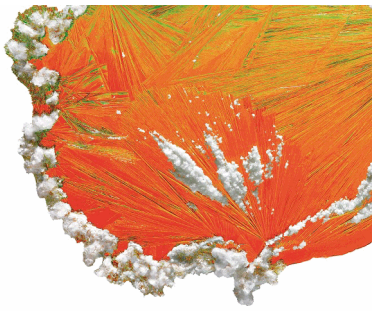


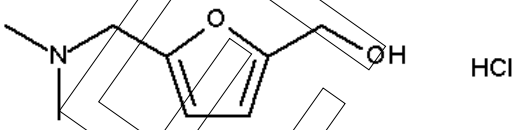
Certificate of Analysis

ISO 9001

Reference Material

Product name

[5-[(Dimethyl-amino)methyl]furan-2-yl]methanol
Hydrochloride



Product code
MM0086.17

Lot number
1013080

CAS number
81074-81-9

Appearance
light brown solid

Molecular weight
191.66

Melting point (DSC)
126 °C

Molecular formula
$C_8H_{13}NO_2$ HCl

Long-term storage
2 to 8 °C, dark

Assay "as is"
96.7 %

Date of shipment: **25 Oct 2019**

Producer confirms that this reference material (RM) meets the specification detailed on this Certificate of Analysis for **two years** from the date of shipment, provided the substance is stored under the recommended conditions unopened in the original container.

Release by:	**Date of Release:**		
Dr. Sabine Schröder	Luckenwalde, 27 Sep 2019		Product Release

Producer:
LGC GmbH
Louis-Pasteur-Str. 30
D-14943 Luckenwalde
Germany
www.lgcstandards.com

Product information

For laboratory use only. Not suitable for human or animal consumption.

Before usage of the RM, it should be allowed to warm to room temperature. No drying required, as the certified value is already corrected for the content of water and other volatile materials.

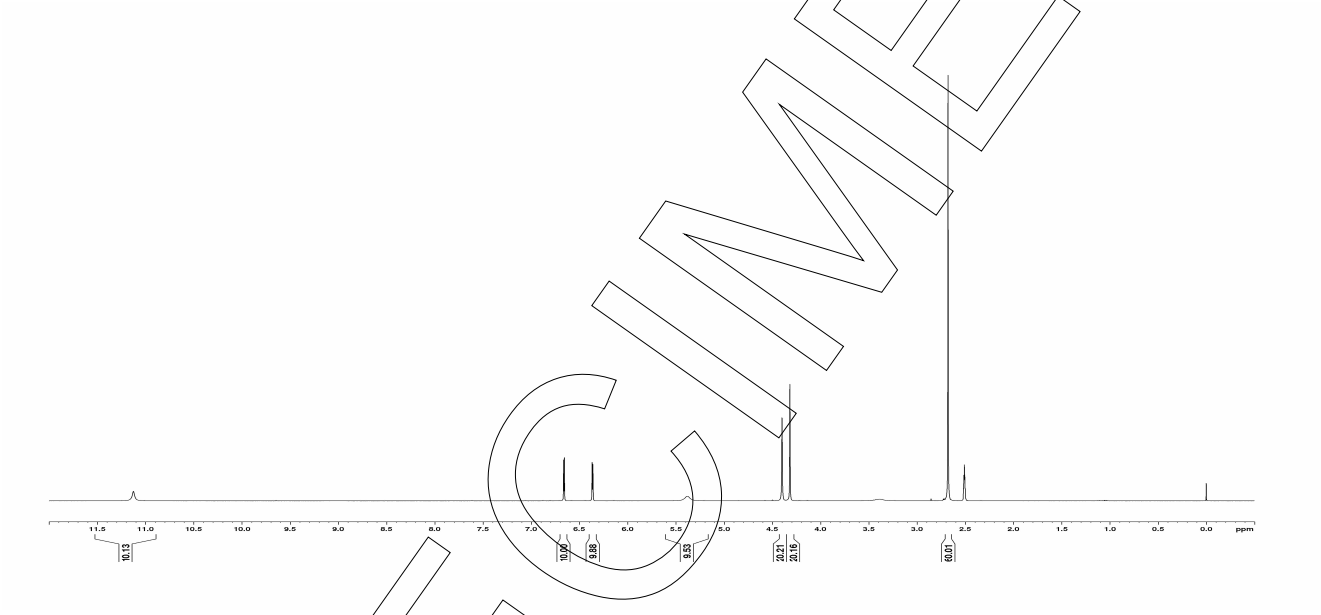
The product quality is controlled by regularly performed quality control tests (retests).

Further content

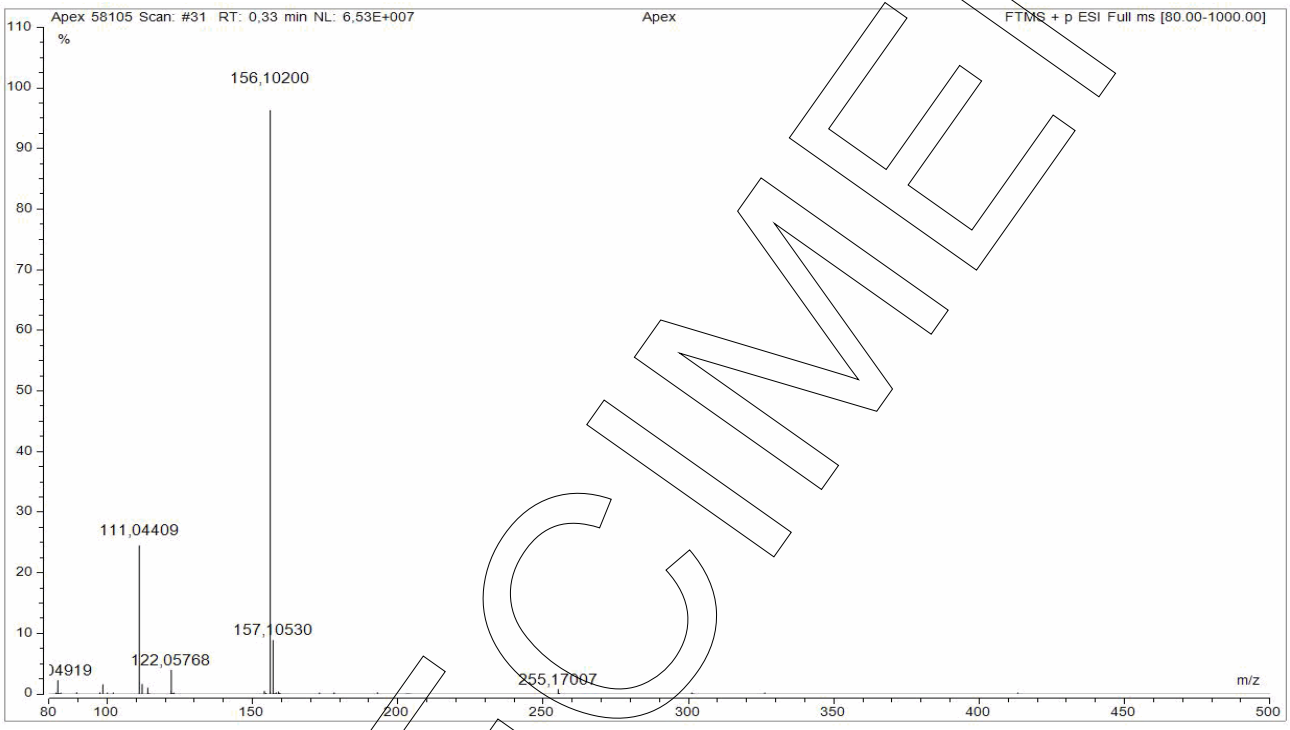
Identity

The identity of the reference material was established by following analyses.

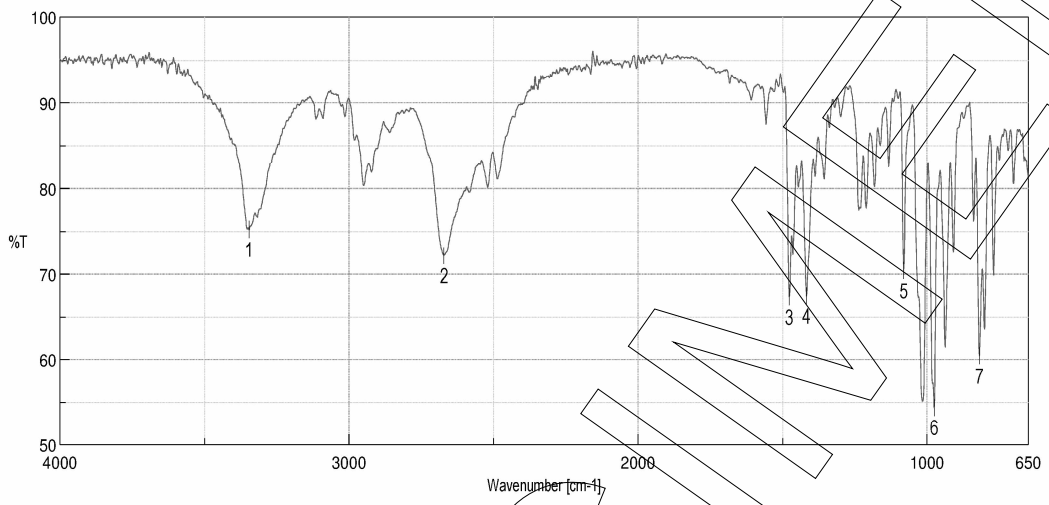
Method	Conditions	Result
^{1}H-NMR	400 MHz, DMSO-d_6	Structure confirmed



Method	Conditions	Result
MS	3.5 kV ESI+; capillary temperature: 269 °C Theoretical value: 156.10191	Structure confirmed



Method	Conditions	Result
IR	Attenuated Total Reflection Fourier Transform Infrared (ATR-FTIR) Spectroscopy	Structure confirmed



Results of Peak Find

No.	Position	Intensity
1	3345.89	75.2302
2	2671.89	72.1735
3	1477.21	67.3295
4	1417.42	67.4285
5	1080.91	70.4165
6	975.804	54.3599
7	819.598	60.4211

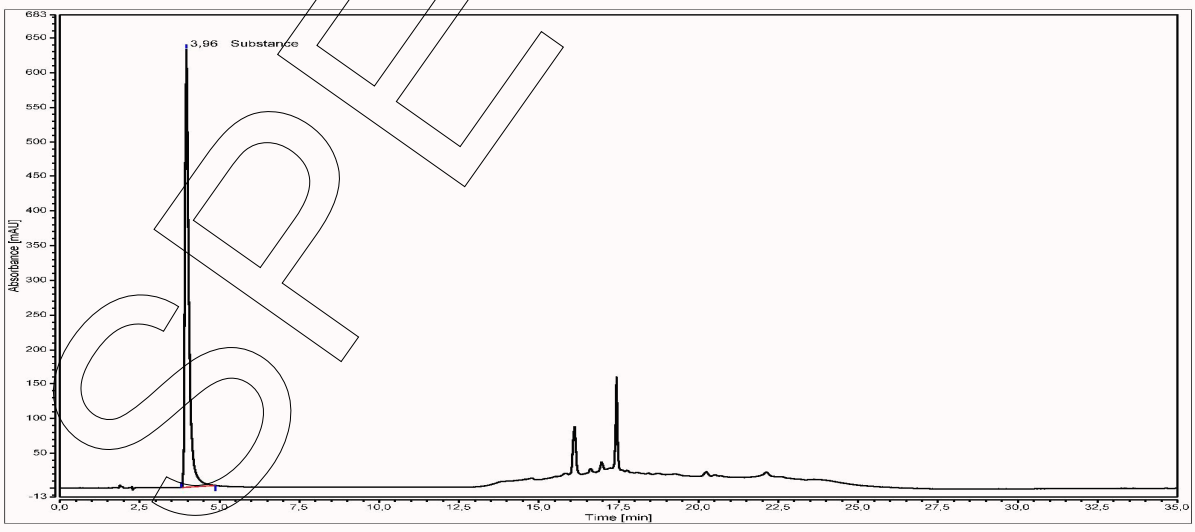
Assay

The assay of the reference material was assessed by following analyses.

Purity by High Performance Liquid Chromatography (HPLC)

HPLC Conditions:	
Column	Gemini C18; 5 µm, 150 x 4.6 mm
Column temperature	40 °C
Detector	DAD, 220 nm
Injector	Auto 3.00 µl; 0.132 mg/ml in Methanol
Flow rate	1.0 ml/min
Phase A	6.8g/l KH_2PO_4, pH 7.0
Phase B	Acetonitrile, 0.1 % H_3PO_4
Gradient program	0-10 min A/B 98/2 10-15 min A/B to 50/50 15-20 min A/B 50/50 20-25 min A/B to 98/2 25-35 min A/B 98/2 (v/v)

HPLC chromatogram and peak table



Area percent report - sorted by signal			
Pk #	**Retention time**	**Area**	**Area %**
1	3.957	90.4852	100.00
Totals		**90.4852**	**100.00**

The content of the analyte was determined as ratio of the peak area of the analyte and the cumulative areas of the purities, added up to 100 %. System peaks were ignored in calculation.

Result (n = 3)	100.00 %; SD < 0.01 %

Volatile content

Water content	
Method	Karl Fischer titration
Result (n = 3)	0.24 %; SD = 0.07 %

Residual solvents	
Method	^{1}H-NMR
Result (n = 1)	No significant amounts of residual solvents were detected (< 0.05 %).

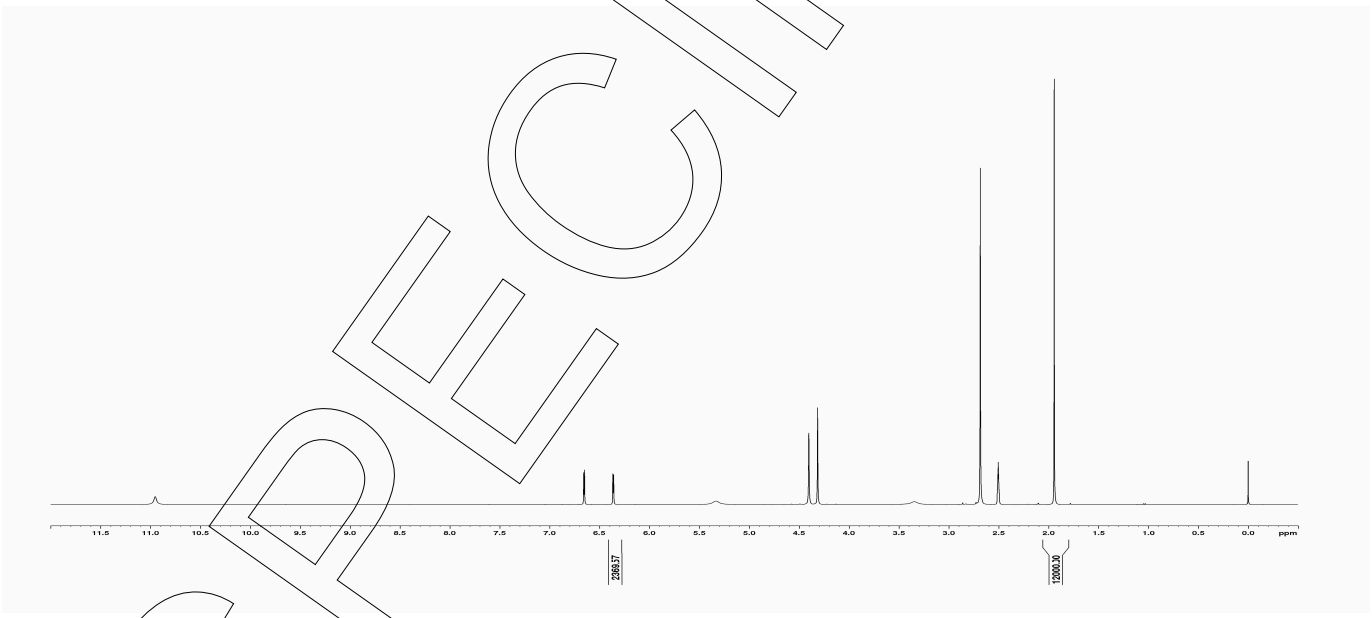
Final result

Assay "as is": **96.67 %**

The assay "as is" is assessed by quantitative NMR spectroscopy and is equivalent to the assay based on the not anhydrous and not dried substance respectively.

Method: Value assigning technique - quantitative NMR spectroscopy	
Conditions	400 MHz, DMSO-d_6
Internal standard	Duroquinone (certified reference material), signal 1.8 - 2.1 ppm, 12 H
Result (mass fraction, **n = 6**)	96.67 %; SD = 0.27 %

Quantitative NMR spectrum



Revision table

Revision	Date	Reason for revision
00	27 Sep 2019	Release of the Certificate of Analysis - initial version

Product warranties for the RM are set out in the terms and conditions of purchase.