

National Certified Reference Material(NCRM)

Code: GBW08740



Reference Material Certificate

4,4'-Dibromobiphenyl (PBB15) in Isooctane



Batch Number:

Certification Date:

Period of Validity:



Reference Material Producer: National Institute of Metrology

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Version: 1.0



This certified reference material (CRM) mainly applied in 4,4'-Dibromobiphenyl (PBB15, CAS No. 92-86-4) measurement in the fields of environmental protection, food safety and inspection and quarantine, and also can be used for measurement quality control and assessment of relevant analytical methods.

1. Sample Preparation

This CRM was prepared at national institute of metrology (NIM) by weighing and dissolving PBB15 pure materials in chromatographic grade isooctane.

2. Traceability and Characterization Method(s)

Qualitative analysis of the purity of this standard material was performed by gas chromatography-mass spectrometry (GCMS) and nuclear magnetic resonance (NMR); qNMR and mass balance method which use HPLC-DAD to determine related structure impurities, Thermogravimetric Analysis (TGA) to determine Water, Residual solvent and Non-volatiles, were used to quantify the main components.

Through using validated absolute quantitative measurement method and calibrated measuring instruments which meet metrological traceability requirements, the values of this CRM can be traced to kilogram (kg) and mole (mol) of SI basic unit.

3. Property Value and Uncertainty

The standard value and expanded uncertainty of naphthalene are as follows:

Code	Analyte	Certified value ($\mu\text{g/mL}$)	$U_{\text{rel}}(\%), (k=2)$
GBW08740	PBB15	50.0	2

The coverage factors were chosen to obtain an approximate 95 % level of confidence. The uncertainty evaluation considered sources from characterization, between-unit homogeneity and stability.

4. Homogeneity and Stability Assessment

According to national technical specification of JJF1343 (equivalent to ISO Guide 35), the samples were randomly obtained and determined using HPLC-DAD for the homogeneity and stability check. From test results, no statistically significant heterogeneity and instability were found.

The period of validity of this CRM is 2 years since the date of certification, provided the CRM is handled and stored in accordance with the instructions given in this certificate. The producer will keep monitoring the stability of this CRM and make a notice to customers if any significant change happens within the period of validity.

5. Packaging, Storage and Use

Packaging: The batch of material is divided and sealed into 2 mL clean brown glass ampoule bottles, each containing approximately 1 mL of solution.

Storage : Store in ambient temperature and protected from light. Equilibrate at room temperature (20 ± 3) °C and shake evenly.

Use: Once opened, the ampoule should be used immediately, and should not be used as a standard substance after re-sealing. This standard substance is a toxic and hazardous substance. Pay attention to protection when using it. Wear masks and latex gloves to avoid inhalation and direct contact with skin.

Statement

1. The reference material is only for lab study and analytical testing. In case of any complaint due to the improper use or storage by the user, the institute will bear no responsibility.
2. After receiving it, please immediately check variety, quantity and packaging. Relevant compensation is only limited to the reference material itself.
3. The institute is only responsible for the complete certificate affixed with the “Dedicated Seal for Reference Material of National Institute of Metrology”. Please properly keep this certificate.
4. To obtain more application related information, please contact the Department of Technical Consultation.

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