

National Certified Reference Material (NCRM)

Code: GBW08698



Reference Material Certificate

Standard solution of Neodymium



Batch Number:

Certification Date:

Period of Validity:



Reference Material Producer: National Institute of Metrology

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Version: 1.0

the sample of certificate for reference

This certified reference material is intended to use as a primary standard for the quantitative determination of neodymium, for the quality control of testing laboratory, calibration of analytical instrument, verification and evaluation of analysis method in the fields of environment, geology etc.

1. Sample preparation

The reagent neodymium oxide with accurately known purity is used as the raw material of this CRM, it is dissolved in highly pure hydrochloric acid, then diluted with deionized water in clean room at $(20 \pm 2)^\circ\text{C}$ by gravimetric method.

2. Traceability and Characterization Method

The certified value was calculated as the mass fraction value obtained through gravimetric preparation using high-purity reagent, and checked with ICP-OES method. The contents of 72 metal impurities are determined by GDMS; the contents of 4 non-metal element impurities are determined by inert gas fusion-infrared thermal conductivity method, and combustion infrared method. The contents of impurities of 5 inert gas elements and 12 radioactive elements are reasonably evaluated. After deducting the contents of 93 impurity elements, the purity of the high-purity raw material is obtained.

Through the use of validated measurement method and calibrated measuring instruments meeting metrological traceability requirements, the property value of this CRM can be traced to SI Units kilogram (kg) and mole (mol), and the National Legal Unit of volume, liter (L).

3. Certified value and uncertainty

Code	Certified value ($\text{mg}\cdot\text{L}^{-1}$)	Relative uncertainty ($k=2$)	Matrix (V/V)
GBW08698	1000	0.4%	10%HCl

The coverage factor was chosen to obtain an approximate 95% level of confidence. The uncertainty evaluation considered sources from purity of materials, weighing for high purity materials and solution, homogeneity and stability.

4. Homogeneity and Stability Assessment

According to national technical specification of JJF1343 (equivalent to ISO Guide 35), homogeneity and stability study for this certified reference were carried out through random sampling by using ICP-OES method. From the results, the results demonstrated good homogeneity and stability of this CRM.

The period of validity of this CRM is 24 months. The stability of this CRM will be regularly monitored by NIM. During the validity period, the customer will be informed of any change of the certified value just-in-less-time.

5. Packaging, storage and Use

Packaging: The CRM is sealed up in an ampoule bottle and each one contains about 20mL the sample of certificate for reference

of the standard solution.

Storage: This CRM should be kept in cold and dark place.

Use: Prior to use, the CRM should be equilibrated to room temperature (20 ± 2)°C and thoroughly mixed by inverting the bottle. It should be used once after being opened and CANNOT be used repeatedly. And it should be prevented from contamination while using.

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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