


02.15

pos. 9

Certificate of Analysis

ISO Guide 34 Reference Material

Product Identification

Article Code: 
Article Name: Ibuprofen
Formula: C₁₃H₁₈O₂
Mol. Weight: 206.28
CAS No.: 15687-27-1

Lot Number: G976092
Expiry Date: 30.07.2024
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: 98.91% (g/g)

Expanded Uncertainty U= 0.94% (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:	UHPLC/DAD	Method Details
Detection:	DAD	Eluent A: WA + 0.5% H ₃ PO ₄
Column:	LUNA Omega C18 1.6 µm 100 x 2.1 mm	Eluent B: Acetonitrile
Inj.-Vol:	2.0 µl	
Flow:	0.5 ml/min	
Ret.Time:	6.37 min	

Time (min)	Eluent A [%]	Eluent B [%]
0.0	90	10
0.3	90	10
8.0	0	100
9.5	0	100
10.0	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: 0.30% (g/g) by Karl-Fischer-Titration ($U(\text{exp}) = 0.16\%$ (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 - 30.07.2018 - N. Müller

Certified on: 30.07.2018
Certified by: N. Müller
RM Release



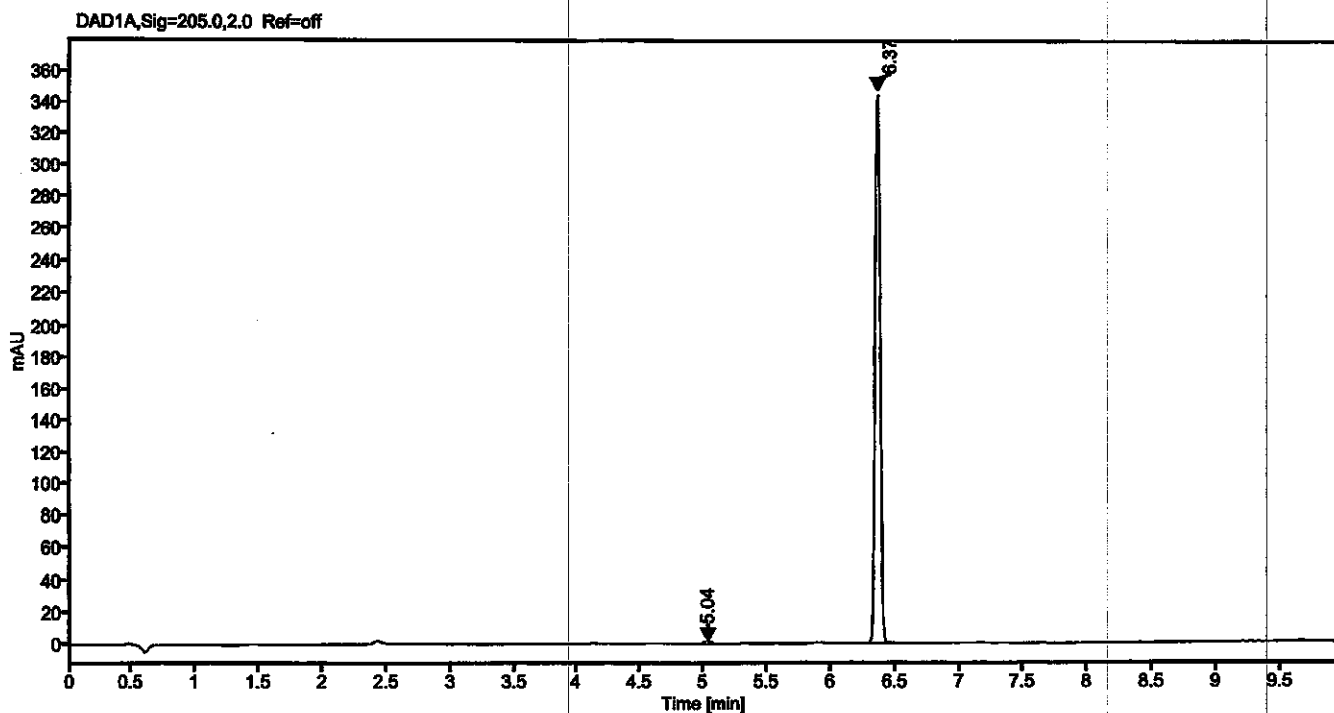
accredited by DAkkS as indicated by the accreditation number D-RM-19883-01 & D-PL-19883-01,
has shown competence based on ISO Guide 34:2009 with relevant parts of DIN EN ISO/IEC 17025:2005 for production of certified
reference materials in form of organic pure substances and in form of single and multi-component solutions of organic pure substances.

Data file: 14278000-06.dx
Sample name: 80704AL G976092
Inj. volume [µl]: 2.0
Acq. method: Gradient_10-100_P.amx

Instrument: UHPLC 2
Sequence Name: 24072018-1a
Injection date: 7/24/2018 4:42:09 PM
Location: P2-A4

28.7

Sample Description Ibuprofen



Signal: DAD1A, Sig=205.0, 2.0 Ref=off

Nr.	RT [min]	Area	Height	Area%
1	5.04	6.72228	1.61	0.71
2	6.37	946.13893	347.69	99.29
Sum		952.86		

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