LGC | DR EHRENSTORFER™

REFERENCE MATERIAL CERTIFICATE ISO 17034

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	Product Code	Lot Number	Format	Expiry Date	Storage
Cannabis Residual Solvents Mixture 138 1000 µg/mL in Triacetin	DRE-GA09000138TN	2-H424650TN	Multicomponent Solution	11 Dec 2021	≤ -10 ºC

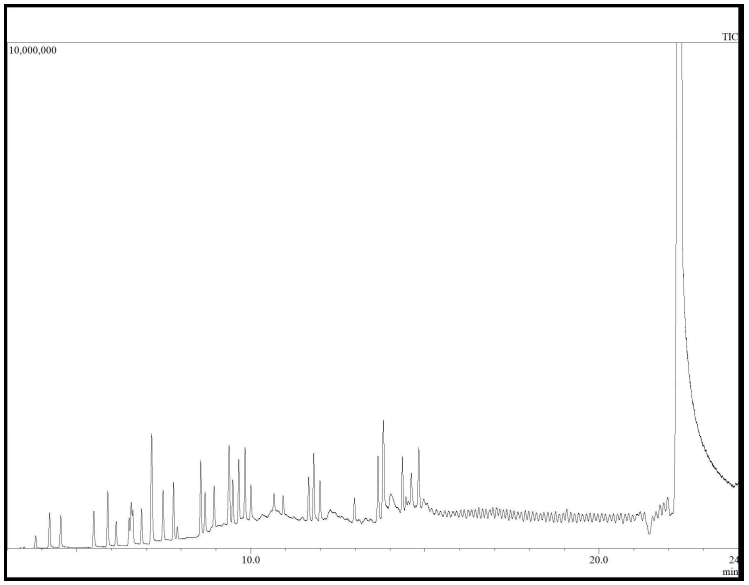
Compound Name	CERTIFIED Conc. (mg/L)	Expanded Uncertainty U (mg/L)	CAS	Lot No.	Purity (%)	Amount (mg)	RT (min)
Methanol	1002	47	67-56-1	328.24.6P	99.9	1.20	4.86
N-propane	1008	47	74-98-6	4643.1.3P	99.97	1.21	4.88
Isobutane	1005	51	75-28-5	1072.158.1P	99	1.22	5.46
Ethanol	1001	47	64-17-5	202.52.1P	99.7	1.20	5.88
N-pentane (c5)	1001	47	109-66-0	976.9.4P	99.6	1.21	5.88
Butane (c4)	1005	51	106-97-8	1009.1.3P	99	1.22	5.93
Ethyl Ether	1000	47	60-29-7	226.9.1P	99.8	1.20	6.13
Acetone	1002	47	67-64-1	196.24.5P	99.8	1.20	6.50
2,2-dimethylbutane	1000	51	75-83-2	4327.1.1P	99	1.21	6.56
Isopropyl Alcohol	1003	47	67-63-0	570.24.6P	99.9	1.21	6.60
Acetonitrile	1002	47	75-05-8	204.24.1P	99.98	1.20	6.86
2,3-dimethylbutane	1003	47	79-29-8	2086.9.1P	98.9	1.22	7.15
2-methylpentane	1000	51	107-83-5	384.158.1.1P	99	1.21	7.15
Methylene Chloride	1001	47	75-09-2	178.271.1P	99.99	1.20	7.15
2-methylbutane	1001	51	78-78-4	1420.1.2.1P	99.4	1.21	7.24
3-methylpentane	1002	47	96-14-0	346.7.2P	99.7	1.21	7.47
N-hexane (c6)	1001	51	110-54-3	620.24.1P	98	1.23	7.77
1-propanol	995.6	51	71-23-8	499.18.1P	99.5	1.20	7.88
Ethyl Acetate	999	51	141-78-6	269.29.2P	99	1.21	8.55
2-butanone (mek)	1005	51	78-93-3	197.18.1P	99.9	1.21	8.55
2-butanol	1001	47	78-92-2	354.29.1P	99.8	1.20	8.68
Tetrahydrofuran (thf)	1001	47	109-99-9	299.271.2P	99.99	1.20	8.94
Cyclohexane	1001	47	110-82-7	308.271.1P	99.5	1.21	9.36
1,2-dimethoxyethane	993.3	46	110-71-4	3198.7.1.1P	99	1.20	9.38
Isopropyl Acetate	1001	51	108-21-4	372.1.2P	99.8	1.20	9.48
Benzene	1001	47	71-43-2	146.1.9P	99.99	1.20	9.64
Heptane (c7)	1001	47	142-82-5	546.24.1P	99.7	1.20	9.82
1-butanol	1002	51	71-36-3	224.29.2P	99.9	1.20	9.99
1,4-dioxane	1001	51	123-91-1	223.1.3P	100	1.20	10.66
2-ethoxyethanol	1000	51	110-80-5	931.29.1P	100	1.20	10.92

Compound Name	CERTIFIED Conc. (mg/L)	Expanded Uncertainty U (mg/L)	CAS	Lot No.	Purity (%)	Amount (mg)	RT (min)
Ethylene Glycol	1003	47	107-21-1	307.1.5P	99.9	1.20	11.48
Pyridine	1006	47	110-86-1	101.24.1P	100	1.21	11.65
Toluene	1001	47	108-88-3	184.24.4P	100	1.20	11.80
1-pentanol	1004	47	71-41-0	858.29.1P	99.9	1.21	11.98
N,n-dimethylformamide	1011	47	68-12-2	359.9.3P	99.99	1.21	12.96
Ethylbenzene	999.9	51	100-41-4	174.8.2P	99.9	1.20	13.64
M-xylene	1000	47	108-38-3	193.7.1.2P	99.7	1.20	13.80
P-xylene	1001	47	106-42-3	194.7.1P	99.9	1.20	13.80
Dimethyl Sulfoxide (dmso)	1017	48	67-68-5	405.9.5P	99.7	1.22	14.34
O-xylene	1002	47	95-47-6	192.29.2P	99.2	1.21	14.34
N,n-dimethylacetamide	1007	47	127-19-5	1928.7.1P	100	1.21	14.59
Isopropylbenzene	999.9	51	98-82-8	176.9.1P	98.9	1.21	14.81
Tetramethylene Sulfone	1012	47	126-33-0	1194.1.1P	99.8	1.22	22.34

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		RM Release
Amanda Witherington	8 Oct 2020	Amanda S. Orrand	

CHROMATOGRAM



Instrument
GC/MS

Detection
MS

Column/Flow
Phenomenex ZB-624 60m x 0.25 mm, ID 1.4 um / 1 mL/min

Method Details

Rate	Temp.(C)	Hold time (min)
	35.0	1.0
10.0	70.0	0.0
20.0	120.0	0.0
10.0	200.0	0.0
20.0	240.0	5.0

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: Triacetin, Lot no. MKCD8776, 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 117 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 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.

A2LA ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Cert. No. 3031.02