Safety Data Sheet

1. Identification of the Substance/Mixture and the Supplier

Supplier	:	National Institute of Advanced Industrial Science and Technology (AIST)
Address	:	1-3-1 Kasumigaseki, Chiyoda, Tokyo, Japan
Office in Charge	:	Reference Materials Office, Center for Quality Management of Metrology, National Metrology Institute of Japan
Person in Charge	:	Certified Reference Material Staff
Telephone No.	:	+81-29-861-4059
Emergency Contact	:	Same as above
		Prepared on : June 30, 2025
		Revised on :
		ID Number : 5122002
Identity of Substance/Mixture	:	Certified reference material, NMIJ CRM 5122-b Electrolytic Conductivity Standard Solution – Aqueous Solution of Potassium Chloride (0.1 mol kg^{-1})
Recommended Use of the Chemical and Restriction on Use	:	This reference material is intended for use in electrolytic conductivity calibration. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS Classification:	No classification
GHS Label Element:	－
Signal Word:	－
Hazards Statement:	－
Precautionary Statement:	［Precaution］ Use appropriate personal protective equipment. ［First-aid Action］ If in eyes: Rinse cautiously with clean water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention immediately. If on skin: Wash with plenty of water. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms occur, get medical advice/attention. ［Storage］ Store glass containers sealed in plastic bags in a clean place at temperatures ranging from 15 °C to 30 °C. ［Disposal］ Comply with relevant laws and local regulations. Entrust disposal to a specialised waste disposal company authorised by the prefectural governor.

Hazards not listed above are not classified or cannot be classified.

3. Composition/Information on Ingredients

Substance/Mixture	:	Mixture
Compound 1	:	Water
Content	:	Ca. 99 %
Chemical or structural formula	:	H_2O
Molecuar Weight	:	18.02
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
CAS Number	:	7732-18-5
Compound 2	:	Potassium chloride
Content	:	Ca. 0.7 %
Chemical or structural formula	:	KCl
Molecuar Weight	:	74.55
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (1)-228 Industrial Safety and Health Act : Published
CAS Number	:	7447-40-7
Hazardous Ingredient	:	—

4. First-aid Measures

If inhaled	:	Remove victim to fresh air and keep at rest and warm. Get medical advice/attention.
If on skin	:	Rinse thoroughly with clean water. Remove contaminated clothing, shoes, etc. and seek medical advice.
In case of eye contact	:	Rinse thoroughly with clean water. Seek medical advice.
If swallowed	:	Wash the mouth well with water. Contact a doctor.
Protection of first-aiders	:	Rescuers should wear personal protective equipment.

5.Fire-fighting Measures

Extinguishing Media	:	Use a fire extinguishing agent suitable for surrounding fire.
Fire-Specific Hazards	:	Nothing special
Specific Fire-Fighting Method	:	Eliminate ignition sources at the origin of a fire and put out fire by using extinguishing media. Remove movable containers promptly to a safe place. In the case of immovable containers,

cool their surroundings with sprayed water.

Protection of Fire-Fighters	:	Carry out fire-fighting from the windward in order to avoid breathing hazardous gas. Use personal protective equipment such as fireproof clothing, heat-resistant clothing, protective clothing, compressed air open-circuit self-contained breathing apparatus, compressed oxygen closed-circuit self-contained breathing apparatus, rubber gloves and rubber boots.

6. Accidental Release Measures

Precautions for the human body	:	Wear suitable protective equipment to prevent contamination of skin, eyes and personal clothing.
Protective equipment and emergency measures	:	If indoors, provide adequate ventilation until treatment is complete. Wear suitable protective equipment when working, to prevent splashes, etc. from adhering to the skin or inhaling dust or fumes.
Environmental Precautions	:	Take care to ensure that spilled product is not discharged into rivers, etc., causing environmental impact. Ensure that contaminated effluent is not discharged into the environment without proper treatment.
Recovery and Neutralization	:	Spilled liquid should be absorbed by rags, rags or earth and sand and collected in an empty container, after which it should be washed away using large quantities of water.
Prevention of Secondary Disaster	:	Rope off the area around the leakage site to prohibit entry except by relevant personnel. Work from upwind and evacuate people downwind.

7. Handling and Storage

Handling technical measure	:	Use local ventilation system in indoor handling areas.
Local exhaust ventilation and general ventilation	:	When vapor or mist is generated, seal the source, and provide local exhaust ventilation or central ventilation.
Notes for Safe Collecting and Transaction	:	Avoid rough handling such as turning over, dropping, giving a shock to or dragging containers. Prevent spill, overflow and scattering, and avoid vapor generation. Keep container tightly closed after using this reference material. Wash hands, face etc. thoroughly and gargle after handling this reference material. Restrict drinking, eating and smoking to a designated area. Do not bring gloves and other contaminated personal protective equipment into staff room. Make a place handling this reference material a restricted area to keep out unauthorized people. Use appropriate personal protective equipment to avoid

inhalation and contact with eyes, skin and clothing.
Use local ventilation system in indoor handling areas.

Storage

Appropriate Storage Conditions	:	Store glass containers sealed in plastic bags in a clean place at temperatures ranging from 15 °C to 30 °C.
Safe Container Packaging Material	:	Glass

*Refer to the certificate for appropriate storage conditions and precautions for use as a reference material.

8. Exposure Controls/Personal Protection

Threshold Limit Value

Not specified

Permissible Concentration

・ACGIH TLV-TWA	:	Not specified
・Value recommended by Japan Society for Occupational Health	:	Not specified
・OSHA PEL TWA	:	Not specified

Engineering Controls

Ventilation/Exhaust	:	Local ventilation system or General ventilation system
Safety Control/ Gas Detection	:	Measuring equipment, Detecting tube
Storage Precaution	:	Install safety shower and facilities to rinse eyes and to wash hands in the vicinity of a place handling this reference material and label them clearly. Tightly closed.

Personal Protective Equipment (PPE)

Respiratory System	:	Protective mask, self-contained compressed air breathing apparatus
Hands	:	Protective gloves
Eyes	:	Protective glass
Skin and Body	:	Protective clothing, Protective face mask

Hygiene Controls

Handle this reference material in accordance with industrial health and safety standards.

9. Physical and Chemical Properties

・Appearance, etc.	:	Liquid
・Color	:	Colorless
・Odor	:	Odorless
・pH	:	Neutral
・Melting point	:	No data
・Boiling point	:	No data
・Flashing point	:	Incombustible
・Explosive range	:	No data
・Vapor pressure	:	No data

・Relative vapor density(Air=1)	:	No data
・Specific gravity or bulk specific gravity	:	No data
・Solubility	:	It miscible with water at an arbitrary ratio. When mixed with ethanol, white precipitate (potassium chloride) is precipitated.
・*n*-Octanol/water partition coefficient (Log Po/w)	:	No data
・Auto-ignition temperature	:	Incombustible
・Decomposition temperature	:	No data
・Combustibility	:	Incombustible

10. Stability and Reactivity

◇Chemical Stability
- ・Stable under recommended storage conditions

◇Reactivity
- ・No data

◇Hazardous reactivity
- ・No data

◇Conditions to Avoid
- ・Sunlight, Heat
- ・Contact with water-reactive combustible substance

◇Incompatible hazardous substances
- ・No data

◇Hazardous Decomposition Products
- ・Halides and potassium oxide

11. Toxicological Information

As potassium chloride

Acute Toxicity	Oral Rat LD_{50}＝2600 mg/kg
Carcinogenicity	The available data are not sufficient. There were no findings that suggested carcinogenicity following 2 years of oral administration to rats; however, data in only one species are not sufficient for classification.
Reproductive Toxicity	In an oral administration test to pregnant rats and during the period of organogenesis of mice, no adverse effects on fetuses were observed; however, data on the sexual function and reproductive capacity of parent animals are not sufficient.
Specific Target Organ Toxicity/Systemic Toxicity (Repeated Exposure)	In the two-year oral administration test to male rats, the only effect was gastritis caused by irritation, and the NOAEL was 1820 mg/kg per day. In addition, all effects observed during the 105-day oral administration test of 520 mg/kg per day to female rats was reversible and there was no severe toxic effect. These doses exceed the upper limit of guidance value category 2. It

was reported that no adverse effects were observed after four weeks and six weeks of oral administration of 85 mg/kg and 69 mg/kg per day, respectively, to humans.

Others

The Toxicological Information is based on the information of raw materials, because there is not the available information as the mixture. This reference material is stable under the normal condition, and there is not the danger that a noxious additive ingredient elutes, however, when handling this reference material under special conditions such as the use under the high temperature etc., it is recommended to take safety precautions appropriate to use.

12. Ecological Information

Ecotoxicity

・Crustaceans (Daphnia magna) LC_{50} = 660 (mg/L)48H

Degradability/concentration

・No data.

Bioaccumulation potential

・No data.

Mobility in soil

・No data.

Hazardous to the ozone layer

・No data.

13. Disposal Considerations

Residual Waste	:	Neutralization method Mix gradually into a stirred solution such as milk of lime, followed by dilution with plenty of water. Dispose in accordance with applicable regional, national and local laws and regulations. When the above-mentioned treatments are not possible, entrust disposal of this reference material to a professional waste disposal company licensed by local or national authority.
Contaminated Container and Package	:	Dispose of containers after thoroughly removing their contents.

14. Transport Information

UN Number	:	Not applicable
UN Classification	:	Not applicable
Shipping Name	:	-
Packing Group	:	-
ICAO/IATA	:	-
Marine	:	Enforcement Order Appendix 1 Hazardous Liquid Substance Class Z

Pollutant		Substance
Precautions	:	Transport this reference material carefully while keeping it away from direct sunlight and fire and preventing accidental release due to falling, overturning, etc.

15. Regulatory Information

・No applicable laws and regulations

16. Other Information

Others

The information in this document is not intended to be exhaustive and is based on currently available information and data. The measures given in this document are applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety measures appropriate to each specific application and context of use. This document is intended to provide information and not intended to guarantee anything in handling this reference material.