Gravimetric Certificate

LGC | DR EHRENSTORFER™

ISO 17034 Reference Material

Product Identification

Article Code: DRE-L20950045AL
Article Name: PAH-Mix 45
Formula:
Mol. Weight:
CAS No.:

Lot Number: G990484AL
Expiry Date: 02.01.2022
Storage Temperature: 20°C ± 4°C

Storage and handling: The RM should be stored in the original sealed bottle at the temperature given above. After use the bottle should be tightly closed and protected from moisture and light. The expiry date is valid for original sealed bottles under recommended storage conditions only.

Gravimetric Data

Compound Name:	CAS:	Conc. (mg/l):	Expanded Uncertainty U (mg/l):	Lot. No.:	Purity (%):	Weight (mg):	RT (min):
Naphthalene	91-20-3	10.00	0.22	R986921	99.4	2.013	5.89
Acenaphthylene	208-96-8	9.99	0.21	116198	99.2	2.014	13.86
Acenaphthene	83-32-9	10.00	0.23	G172168	99.6	2.009	15.29
Fluorene	86-73-7	10.01	0.21	129961	99.0	2.022	19.51
Phenanthrene	85-01-8	9.98	0.21	G156210	99.0	2.016	28.46
Anthracene	120-12-7	9.98	0.23	129951	99.5	2.006	28.92
Fluoranthene	206-44-0	10.01	0.21	40919	98.5	2.033	41.05
Pyrene	129-00-0	9.99	0.21	130640	98.5	2.028	43.22
Benz[a]anthracene	56-55-3	9.98	0.24	50421	98.7	2.023	56.85
Chrysene	218-01-9	10.06	0.21	130547	99.9	2.014	57.22
Benzo[b]fluoranthene	205-99-2	10.01	0.24	149408	99.7	2.009	68.15
Benzo(k)fluoranthene	207-08-9	10.02	0.28	121520	98.5	2.034	68.40
Benzo(e)pyrene	192-97-2	10.02	0.26	G150148	98.4	2.036	70.60
Benzo(a)pyrene	50-32-8	9.99	0.21	738373	99.0	2.019	71.01
Perylene	198-55-0	9.98	0.21	41230	99.0	2.016	71.83
Indeno(1,2,3-c,d)pyrene	193-39-5	9.99	0.21	149840	99.4	2.010	80.95
Dibenz[a,h]anthracene	53-70-3	10.00	0.24	149750	98.5	2.030	81.42
Benzo(g,h,i)perylene	191-24-2	10.00	0.32	984427	94.2	2.124	82.83

Solvent:	Solvent Lot:	Exact Quantity (ml):
Acetonitrile	17067085	200.00

The uncertainty of this standard is calculated in accordance with the ISO 17034 and EURACHEM/CITAC Guide - Quantifying Uncertainty in Analytical Measurement, Second Edition. The expanded uncertainty is U(exp) = u(RM) x k, where k is the coverage factor at the 95% confidence level (k=2). Uncertainty u(RM) is based on the combination of the uncertainties associated with each individual operation involved in the analysis of the product: $u(RM) = \sqrt{u(char)^2 + u(bb)^2 + u(lts)^2 + u(sts)^2}$; u(char) is the uncertainty of characterisation; u(bb) uncertainty of homogeneity test; u(lts) uncertainty of stability test long-term; u(sts) uncertainty of stability test short-term. u(lts) and u(sts) are not included in the calculation as the stability statement is based on real evidence opposed to simulation.
Minimum sample: 1 ml is recommended as the minimal sample amount. If less material is used, it is recommended to increase the certified uncertainty by a factor of two for half sample and a factor of four for a quarter of sample.
Intended use: Use this RM as calibrant for chromatography or any other analytical technique.

Analytical Data

Traceability of chromatography: To the International System of Units (SI).

Instrument:	GC/FID	Injector:	320°C
Detection:	FID	Initial Temp:	120°C for 4 min
Column:	Optima-5MS, 0.25 µm, 0.25 mm	End Temp:	320°C for 16 min
Inj.-Vol.:	2 µl	Gradient:	2°C/min
Flow:	1.0 ml/min		

Comment

Traceability: The balances used are calibrated with weights traceable to the national standards (DKD).
Calibrated class A glassware is used for volumetric measurements.

Attachment: Exemplary chromatogram of given method

Certificate Revision 1 - 02.01.2019 - M. Beck

Certified on: 02.01.2019
Certified by: M. Beck
RM Release

The LGC Labor GmbH, accreditated by DAkkS as indicated by the accreditation number D-RM-19883-01 & D-PL-19883-01, has shown competence based on ISO 17034:2017 with relevant parts of DIN EN ISO/IEC 17025:2018 for production of certified reference materials in form of organic pure substances and in form of single and multi-component solutions of organic pure substances.

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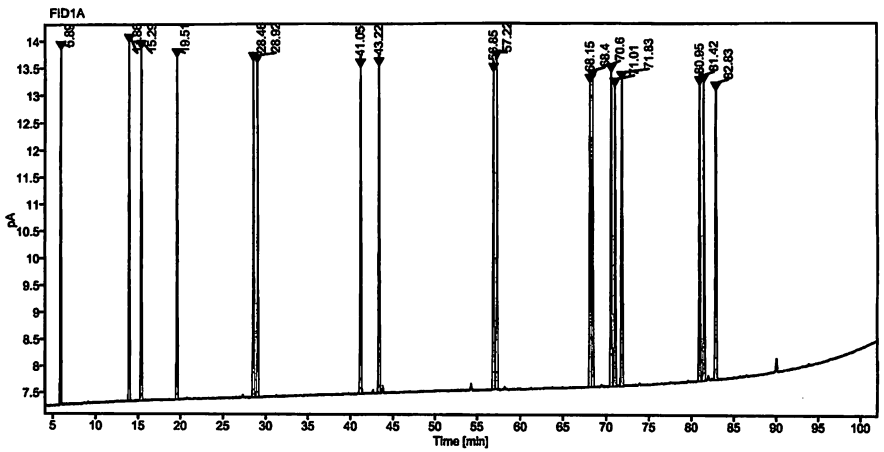
The warranty for this product is limited to the purchasing price of this product.

17.12.18
SS

Data file:	20950045-08-r001.dx	**Instrument:**	FID 2
Sample name:	G990484AL	**Sequence Name:**	2018KW50-1214a
Inj. volume [µl]:	2.0	**Injection date:**	12/14/2018 7:31:53 PM
Acq. method:	PAH_L_2.amx	**Location:**	64
Sample Description	PAH-Mix 45		



Signal: FID1A

Nr.	RT [min]	Area [pA*s]	Height [pA]	Area%	Width [min]
1	5.89	33.94683	6.58	4.62	0.072
2	13.86	34.75376	6.64	4.73	0.078
3	15.29	34.98909	6.52	4.76	0.076
4	19.51	36.16134	6.33	4.92	0.078
5	28.46	39.00341	6.22	5.31	0.396
6	28.92	39.35355	6.18	5.35	0.077
7	41.05	42.00825	6.02	5.71	0.085
8	43.22	42.54804	6.03	5.79	0.085
9	56.85	42.86448	5.85	5.83	0.089
10	57.22	43.68079	6.08	5.94	0.089
11	68.15	43.02596	5.60	5.85	0.343
12	68.40	43.27664	5.68	5.89	0.328
13	70.60	44.01730	5.79	5.99	0.396
14	71.01	42.89652	5.52	5.83	0.445
15	71.83	43.57924	5.63	5.93	0.420

Nr.	RT [min]	Area [pA*s]	Height [pA]	Area%	Width [min]
16	80.95	43.41366	5.44	5.90	0.412
17	81.42	43.28815	5.48	5.89	0.428
18	82.83	42.40492	5.32	5.77	0.433
	Sum	735.21			