Approved by General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China

GBW08706

Certificate of Certified Reference Material

o-Xylene in Methanol

Sample Number:

Date of Certification:

National Institute of Metrology (NIM)

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1. Description of Material & Intended Use

This certified reference material (CRM) is mainly intended for validation and evaluation of analytical method, calibration of instruments and quality control on o-Xylene measurement in many fields, such as environmental monitoring, epidemic prevention, and so on.

2. Preparation

The candidate of this reference material, o-Xylene with known and accurate purity, is diluted with chromatographically pure methanol based on gravimetric-volumetric method.

3. Traceability and certification

Two accurate methods with different principles, high performance liquid chromatography (HPLC) with UV or DAD detector and gas chromatography with FID detector (GC-FID), were used to determine the purity of o-Xylene. The preparing value (formulated value), checked with GC-FID method, is considered as the certified value of the concentration of this CRM.

The traceability of the certified value is ensured by using measurement methods and measuring instruments that meet the requirements of metrology.

4. Certified value and uncertainty

The certified value and the relative expanded uncertainties of the CRM are as follows:

Code	Certified value / $mg \cdot ml^{-1}$	Relative expanded uncertainty / %, k=2
GBW08706	1.00	3

Contributions from purity analysis for o-Xylene, sample weighing, and the volume size in the preparing process were considered in uncertainty evaluation of the certified reference material.

5. Homogeneity and Stability Testing

According to the requirement of national criterion for primary certified reference materials, the homogeneity and stability testing were carried out through random sampling by using GC-FID method. The *F*-test method was used and no statistically significant difference among bottles was observed. The reference material is in good homogeneity and stability. The minimum sample intake of this reference material is 1μg.

The valid period of this RM is two years from the date of certification. The stability of this RM is regularly monitored by NIM. Any change of the certified value during this period will be informed to the

customers in time.

6. Instructions for use

- This certified reference material is sealed up in glass ampoules and each ampoule contains about 2ml of o-Xylene solution.
- This certified reference material should be kept in cold and dark place. Before using, the CRM should be equilibrated to room temperature (20±3℃) and thoroughly mixed by inverting the ampoule for several times. It should be used immediately after being opened and **CANNOT** be used repeatedly.
- o-Xylene is toxic and harmful, so it is recommended to make necessary protection when using, such as wearing latex gloves and face mask. Please avoid inhalation and direct physical contact!

STATEMENT

1. The CRM is limited to the use of scientific research and analytical measurement. NIM is not responsible for any loss caused by improper use and storage of the CRM by the customer. Any compensate can only cover CRM itself.
2. Please check the status of reference materials as soon as the sample arriving. The certificate is only valid with the whole file and special stamp for NIM RM distribution. Please keep the integrality of the certificate.
3. If more information related to the use of the CRM is needed, please contact the technical enquiries section.