

National Institute of Advanced Industrial Science and Technology

National Metrology Institute of Japan



Reference Material Certificate

NMIJ CRM 6008-a

No. +++

Uric Acid



This certified reference material (CRM) is produced in accordance with the NMIJ's management system and is in compliance with ISO 17034 and ISO/IEC 17025. This CRM is intended for the calibration of analytical instruments, value-assignment of calibrant, and validation of analytical methods and instruments used for the uric acid analysis.

Certified Value

The certified value of this CRM is given in the table below. The uncertainty of the certified value is the expanded uncertainty obtained by multiplying the combined standard uncertainty by a coverage factor (k) of 2, and it is the half-width of an interval estimated to have a level of confidence of approximately 95 %.

Substance	CAS No.	Certified value Mass fraction (kg/kg)	Expanded uncertainty Mass fraction (kg/kg)
Uric Acid (2,3,6,7,8,9-hexahydro- 1H-purine-2,6,8-trione)	69-93-2	0.996	0.003

Analysis

The certified value of this CRM was the weighted mean of the results obtained by the acidimetric titration and the nitrogen determination using the Kjeldahl method, by giving consideration to the impurity determination performed by the high performance liquid chromatography (HPLC-UV).

Metrological Traceability

The certified value was determined by titrimetry as a primary method of measurement with NMIJ CRM 3005-a (sodium carbonate). The certified value, therefore, is traceable to the International System of Units (SI).

Mutual Recognition Arrangement under Metre Convention

The certified value of this CRM is recognized for international equivalence based on the Mutual Recognition Arrangement under the Metre Convention (CIPM MRA). The calibration measurement capability (CMC) of NMIJ related to this CRM is registered in the Key Comparison Database (KCDB) (see <https://www.bipm.org/kcdb/>) of the International Bureau of Weights and Measures (BIPM).

Expiration of Certification

This certificate is valid for one year from the date of shipment, provided that this CRM remains unopened and is stored in accordance with the instructions given in this certificate.

Description of the Material

The form of this CRM is a white powder of uric acid and 2 g of material was bottled in an amber glass vial. The vial was sealed in an aluminum-laminated plastic bag.

Date of Shipment: XXXXX XX, 20XX

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Instructions for Storage

This CRM should be stored at a temperature between 15 °C and 25 °C in a clean desiccator and shielded from light.

Instructions for Use

Considering homogeneity, more than 100 mg of this CRM should be used for each analysis. This CRM should be used promptly once the vial is opened. This CRM is for laboratory use only and it is not intended for in vivo use. To prepare calibration solution, uric acid must be dissolved completely. Uric acid dissolves slightly in water and more easily in alkaline media.

Precautions for Handling

Refer to the safety data sheet (SDS) on this CRM before use.

Preparation

This CRM was prepared by Wako Pure Chemical Industries, Ltd. Reagent-grade uric acid was bottled into vials under the argon gas atmosphere, and each vial was sealed in an aluminum-laminated bag.

Technical Information

The values given below are not certified values but information values. Moisture determined by the coulometric Karl Fischer titration was 2.2 g/kg at the time of certification. The mass fraction of sodium determined by the inductively coupled plasma atomic emission spectrometry was 0.3 g/kg at the time of certification.

NMIJ Analysts

The technical manager for this CRM is TAKATSU A., the production manager is TAKATSU A., and the analysts are KAWAGUCHI M., EYAMA S., YOSHIOKA M. and TAKASE K.

Information

If substantive technical changes occur that affect the certification before the expiration of this certificate, NMIJ will notify the registered customers. Customer registration on the NMIJ Website (given below) will facilitate notification. Technical reports regarding this CRM can be obtained from the contact details given below.

Reproduction of Certificate

In reproducing this certificate, it should be clearly indicated that the document is a copy.

April 1, 2020

ISHIMURA Kazuhiko
President

National Institute of Advanced Industrial Science and Technology

If you have any questions about this CRM, please contact:
National Institute of Advanced Industrial Science and Technology,
National Metrology Institute of Japan,
Center for Quality Management of Metrology, Reference Materials Office,
1-1-1 Umezono, Tsukuba, Ibaraki 305-8563, Japan
Phone: +81-29-861-4059, <https://unit.aist.go.jp/nmij/english/refmate/>

Date of Shipment: Xxxxx xx, 20xx

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Revision history

April 1, 2015: "Metrology Management Center" was renamed to "Center for Quality Management of Metrology."

Feb 20, 2019: The description on "Mutual Recognition Arrangement under Meter Convention" was added.

The description in "Expiration of Certification" was changed to "one year from the date of shipment."