58064	0.37	0.44	0.097
6	19.16	0.59308	0.34	0.45	0.085
7	19.28	0.25239	0.18	0.19	0.017
8	19.61	0.32014	0.21	0.24	0.054
9	19.65	0.64148	0.44	0.48	0.051
10	19.86	0.46333	0.24	0.35	0.092
Sum		132.31			

[Handwritten signature]