

Approved by General Administration of Quality Supervision,



Inspection and Quarantine of the People's Republic of China



国家标准物质资源共享平台
www.ncrm.org.cn

GBW(E) 080274

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Certificate of Reference Material

COD Standard Solution



Sample Number:

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Date of Certification:

国家标准物质资源共享平台
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Producer: National Institute of Metrology

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1. Description of Material & Intended Use

This certified reference material (CRM) is mainly used for calibration of instruments, quality control and assessment of measurement methods and the like in chemical oxygen demand test (Mn method).

2. Sample Preparation

This CRM is formulated with pure glucose as the starting material and pure water containing no organic materials (purified by reverse-osmotic method, ion exchange and quartz distillation) as the solvent according to gravimetric method in clean rooms with room temperature at $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The aliquots are packaged in 20 ml ampoules and autoclave sterilized.

3. Traceability and Certification

This RM is determined and certified by volumetric method. The property value of this RM is traced to GBW primary CRM via GBW (E) 080458 potassium permanganate RM and GBW06107 sodium oxalate RM. The traceability linkage is established using formulation protocols, measuring protocols and instruments which meet the needs of the metrological community to be served.

4. Certified values and uncertainties

Number	title	Certified value of concentration (mg/L)	expanded uncertainties (%; $k=2$)
GBW (E) 080274	Chemical oxygen demand test (Mn method)	238	3

Uncertainty of certified value is a sum of those arising from measuring reproducibility, weighing, the determination of end point, potassium permanganate RM solution, sodium oxalate RM solution, consistency and stability.

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 is performed via potassium permanganate weighing titration, the results demonstrated good consistency (by F test). According to the same method based on the rule of shorter intervals at early sampling stage and longer intervals at later stage, the CRM aliquots are randomly sampled, stability test is performed at regular intervals, and the results demonstrated good stability.

The period of validity of this CRM is one year since 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

The CRM aliquots are packaged in glass ampoules, and each bottle contains 20 mL. The CRM should be kept in cool, dark and dry.

Prior to use, the sample should be equilibrated to 20 ± 5 °C, and mixed well by shaking. 10 mL of RM is transferred from ampoules to 1L volumetric flask (dilution by 1/100 for usage), and diluted with pure water to the volume. The temperature of boiling water bath should be kept at 100 °C. Cover the sample with watch glass when heated in boiling water bath. The reaction temperature for sodium oxalate and potassium permanganate should be kept at 60-80 °C in acidic condition. Blank control is needed.



STATEMENT

1. The CRM is only limited in use of scientific research and analytical measurement. Any loss caused by improper use and storage by customer will not be responded by maker.
2. Please check the kind, number and package as soon as the sample arrives. The compensation does not relate to any loss except for the CRM.
3. The maker only answers for the intact certificate with CRM cachet of NIM. Please keep the certificate appropriately.
4. Please contact with technical consultant section, if more information related to the use of the CRM is needed.

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