

**REFERENCE MATERIAL CERTIFICATE**

**Reference Material**

This certificate is designed in accordance with ISO Guide 31. This reference material (RM) was designed, produced and verified in accordance with a registered quality management system ISO 9001. All measurements were performed according to ISO/IEC 17025 by a DAkkS accredited laboratory (D-PL-19883-01-00).

**Product Name**

Chloroparaffin C14 45% Cl 100 µg/mL in Cyclohexane

<b>Product Code</b>	<b>Lot Number</b>
DRE-A11457550CY-100	1-1033975CY
<b>CAS No.</b>	<b>Format</b>
85535-85-9	Solution
<b>Mol. Weight</b>	<b>Expiry Date</b>
	06 Dec 2024
<b>Mol. Formula</b>	<b>Storage Temp</b>
	20°C ± 4°C

<b>CERTIFIED</b> Concentration 100.0 µg/mL	<b>CERTIFIED</b> Expanded Uncertainty (U) 4.0 µg/mL
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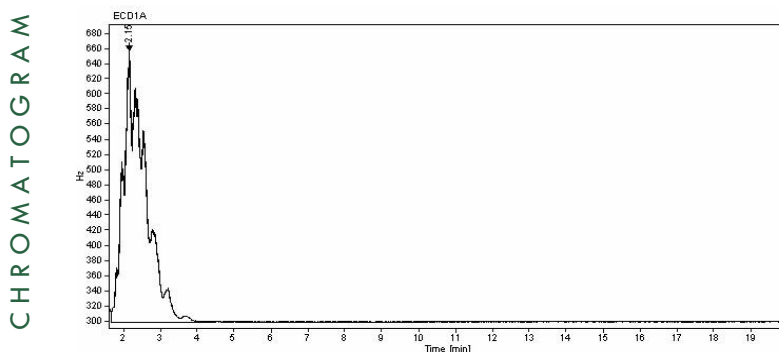
**Uncertainty**

The certified value(s) and uncertainty(ies) are determined in accordance with EURACHEM/CITAC Guide for "Quantifying Uncertainty in Analytical Measurement, 3rd edition", with an 95% confidence level (k=2). Uncertainty is based on the Total Combined Uncertainty, including uncertainties of characterisation and stability testing. Stability values are based on real evidence opposed to simulation.

The producer certifies that this reference material meets the specification stated in this certificate until the expiry date, provided it is stored unopened at the recommended temperature herein. Product warranties for this reference material are set out in the terms and conditions of purchase.

CERTIFIED BY		CERTIFIED ON	
N. Müller	06 Dec 2019	<i>NLM</i>	RM Release

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Signal: ECD1A					
Nr.	RT [min]	Area [Hz*s]	Height [Hz]	Area%	Width [min]
1	2.15	14638.409	356.66	100	0.485

**Instrument**

GC/ECD

**Detection**

ECD

**Column**

Optima-5MS, 0.25 µm, 0.25 mm

**Method Details**

Initial Temp: 320°C / 20 min, End

Temp: 320°C, Gradient: 0°C/min

**Inj.-Vol.**

1.0 µL

**Flow**

1 mL/min

**Method of Preparation**

The certified value is based on gravimetric and volumetric preparation of this RM. This RM has been confirmed by the appropriate analytical techniques.

**Batch Information**

Solvent: Cyclohexane, Lot No. I097621749, 80.00 mL.

Mixture of Congeners.

**Gravimetric Data**

Compound Name	Lot No.	Weight (mg)	Purity (%)
Chloroparaffin C14 45% Cl *	1025428	8.009	99.9

\*mixture of congeners -- See Batch information

**Intended Use**

This RM is intended for use in a laboratory as a calibration and quality control standard or in method development for analytical techniques.

**Safety**

Proper precautions should be observed while handling. See Safety Data Sheet.

**Traceability**

The balances used for gravimetric measurements are calibrated with weights traceable to the national standards (DKD). The calibration of

the balances is verified daily internally and annually by an external accredited calibration service. Chromatographic methods are traceable to the International System of Units (SI).

**Storage**

The RM should be stored in the original sealed container at the indicated temperature.

**Instructions for use**

The RM should be used shortly after opening to avoid concentration changes due to evaporation. It is recommended to use 1 mL as the minimum sample size and if less material is used, to increase the certified uncertainty by a factor of two for half sample and four for a quarter of sample. If storage after opening is necessary, the RM should be tightly closed and kept from light and moisture. If the RM was in a sealed ampoule, it should be transferred to a vial with minimum head space. Visit the support section of our website [lgcstandards.com](http://lgcstandards.com) for a series of Dr. Ehrenstorfer Tech Tip videos and frequently asked questions.