

Gravimetric Certificate

Dr. Ehrenstorfer

Product Identification

20950001 PAH-Mix 1

Please note: The expiry date is valid under recommended storage conditions only.

Reference Materials for Residue Analysis

Expiry Date 26.04.2022

Lot Number 139535CY

Store at 20°C in the dark

Gravimetric Data

Product Name	CAS	Final Conc. (mg/l)	Lot. No.	Purity (%) Conc. (mg/l)	Weight/Volume	RT (min.)
1 Benzo[b]fluoranthene	205-99-2	2.000	41223	99.900	1.005 mg	9.49
2 Benzo[k]fluoranthene	207-08-9	2.000	121520	98.500	1.015 mg	14.34
3 Benzo(ghi)perylene	191-24-2	2.000	121528	99.300	1.005 mg	15.23
4 Benzo(a)pyrene	50-32-8	2.000	122099	98.800	1.015 mg	15.87
5 Fluoranthene	206-44-0	10.000	40920	99.000	5.050 mg	17.44
6 Indeno(1,2,3-c,d)pyrene	193-39-5	2.000	41220	98.900	1.010 mg	18.25

Solvent Information

Solvent	Lot No.	Exact Quantity (ml)
Cyclohexane	D6F046086H43	500.00

Analytical Data

Detection: HPLC/DAD

Column:

Inj.-Vol.: 10.00 µl

Flow: 1.0 ml/min

Method Details:

Eluent A: Acetonitrile:H₂O 2:3 for 1 min

Eluent B: Acetonitrile:H₂O 9:1 for 5 min

Eluent A -> Eluent B: 16 min

Identity check RT, UV

Comment Column: Nucleodur C 18 PAH EC 3 µm 150 x 3 mm
No chromatogram available.

The uncertainty/tolerance of this standard is +/- 8.0 %, calculated in accordance with the EURACHEM/CITAC Guide - Quantifying Uncertainty in Analytical Measurement - Second Edition. The uncertainty given is the expanded combined uncertainty and represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The expanded uncertainty is U_w which is $U_c(y) \cdot K$, where K is the coverage factor at the 95% confidence level ($K=2$). The expanded uncertainty is based on the combination of uncertainties associated with each individual operation involved in the preparation of this product.

Certified on 26.04.2017

by M. Beck



The Laboratory LGC Labor GmbH is accredited by DAkkS as indicated by the Accreditation Number D-RM-19883-01 & D-PL-19883-01 has shown competence based on ISO Guide 34:2009 with relevant parts of DIN EN ISO/IEC 17025:2005 for production of certified reference materials in form of organic pure substances and in form of single and multi-component solutions organic pure substances.

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

1. Application:

This standard solution is designed for calibration or recalibration of chromatographic systems for the determination of the specified chemical compounds concerning identity and quantification. The product can also be used as reference material for interlaboratory studies to validate analytical procedures.

2. Raw material:

All raw materials used to prepare this standard solution are of the highest purity. After our production process each material is checked by several of the following methods, if applicable: UV-, IR-Spectroscopy, Elemental analysis, chromatographical properties (GC/FID, GC/ECD, GC/MSD, HPLC/DAD, HPLC/MSD, TLC) and physical properties (phase, colour, odor, melting point) and Karl-Fischer for detection of traces of water.

3. Manufacturing

Prior to the production for each standard solution we calculate the necessary weight of the neat material, compensate the difference of the purity of the compound to 100%. We use an electronic scale capable of weighing to 0,000001 g with a built in automatic calibration function, which is executed minimum once a week. Once a month the balance is calibrated with weights complying with the OIML-IR-20 design requirements and traceable to the national prototype of the Physikalisch-Technische Bundesanstalt, Braunschweig, the German office of weights and measurements. Every year the balance is calibrated by the manufacturer service technician. This company is also certified by the DQS following ISO9001. All steps are documented conform to ISO 9001 requirements. The single components are weighed and filled into volumetric flask (class A glassware) with the exact quantity of solvent as indicated on the certificate. Solvents are stored and handled in special rooms, which have the constant ambient temperature required from the manufacturer of the volumetric equipment. The tolerance of the weighing procedure and the dilution error adds to a maximum of $\pm 1.0\%$.

4. Packaging and Storage:

The final formulation was packaged in amber glass ampoules and then sealed to prevent photodegradation and evaporation. Every reference material is stored under controlled condition. One sample of each lot is kept according GLP rules to allow a recheck of the specific lot even years after the last item was sold.

5. Stability:

In regular intervals each lot is checked for stability. We guarantee the stability of the solution until the date of expiry given on the Gravimetric Certificate. In case, that the tests show a degradation within the shelf life period, the customer will be notified. We recommend to store the ampoules in the dark at $20^{\circ}\text{C} \pm 4^{\circ}\text{C}$

6. Gravimetric Certificate:

The documentation gives all the data of the production process with all the information necessary for traceability of each lot. Following GLP rules you are obliged to note the used product, lot number of the product, purity, exact weight/quantity of the product, name of the solvent, lot number of the solvent, exact quantity of the solvent, date of production, date of expiry and signature of the person in charge. Copies have to be authorized by stamp, signature of the person in charge according to your quality management handbook and date of authorization.

7. Analytical Quality Control

The summary of the quality control procedure is documented in the separate Certificate of Analysis. Our company holds the Quality System Certificate DQS-Reg.No.:002874 QM08 for the standard from the ISO 9001 / EN 29000 series and the scope as specified. The audit performed by the DQS has verified, that our quality system fulfills the requirements of DIN ISO 9001. The company is accredited by DAkkS as indicated by the Accreditation Number D-RM-19883-01 and D-PL-19883-01 has shown competence based on ISO Guide 34_2009 with relevant parts of DIN EN ISO/IEC 17025:2005 for production of certified reference materials in form of organic pure substances and in form of single and multi-component solutions organic pure substances.