

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) 130035

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Certificate of Reference Material

Benzoic Acid



Sample Number:



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Date of Certification:

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1. Description of Material & Intended Use

This certified reference material (CRM) is mainly used in areas such as electric power, coal, war industry, scientific research and the like, and for certification/calibration of Oxygen Bomb Calorimeter (the major instrument for measuring calorie), assessment of measurement methods, control of production process and the like.

2. Sample Preparation

This CRM is formulated with analytical reference material benzoic acid by physical sublimation or other purification refining, the purity is better than 99.97% by molar ratio. The RM is formulated into tablet of about 0.5g and the aliquots are packaged in clean plastic bottle or glass bottle.

3. Traceability and Certification

The property value of this RM is determined and certified by direct comparison of the value of high-precision calorimeter and that of national primary calorie RM benzoic acid (GBW13201). The certified value is traced to the national primary standard of heat of combustion recorded in National Institute of Metrology via calorie RM benzoic acid.

4. Property Value and Uncertainty

The certified value is 26484 J/g; expanded uncertainty is 0.1% ($k=2$).

Uncertainty of certified value is a sum of those arising from uncertainty of primary RM, primary RM and the repeatability of secondary RM (to be certified) responding to high precision calorimeter, as well as formulation process including weighing.

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 long term stability test in terms of the concentration are performed via value determination. F test is used to evaluate the consistency, t test is used to evaluate the stability, and the result demonstrates good consistency and stability.

The period of validity of this CRM is set for 10 years 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

Package: tablet: each is about 0.5 g; bottle: each 35g±0.5g;

Storage: RT, dry condition, kept from strong light;

Cautions for handling: the sampling apparatus should be clean, dry and without contamination. As for certification/calibration of Oxygen Bomb Calorimeter (thermal capacity is 10000J/°C), the sampling amount is 0.9 g - 1.1 g, and the accuracy is 0.0001g,

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 integrality of the certificate.
4. If more information about the CRM is required, please contact the technical service section.

