National Certified Reference Material (NCRM)

Code：GBW 10162

Reference Material Certificate

Four Polycyclic Aromatic Hydrocarbons in Olive Oil

Batch Number：19001

Certification Date：January 2018

Period of Validity：December 2020

Reference Material Producer：National Institute of Metrology

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Version：1.0

The certified reference material can be used for the detection of polycyclic aromatic hydrocarbons in oil and related food, and also can be used for analytical methods validation, and quality assurance when assigning values to in-house materials.

1. Sample Preparation

The Benz(a)anthracene (BaA), Chrysene (Chr), Benzfluoranthene (BbF) and Benzoapyrene (BaP) spiked olive oil was selected as the candidate of reference material. After homogeneous mixing, the material was packed in the aluminum bottle and filled with nitrogen, and further, each unit was vacuum packed in aluminum foil bag.

2. Traceability and Characterization Method

The sample was extracted by solvents and clean-up by SPE method before measurement. The certified value of BaA,Chr, BbF, and BaP were determined by GC-IDMS method. Through the use of certified reference materials including GBW(E)080478, GBW(E)080476, and NIST SRM1647f，the certified values can be traced to SI units, kilogram and mole. The certified values were also validated through CCQM-K146 key comparison: BaP in Olive Oil, with the same material as comparison samples.

3. Property Values and Uncertainties

The property values and expanded uncertainties are as follows：

Code	Name	Analyte	Certified value（μg/kg）	Expanded uncertainty （μg/kg, *k*=2）
GBW10162	Four Polycyclic Aromatic Hydrocarbons in Olive Oil	BaA	5.83	0.40
		Chr	6.05	0.51
		BbF	5.00	0.36
		BaP	8.69	0.54

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）, GC-IDMS methods and randomized sampling rule were employed to evaluate the homogeneity of the material. The samples showed good homogeneity. Using same measurement methods, the samples also showed good stability during stability assessment.

The minimum sample intake is 0.5g, the property values and its associated uncertainties are only guaranteed if the minimum sample size is respected. The certification of this CRM is valid until December 2020, 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 material was divided into clean aluminum bottles and screw cap and each unit was vacuum packed in aluminum foil bag. Each one contains 30g of sample.

Storage: The CRM should be kept in dark, cool and dry place. And it is recommended to use it one time after being opened.

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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