National Certified Reference Material (NCRM)

Code：GBW10104

Reference Material Certificate

Purity of 1-Aminohydantoin hydrochloride

Batch Number：

Certification Date：

Period of Validity：

Reference Material Producer：National Institute of Metrology

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Version：1.0

The present CRM mainly applies to veterinary drug detection in animal and feed fields, quality control for the producers and testing laboratories, calibration of analytical instruments, verification and validation of measurement methods, etc.

1. Sample preparation

The candidate of reference material was synthesized in laboratoryand purified by recrystallization.After preliminary analysis, including qualitative analysis, purity and homogeneity test, the material was sub-packaged in dry conditions.

Compound	Molecular formula	CAS Number
1-Aminohydantoin hydrochloride （AHD）	$C_3H_5N_3O_2$•HCl	2827-56-7

2. Traceability and Characterization Methods

The qualitative analysis for principal component of the material is obtained by mass spectrometry(MS),ultraviolet spectroscopy(UV),infrared radiation(IR)andmelting point method. HPLCand GC based mass balance approach was used to analyzethe purity. The content of the main component was determined by HPLC-DAD and GC-FID method.Moisture content, non-volatiles/inorganics and volatile organic compounds are measured by Karl Fischer, ICP-MS andpurge and trapGC-MS method.

Through the use of validated absolute quantitative measurement method and calibrated measuring instruments meetingmetrological traceabilityrequirements, theproperty value of this CRM can be traced to the SI unitkilogram (kg) and mole (mol).

3.Property Value and Uncertainty

The property value and expanded uncertainty are as follows:

Code	Name	Propertyvalue (%)	Relative uncertainty(%) (k=2)
GBW10104	Purity of 1-Aminohydantoin hydrochloride	99.4	0.6

The coverage factor was chosen to obtain an approximate 95% level of confidence. The uncertainty evaluation considered sources from characterization, between-unit homogeneity and stability.

4. Homogeneity and Stability Assessment

According to national technical specification of JJF1343(equivalent to ISO Guide 35), the within-bottle and between-bottle homogeneity and stability for this certified reference material were carried out through random sampling of sub-packaged samplesfollowed by HPLC-DAD method. The results demonstrated good homogeneity and stability(4 ℃ for long-term stability) of this CRM.

The minimum sample intake is 2.0 mg. The period of validity of this CRM is 2 years since the date of certification. The stability of this CRM is regularly monitored by NIM, during this 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 packaged inbrown glass vials with screw caps, and eachcontains no less than 100 mg sample.

Storageand transportation:The CRM should be kept in dark, low temperature (4℃),away from light and excessive moisture.This CRM is shipped under ambient temperature.

Use: The CRM should be balanced to room temperature prior to useand sealed as soon as possible after sampling.

Caution: The CRM is toxic and harmful, pay attentionto avoid inhalation or contact with skin whenusing the material.

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 “DedicatedSeal 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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