Date of Shipment: Xxxxx xx, 20xx 5134a02-220526-220714

National Institute of Advanced Industrial Science and Technology

National Metrology Institute of Japan

Reference Material Certificate

NMIJ CRM 5134-a02

No. +++

Secondary Electrolytic Conductivity Standard Solution –Aqueous Solution of Potassium Chloride (0.001 mol kg^{-1})

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 use in the calibration of electrolytic conductivity.

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 %.

Property	Certified value S m^{-1}	Expanded uncertainty S m^{-1}
Electrolytic Conductivity (25 °C)	0.01472	0.00010

Analysis

The certified value of this CRM was determined by using NMIJ CRM 5121-a04 (Electrolytic Conductivity Standard Solution, Aqueous Solution of Potassium Chloride (1 mol kg^{-1})), NMIJ CRM 5122-a03 (Electrolytic Conductivity Standard Solution, Aqueous Solution of Potassium Chloride (0.1 mol kg^{-1})), NMIJ CRM 5123-a05 (Electrolytic Conductivity Standard Solution, Aqueous Solution of Potassium Chloride (0.01 mol kg^{-1})), NMIJ CRM 5123-a06 (Electrolytic Conductivity Standard Solution, Aqueous Solution of Potassium Chloride (0.01 mol kg^{-1})), and the secondary glass cell for electrolytic conductivity.

Metrological Traceability

The certified value was determined based on NMIJ CRM 5121-a04 (Electrolytic Conductivity Standard Solution, Aqueous Solution of Potassium Chloride (1 mol kg^{-1})), NMIJ CRM 5122-a03 (Electrolytic Conductivity Standard Solution, Aqueous Solution of Potassium Chloride (0.1 mol kg^{-1})), NMIJ CRM 5123-a05 (Electrolytic Conductivity Standard Solution, Aqueous Solution of Potassium Chloride (0.01 mol kg^{-1})), NMIJ CRM 5123-a06 (Electrolytic Conductivity Standard Solution, Aqueous Solution of Potassium Chloride (0.01 mol kg^{-1})). The certified value, therefore, is traceable to the International System of Units (SI).

Expiration of Certification

This certificate is valid for 6 months from the date of shipment or until October 12, 2024, whichever comes earlier, provided that this CRM remains unopened and is stored in accordance with the instructions given in this certificate.

Description of the material

This CRM is aqueous solution of potassium chloride (0.001 mol kg^{-1}). This CRM is in the form of a colorless and transparent liquid at ordinary temperature, and approximately 250 mL is kept in a glass bottle sealed in a plastic bag.

Instructions for Storage

This CRM should be kept in the glass bottle sealed in a plastic bag. This CRM should be stored in a clean place at a temperature

between 15 °C and 30 °C.

Instructions for Use

The bottle should be opened after reaching to room temperature. Prior to use, the bottle should be shaken gently to be homogenized avoiding the formation of air bubbles. This CRM should be used promptly once the bottle is opened.

Precautions for Handling

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

Preparation

The prescribed amount of potassium chloride was dissolved in the prescribed amount of pure water; the nominal molality is 0.001 mol kg^{-1}. The solution was equilibrated with atmospheric carbon dioxide and then divided into glass bottles; each bottle contains approximately 250 mL of the solution.

NMIJ Analysts

The technical manager for this CRM is OHATA M., the production manager is HIBINO Y., and the analyst is HIBINO Y.

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.

May 26, 2022

ISHIMURA Kazuhiko
President
National Institute of Advanced Industrial Science and Technology

If you have any questions about this CRM, please contact:
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