

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 ISO 17034 - D5443 Hydrocarbon Test Mixture	Product Code DRE-GA09000601	Lot Number 2-H370444NA	Format Multicomponent Solution	Expiry Date 27 Mar 2021	Storage Temp Ambient
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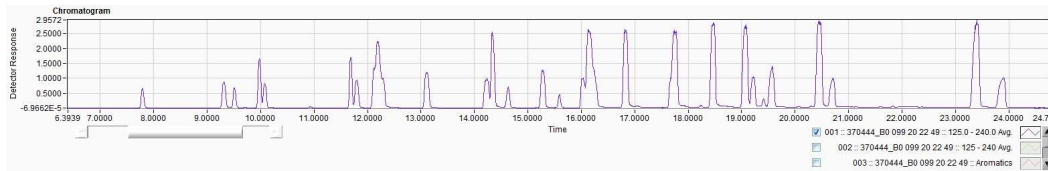
Compound Name	CERTIFIED		CAS	Lot Number	Combined Purity (%)	Amount (mg)	RT (min)
	Concentration (Wt %)	Expanded Uncertainty U (Wt %)					
N-pentane (c5)	1.001	.051	109-66-0	976.9.2.1P	99.5	254.10	7.78
2,3-dimethylbutane	1.986	.099	79-29-8	2086.9.1P	98.9	506.90	9.27
Cyclopentane	.9988	.05	287-92-3	2386.1.3.1P	98.2	256.80	9.47
1-hexene	1.488	.075	592-41-6	3315.29.1P	99.1	379.20	9.95
N-hexane (c6)	1.99	.1	110-54-3	620.24.1P	98	512.70	10.03
4-methyl-1-hexene	1.495	.075	3769-23-1	8749.7.1P	99.7	378.50	11.66
Cyclohexane	1.993	.1	110-82-7	308.1.6P	99.5	505.70	11.78
Isooctane	4.969	.25	540-84-1	339.24.7P	99.9	1255.90	12.08
Benzene	2.241	.11	71-43-2	146.1.9P	99.99	565.90	12.20
Heptane (c7)	3.471	.17	142-82-5	546.271.1P	99	885.20	12.25
Methyl Cyclohexane	4.219	.22	108-87-2	390.1.2.1P	99.9	1066.40	13.08
Octane (c8)	4.972	.25	111-65-9	385.9.1P	99.5	1261.70	14.18
Toluene	2.232	.11	108-88-3	184.24.4P	100	563.60	14.33
1,2-dimethylcyclohexane	4.961	.25	583-57-3	5445.7.1P	99.7	1256.40	15.24
Nonane (c9)	4.462	.22	111-84-2	378.29.3P	99.5	1132.20	15.97
Ethylbenzene	4.484	.23	100-41-4	174.8.2P	99.9	1133.30	16.13
1,2,4-trimethylcyclohexane	4.223	.21	2234-75-5	8168.7.1P	99.5	1071.70	16.17
O-xylene	4.218	.21	95-47-6	192.29.2P	99.2	1073.50	16.80
Decane (c10)	4.219	.21	124-18-5	415.7.1P	99.5	1070.50	17.73
N-propylbenzene	4.963	.25	103-65-1	179.29.1.1P	99.9	1254.40	17.74
1,2,4-trimethylbenzene	4.471	.23	95-63-6	190.1.3P	99.1	1139.00	18.44
1,2,3-trimethylbenzene	4.967	.25	526-73-8	869.3.17P	97.2	1290.30	19.03
N-undecane (c11)	3.47	.17	1120-21-4	379.29.1P	99.5	880.60	19.17
Trans-decalin	4.222	.22	493-02-7	2350.7.1P	99.9	1067.00	19.50
1,2,4,5-tetramethylbenzene	4.981	.25	95-93-2	2327.7.2P	99.9	1258.80	20.42
Dodecane (c12)	3.227	.16	112-40-3	416.29.1P	99.34	820.20	20.66
Pentamethylbenzene	4.976	.25	700-12-9	8750.7.1P	99.1	1267.70	23.35
N-tetradecane (c14)	4.472	.23	629-59-4	417.29.4P	99	1140.50	23.80

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



CHROMATOGRAM



[Injection Port SPL1]
 Temperature : 250.0 C
 Total Flow : 127.1 mL/min
 Column Flow : 1.25 mL/min
 Linear Velocity : 23.6 cm/sec

[Column Oven]
 Initial Temperature : 35.0 C
 Equilibration Time : 0.5 min

=Column Oven Temperature
 Program=
 Total Program Time : 29.00 min

Rate (C/min)	Temperature (C)
Hold T	----
1	10.0 70.0 0.00
2	20.0 120.0 0.00
3	10.0 200.0 0.00
4	20.0 240.0 10.00

[Column Information]
 Column Name : ZB-624
 Film Thickness : 1.40 um
 Column Length : 60.0 m
 Inner Diameter : 0.25 mm ID

[Detector]
 VUV VGA-100

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: Flammable Neat Mixture, Lot no. N/A, 25.2487 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 2000 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 IZ391-IS4 by NSF-ISR and accredited to ISO 17025:2005 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