

Approved by General Administration of Quality Supervision,

Inspection and Quarantine of the People's Republic of China

GBW(E) 081063

Certificate of Reference Material

Chlorinated Hydrocarbons Mixtures in Methanol

Sample Number:

Date of Certification:

National Institute of Metrology (NIM)

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Website: www.nim.ac.cn ; www.ncrm.org.cn

1. Description of Material & Intended Use

This certified reference material (CRM) is mainly used in areas such as environmental monitoring and epidemic prevention, and for assessment of measurement methods, calibration of instruments and quality control in Chlorinated Hydrocarbons analysis.

2. Sample Preparation

This CRM is formulated with Dichloromethane, 1,1-dichloroethane, 1,2-dichloroethane, trichloroethylene, tetrachloroethylene, Monobromo-dichloro-methane, Dibromo-monochloro-methane and (E)-1,2-dichloroethene purity reference material as the starting material and chromatographically pure methanol as the solvent based on gravimetric-volumetric method.

3. Traceability and Certification

The traceability linkage is established using formulation protocols, measuring protocols and instruments which meet the needs of the metrological community to be served. GC (FID detector) is carried out to determine and certify the purity of CRM through cooperation of multiple laboratories. The formulated value is taken as certified value of the concentration of this CRM, the certified value of this RM is checked by GC (FID detector).

4. Property Value and Uncertainty

Name	Certified value (mg/mL)	Relative expanded uncertainty (%) ($k=2$)
Dichloromethane	0.134	5%
1,1-dichloroethane	0.102	
1,2-dichloroethane	0.102	
trichloroethylene	0.093	
tetrachloroethylene	0.104	
Monobromo-dichloro-methane	0.089	
Dibromo-monochloro-methane	0.104	
(E)-1,2-dichloroethene	0.131	

Uncertainty of certified value is a sum of those arising from the purity of RM starting material, and formulation process including weighing and volume filling.

5. Consistency Check and Stability Test

According to the requirement of national technique criterion on primary CRM, the CRM aliquots are randomly sampled, and consistency check and stability test in terms of the concentration are performed via GC (FID). The results demonstrated good consistency (by F

test) and stability.

The period of validity of this CRM is set for 12 months from the Date of Certification. The stability of this CRM will be monitored by NIM in the future. The user will be promptly informed, if the value is found to vary during the period of validity.

6. Instructions for Package, Storage and Usage

1. Package: This CRM is packaged in a glass ampoule, and each ampoule contains 2 mL.
2. Storage and Usage: This CRM should be stored in cool and dark condition. Prior to use, the RM should be equilibrated to room temperature (20 ± 3 °C) and mixed well by shaking. The CRM should be use immediately once the ampoule is open. Reusing of this CRM is prohibited. This RM is toxic and harmful. Caution shall be taken in use. The operator shall wear a face mask and latex gloves in order to avoid inhalation or skin contact.

STATEMENT

1. This CRM has a limited use in scientific research and analytical measurement. NIM is not responsible for any loss caused by improper use and storage of this CRM by the customer.
2. Please check the status of reference materials as soon as the sample arrives. The incurred maximum compensation will be exclusively restricted to the CRM itself, and no others should be claimed.
3. The certificate is only valid with the complete file stamped by NIM RM. Please keep the integrity of the certificate.
4. If more information about the CRM is required, please contact the technical service section.

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