



SAFETY DATA SHEET

Revision Date 16-Jan-2020

WA11 - AGHS - OSHA

Revision Number 5

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product Identifier

Product Name	Ross Reference Electrode Solution
Product No	2001F4
Synonyms	219613-A01
Pure substance/mixture	Mixture

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Use as laboratory reagent
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Uses advised against	No Information available
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Manufacturer, Importer, Supplier	Thermo Fisher Scientific© Water and Lab Products 22 Alpha Road Chelmsford, MA 01824, USA 1-978-232-6000
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Emergency Telephone	24 Hour Emergency Phone Number CHEMTREC® Within USA and Canada: 1-800-424-9300 Outside USA and Canada: 1-703-527-3887 (collect calls accepted)
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E-mail address	wlp.techsupport@thermofisher.com
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Made in	USA
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2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Reproductive Toxicity	Category 1B

Label Elements

Emergency Overview

Signal Word Danger

Hazard Statements Harmful if swallowed
May damage fertility or the unborn child
Harmful if inhaled
Very toxic to aquatic life



Appearance Amber

Physical State Liquid

Odor None

Precautionary Statements

Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear eye/face protection

Response

IF exposed or concerned: Get medical attention/advice
Specific treatment (see supplemental instructions on the administration of antidotes on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Skin

IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Storage

Store locked up

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

No information available

Other Information

Very toxic to aquatic organisms

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Potassium Iodide	7681-11-0	60 - 70%
Water	7732-18-5	30 - 40%
Boric Acid	10043-35-3	1-3
Iodine	7553-56-2	0.1 - 1.0%
Potassium Hydroxide	1310-58-3	<0.1%

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General Advice

If symptoms persist, call a physician.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion

Clean mouth with water and drink afterwards plenty of water.

Self-Protection of the First Aider

Use personal protective equipment as required. See section 8 for more information. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms and effects, both acute and delayed

Most important symptoms and effects

None reasonably foreseeable

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available

Specific Hazards Arising from the Chemical

No information available.

Explosion Data

Sensitivity to Mechanical Impact None

Sensitivity to Static Discharge None

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required.

Environmental Precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Vapors may accumulate to form explosive concentrations.

Methods and Material for Containment and Cleaning Up

Methods for Containment

Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling

Wear personal protective equipment/face protection

Ensure adequate ventilation

Do not get in eyes, on skin, or on clothing

Avoid ingestion and inhalation

Conditions for Safe Storage, Including any Incompatibilities

Storage

Keep container tightly closed in a dry and well-ventilated place

Store at room temperature in the original container

Protect from direct sunlight

Incompatible Products

No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH
Potassium Iodide	TWA: 0.01 mg/m ³	-	-

7681-11-0	Skin		
Boric Acid 10043-35-3	TWA: 2 mg/m ³ STEL: 6 mg/m ³	-	-
Iodine 7553-56-2	TWA: 0.001 ppm Skin	Ceiling: 0.1 ppm Ceiling: 1 mg/m ³ (Vacated) Ceiling: 0.1 ppm (Vacated) Ceiling: 1 mg/m ³	IDLH: 2 ppm Ceiling: 0.1 ppm Ceiling: 1 mg/m ³
Potassium Hydroxide 1310-58-3	Ceiling: 2 mg/m ³	(Vacated) Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH - National Institute for Occupational Safety and Health

Appropriate engineering controls

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location

Individual protection measures, such as personal protective equipment

Eye/face Protection Wear chemical splash goggles and face shield. If splashes are likely to occur: Face protection shield.

Skin and Body Protection Wear protective gloves/protective clothing.

Respiratory Protection None under normal use conditions. In case of inadequate ventilation wear respiratory protection.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Amber
Odor	None
Odor Threshold	No information available
pH	7.15
PH Range	5.65 - 8.65

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point/freezing point	No information available	
Boiling Point/Range	100 °C / 212 °F	
Flash Point (High in °C)	N/A	
Evaporation Rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor Density	No information available	
Specific Gravity	No information available	
Water Solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	

Autoignition Temperature	-
Decomposition Temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available

Other Information

Softening Point	No information available
Molecular Weight	No information available
VOC Content(%)	No information available
Density	No Information available
Bulk Density	No information available

10. STABILITY AND REACTIVITY

Reactivity

No Information available

Chemical Stability

Stable under normal conditions

Possibility of Hazardous Reactions

None under normal processing

Conditions to Avoid

Extremes of temperature and direct sunlight.

Incompatible Materials

No information available

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	No information available
Eye Contact	No information available
Skin Contact	No information available
Ingestion	No information available

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium Iodide 7681-11-0	-	LD50 > 2000 mg/kg (Rat)	-
Water 7732-18-5	LD50 > 90 mL/kg (Rat)	-	-
Boric Acid 10043-35-3	LD50 = 2660 mg/kg (Rat)	LD50 > 2000 mg/kg (Rabbit)	LC50 > 2.12 mg/L (Rat) 4 h
Iodine 7553-56-2	LD50 = 14 g/kg (Rat)	LD50 = 1425 mg/kg (Rabbit) LD50 > 2000 mg/kg (Rabbit)	LC50 > 4.588 mg/L (Rat) 4 h
Potassium Hydroxide 1310-58-3	LD50 = 284 mg/kg (Rat)	-	-

Information on Toxicological Effects

Symptoms No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

(b) skin corrosion/irritation; Sensitization Category 2.
No information available

Mutagenic Effects No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA
Potassium Iodide	7681-11-0	Not listed	Not listed	Not listed	Not listed
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed
Boric Acid	10043-35-3	Not listed	Not listed	Not listed	Not listed
Iodine	7553-56-2	Not listed	Not listed	Not listed	Not listed
Potassium Hydroxide	1310-58-3	Not listed	Not listed	Not listed	Not listed

Reproductive Effects No information available

STOT - single exposure No information available

STOT - repeated exposure No information available

Aspiration hazard No information available

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 750 mg/kg
ATEmix (inhalation-dust/mist) 13 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Component	Freshwater Algae	Freshwater Fish	Water Flea
Potassium Iodide 7681-11-0	-	LC50: > 100 mg/L, 96h static (Danio rerio)	-
Boric Acid 10043-35-3	-	LC50: = 1020 mg/L, 72h flow-through (Carassius auratus)	EC50: 115 - 153 mg/L, 48h (Daphnia magna)
Iodine 7553-56-2	-	LC50: = 1.67 mg/L, 96h static (Oncorhynchus mykiss)	-
Potassium Hydroxide 1310-58-3	-	LC50: = 80 mg/L, 96hr static (Gambusia affinis)	-

Persistence and Degradability

No information available

Bioaccumulation/ Accumulation

No information available

Mobility

Component	log Pow
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Boric Acid 10043-35-3	-1.09
Potassium Hydroxide 1310-58-3	0.65 0.83

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Methods Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Component	CAWAST
Boric Acid 10043-35-3	Toxic
Potassium Hydroxide 1310-58-3	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT Not regulated

ICAO Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

United States of America Inventory	Complies
CANINV	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

USINV/ TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
CANINV/ DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any

chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

CWA (Clean Water Act)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Potassium Hydroxide 1310-58-3	1000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355)

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Potassium Hydroxide 1310-58-3	1000 lb	-	1000 lb 454 kg

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Component	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5	-	-	X
Boric Acid 10043-35-3	X	-	-
Iodine 7553-56-2	X	X	X
Potassium Hydroxide 1310-58-3	X	X	X

U.S. EPA Label Information

No information available

16. OTHER INFORMATION

Prepared By Regulatory Affairs

Prepared For Thermo Fisher Scientific Inc.©

Issue Date No information available

Revision Date 16-Jan-2020

Reason for revision SDS sections updated.

Disclaimer

IMPORTANT: The information contained in this SDS is correct to the best of our knowledge as of the issue date (or subsequent revision date, if any), and is to be used only as a guide. This SDS does not constitute a guarantee (express or implied) of any kind

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End of Safety Data Sheet