National Certified Reference Material (NCRM)

Code：GBW06169

Reference Material Certificate

Purity of Tripropyl phosphate

Batch Number：

Certification Date：

Period of Validity：

Reference Material Producer：National Institute of Metrology Address：

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Version：1.0

The certified reference material is mainly used as a measurement standard for the detection of tripropyl phosphate in samples such as food, environment, and plastics, as well as for quality control in measurement laboratories, method evaluation and validation, and sample assignment.

1. Sample Preparation

The material is Tripropyl phosphate. Formula: $C_9H_{21}O_4P$, CAS number: 513-08-6. The certified reference material was packaged into clean dark glass bottle.

2. Traceability and Characterization Methods

The qualitative analysis for principal component of the material is obtained by high resolution mass spectrometry (HRMS), nuclear magnetic resonance (^1H and ^{31}P NMR). Moisture content, inorganic impurities and volatile organic compounds are measured by Karl Fischer, ICP-MS and HS-GC-FID respectively. The certified value of Tripropyl phosphate is based on the results of mass balance method, ^1H NMR and ^{31}P NMR method. All the appliances were calibrated.

This Reference Material provides reliable traceability of quantities to the SI base unit of the mol and kg, by applying different principles and validated measurement procedures for the determination of purity. For the quantitative NMR method, the Benzoic Acid (GBW06148) and the Monocrotophos (GBW06409) are adopted as the internal standards. Specific hydrogen and phosphorus resonance peaks are selected for calibration, and the traceability of calibration results is ensured by using calibrated weighing equipment.

3. Property Value and Uncertainty

The property value and expanded uncertainty of TnPP are as follows：

Code	Title	Certified value (%)	Expanded Relative uncertainty (%, *k*=2)
GBW06169	Purity of Tripropyl phosphate	99.4	0.3

Uncertainty contributions arising from characterization as well as homogeneity and stability assessments were taken into consideration.

4. Homogeneity and Stability Assessment

According to national technical specification of JJF1343（equivalent to ISO Guide 33405）, GC-FID method was employed to evaluate the homogeneity and stability of the material. The samples showed good homogeneity and good stability during stability assessment.

The certification of this CRM is valid for 12 months. 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 sample is liquid. The batch material was packed in clean dark glass bottle. Each

one contains 10 mg. The minimum sample intake is 3.0 mg.

Storage: The CRM should be kept in dark and 4ºC . The CRM could be transported at room temperature. Samples could be used after equilibration to room temperature.

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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