

### Certified Reference Material

This certificate is designed in accordance with ISO 17034 and ISO Guide 31. This certified reference material (CRM) was designed, produced and verified in accordance with ISO/IEC 17025, ISO 17034 and a registered quality management system ISO 9001.

#### Product Name

Endosulfan-sulfate 10 µg/mL in Cyclohexane

AND Enantiomer

**Product Code**  
DRE-L13133000CY

**Lot Number**  
H1028054CY

**CAS No.**  
1031-07-8

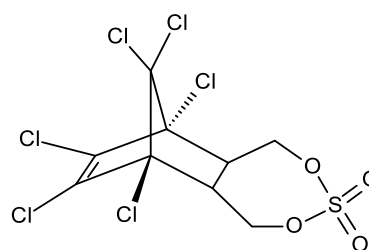
**Format**  
Solution

**Mol. Weight**  
422.92

**Expiry Date**  
16 Oct 2022

**Mol. Formula**  
C<sub>9</sub>H<sub>6</sub>Cl<sub>6</sub>O<sub>4</sub>S

**Storage Temp**  
20°C ± 4°C



**CERTIFIED**

Concentration  
10.00 µg/mL

**CERTIFIED**

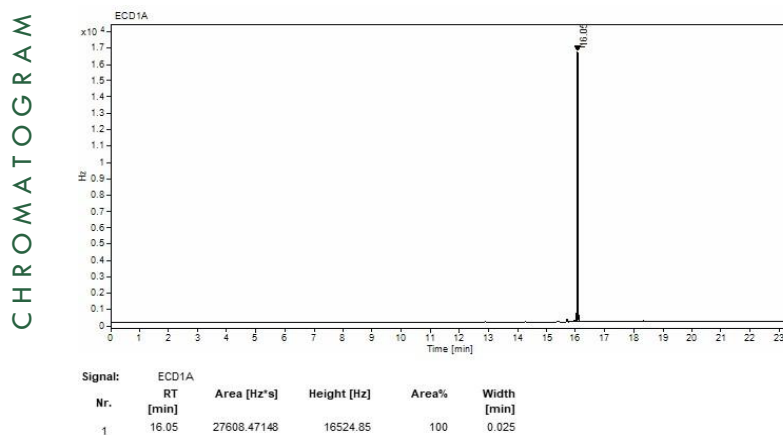
Expanded Uncertainty (U)  
0.23 µg/mL

#### Uncertainty

The certified value(s) and uncertainty(ies) are determined in accordance with ISO 17034 with an 95% confidence level (k=2). Uncertainty is based on the Total Combined Uncertainty, including uncertainties of preparation, purity of neat materials, homogeneity and stability testing. Stability values are based on real evidence opposed to simulation.

The producer certifies that this certified 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 certified reference material are set out in the terms and conditions of purchase.

CERTIFIED BY		CERTIFIED ON	
D. Schmid	16 Oct 2019		RM Release

**Instrument**

GC/ECD

**Detection**

ECD

**Column**

Optima-5MS, 0.25 µm, 0.25 mm

**Method Details**

Initial Temp: 120°C / 4 min, End Temp: 320°C / 5 min, Gradient: 15°C/min

**Inj.-Vol.**

2.0 µL

**Flow**

1 mL/min

**Method of Preparation**

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

**Batch Information**

Solvent: Cyclohexane, Lot No. I097821749, 1000.00 mL.

Substance may decompose during GC analysis.

**Gravimetric Data**

Compound Name	Lot No.	Weight (mg)	Purity (%)
Endosulfan-sulfate	105121	10.154	98.5

**Intended Use**

This CRM 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).

**Homogeneity**

Random replicate samples of the final packaged CRM have been analysed to prove homogeneity compliant with ISO 17034.

**Storage**

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

**Instructions for use**

The CRM 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 CRM should be tightly closed and kept from light and moisture. If the CRM 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.