

**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**  
Phthalates Mixture 956 1000 µg/mL in Isooctane

**Product Code**  
DRE-GA09000956IO

**Lot Number**  
2-H430395IO

**Format**  
Multicomponent Solution

**Expiry Date**  
18 Nov 2023

**Storage Temp**  
≤ -10 °C

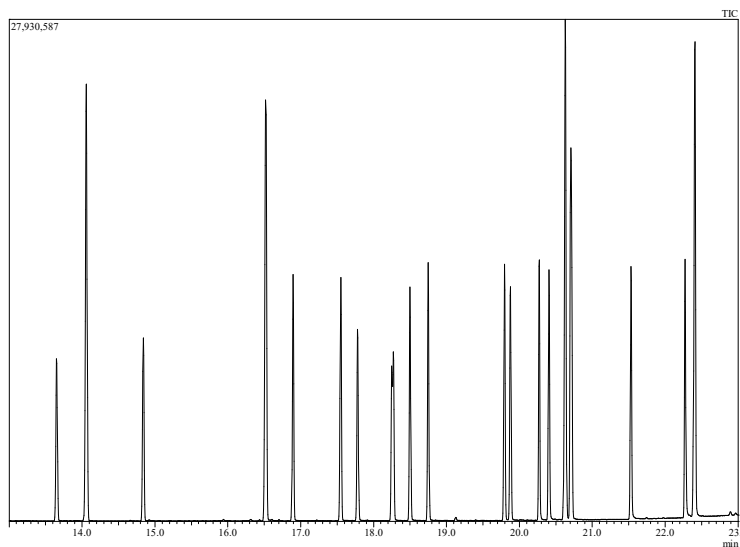
Compound Name	CERTIFIED		CAS	Lot Number	Purity (%)	Amount (mg)	RT (min)
	Concentration (µg/mL)	Expanded Uncertainty U (µg/mL)					
Dimethyl Phthalate	998.5	71	131-11-3	39.9.2P	99.9	1.20	13.65
Diethyl Phthalate	1001	74	84-66-2	38.9.1.2.1P	99.8	1.20	14.84
Diisobutylphthalate	1002	68	84-69-5	1899.7.1.1P	99.2	1.21	16.90
Di-n-butyl Phthalate	1018	75	84-74-2	40.9.2P	99.8	1.22	17.55
Bis(2-methoxyethyl)phthalate	1001	71	117-82-8	2254.286.1.1P	98.5	1.22	17.78
Bis(4-methyl-2-pentyl)phthalate	997.5	71	146-50-9	2255.542.1P	95	1.26	18.27
Bis(2-ethoxyethyl)phthalate	1002	69	605-54-9	2253.3.11P	99	1.21	18.50
Diamyl Phthalate	994	68	131-18-0	3058.7.2P	99.4	1.20	18.75
Di-n-hexyl Phthalate	998	68	84-75-3	2474.7.1.1P	99.8	1.20	19.80
Butyl Benzyl Phthalate	1017	75	85-68-7	36.1.5P	98	1.25	19.88
Hexyl-2-ethylhexyl Phthalate (technical)	999.6	71	75673-16-4	4544.421.1P	98	1.22	20.27
Bis(2-butoxyethyl) Phthalate	1004	69	117-83-9	2252.3.9P	97.5	1.24	20.41
Dicyclohexyl Phthalate	1001	68	84-61-7	2171.7.2P	99.9	1.20	20.71
Bis(2-ethylhexyl)phthalate	997.5	74	117-81-7	33.1.4P	99.5	1.20	20.71
Di-n-octyl Phthalate	994	71	117-84-0	41.7.3.1P	99.2	1.20	21.53
Di-nonyl Phthalate	999	69	84-76-4	3759.3.3P	99.5	1.20	22.27

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.

<b>CERTIFIED BY</b> Adrienne Ormand	<b>CERTIFIED ON</b> 17 Nov 2020		<b>RM Release</b>



CHROMATOGRAM



Instrument  
GC/MS

Detection  
MS

Column/Flow  
Phenomenex ZB-Semivolatile 30m  
x 0.25 mm, ID 0.25 µm / 1 mL/min

Method Details

Rate Temp.(C)	Hold time (min)
40.0	2.0
10.0	100.0
15.0	250.0
20.0	345.0
	3.25

Inj.-Vol  
1 µL

### 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: Isooctane, Lot no. 176186, 1.2 mL

### 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.

### 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, long-term stability testing, and transportation stability.

### Traceability

The balances used for gravimetric measurements are calibrated with weights traceable to the national standards (NIST). The calibration of the balances is verified daily internally and annually by an external accredited calibration service. Only Class A glassware is used for volumetric measurements.

### Homogeneity

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

### Storage

The CRM should be stored in the original sealed bottle 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 µL as the minimum sample size. If storage after opening is necessary, it should be transferred to an amber vial with minimum head space and a Teflon lined silicon septum. If handled as recommended, use period after opening is a maximum of 486 days for an estimated 5% drift in concentration as a result of analyte and/or solvent transpiration. 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.

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The producer of this reference material is registered to ISO 9001:2015 under 56 100 19560019 by TUV USA and accredited to ISO 17025:2017 and ISO 17034:2016 by A2LA with the accreditation numbers 3031.01 and 3031.02.



ISO 17034 Accredited  
Reference Material Producer  
Cert. No. 3031.02