

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****Product Identifier**

**Product Name** Fluoride ISE Electrode Filling Solution  
**Product No** 13-620-431  
**Synonyms** 219585-A01  
**Pure substance/mixture** Mixture

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

**Recommended Use** Use as laboratory reagent  
**Uses advised against** No Information available

**Supplier**

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Made in USA

**SECTION 2: HAZARDS IDENTIFICATION****Classification of the substance or mixture****Physical hazards**

Based on available data, the classification criteria are not met

**Health hazards**

Based on available data, the classification criteria are not met

**Environmental hazards**

Based on available data, the classification criteria are not met

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## Label Elements

## Other Hazards

## NFPA

Health  
0

Flammability  
0

Instability  
0

Physical hazards  
N/A

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

### 3.2. Mixtures

Component	Common Name	CAS-No	Index No.	Weight %
Water	No information available	7732-18-5	KE-35400	70 - 80
Potassium Nitrate	No information available	7757-79-1	KE-29163	>=10 - 20
Potassium Chloride	No information available	7447-40-7	KE-29086	>=5 - <10
Sodium Chloride	No information available	7647-14-5	KE-31387	0.1 - 0.5
Silver Chloride	No information available	7783-90-6	KE-31267	<0.1
Triton® X-100	No information available	9002-93-1	KE-33568	<0.1

## **SECTION 4: FIRST AID MEASURES**

### First aid measures

**General Advice** Use first aid treatment according to the nature of the injury. Get medical attention immediately if symptoms occur. Show this safety data sheet to the doctor in attendance.

**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. Get medical attention immediately if symptoms occur.

**Inhalation** Move to fresh air. Get medical attention immediately if symptoms occur.

**Ingestion** Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Self-Protection of the First Aider** No special precautions required.

### Most important symptoms and effects, both acute and delayed

**Most important symptoms and effects** None reasonably foreseeable

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## Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

## **SECTION 5: FIREFIGHTING 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.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### Personal Precautions, Protective Equipment and Emergency Procedures

#### Personal Precautions

Ensure adequate ventilation. Use personal protective equipment.

#### Environmental Precautions

Should not be released into the environment. See Section 12 for additional ecological information.

### 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.

## **SECTION 7: HANDLING AND STORAGE**

### Precautions for Safe Handling

#### Handling

Wear personal protective equipment

Ensure adequate ventilation

Avoid contact with skin, eyes and 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

Keep away from direct sunlight

#### Incompatible Products

No information available

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

### Control Parameters

Component	CAS-No	Korea	ACGIH TLV	OSHA PEL
Water	7732-18-5	Not listed	Not listed	Not listed

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Potassium Nitrate	7757-79-1	Not listed	Not listed	Not listed
Potassium Chloride	7447-40-7	Not listed	Not listed	Not listed
Sodium Chloride	7647-14-5	Not listed	Not listed	Not listed
Silver Chloride	7783-90-6	Not listed	Not listed	Not listed
Triton® X-100	9002-93-1	Not listed	Not listed	Not listed

Component	CAS-No	European Union	The United Kingdom	Germany
Water	7732-18-5	Not listed	Not listed	Not listed
Potassium Nitrate	7757-79-1	Not listed	Not listed	Not listed
Potassium Chloride	7447-40-7	Not listed	Not listed	Not listed
Sodium Chloride	7647-14-5	Not listed	Not listed	Not listed
Silver Chloride	7783-90-6	Not listed	Not listed	TWA: 0.01 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 0.01 mg/m³ (8 Stunden). MAK Höhepunkt: 0.02 mg/m³
Triton® X-100	9002-93-1	Not listed	Not listed	Not listed

## Biological Exposure Indices

Component	CAS-No	Biological Exposure Indices
Water	7732-18-5	Not listed
Potassium Nitrate	7757-79-1	Not listed
Potassium Chloride	7447-40-7	Not listed
Sodium Chloride	7647-14-5	Not listed
Silver Chloride	7783-90-6	Not listed
Triton® X-100	9002-93-1	Not listed

## Appropriate engineering controls

**Engineering Measures** None under normal use conditions

## Individual protection measures, such as personal protective equipment

**Personal protective equipment** Use only those certified by the Korea Occupational Safety and Health Administration.

**Eye/face Protection** Wear chemical splash goggles and face shield. If splashes are likely to occur, wear:. Face-shield.

**Skin and Body Protection** Wear protective gloves/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.

**Environmental exposure controls** No information available

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Physical State** Liquid  
**Appearance** Clear  
**Odor** None  
**Odor Threshold** No information available  
**pH** 6.5  
**PH Range** 5.0 - 8.5

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<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	
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	
<u>Other Information</u>		
Softening Point	No information available	
Molecular Weight	No information available	
VOC Content(%)	0	
Density	No Information available	
Bulk Density	No information available	

## SECTION 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.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Product Information

### Information on likely routes of exposure

Inhalation	Not an expected route of exposure.
Ingestion	No known effect based on information supplied.
Eyes	Not an expected route of exposure.
Skin	No known effect based on information supplied.

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## Information on Toxicological Effects

**Symptoms** No information available

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

**Sensitization** No information available

**Mutagenic Effects** No information available

**Carcinogenicity** No information available.

**Reproductive Effects** No information available

**STOT - single exposure** No information available

**STOT - repeated exposure** No information available  
**Target Organs** None known.

**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)** 13225 mg/kg  
**ATEmix (dermal)** 1001000 mg/kg

## **SECTION 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 Chloride 7447-40-7	EC50: = 2500 mg/L, 72h (Desmodesmus subspicatus)	LC50: = 1060 mg/L, 96h static (Lepomis macrochirus) LC50: 750 - 1020 mg/L, 96h static (Pimephales promelas)	EC50: = 83 mg/L, 48h Static (Daphnia magna) EC50: = 825 mg/L, 48h (Daphnia magna)
Sodium Chloride 7647-14-5	-	LC50: = 12946 mg/L, 96h static (Lepomis macrochirus) LC50: 6020 - 7070 mg/L, 96h static (Pimephales promelas) LC50: = 7050 mg/L, 96h semi-static (Pimephales promelas) LC50: 6420 - 6700 mg/L, 96h static (Pimephales promelas) LC50: 4747 - 7824 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 5560 - 6080 mg/L, 96h flow-through (Lepomis macrochirus)	EC50: 340.7 - 469.2 mg/L, 48h Static (Daphnia magna) EC50: = 1000 mg/L, 48h (Daphnia magna)

### Persistence and Degradability

### Bioaccumulation/ Accumulation

No information available

### Mobility

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Will likely be mobile in the environment due to its water solubility.

## Other adverse effects

No information available

## SECTION 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

Improper disposal or reuse of this container may be dangerous and illegal.

## SECTION 14: TRANSPORT INFORMATION

### Road and Rail Transport

Not Regulated

### IATA

Not regulated

### IMDG/IMO

Not regulated

#### Marine Pollutant

Not Applicable

#### Special Precautions for User

No special precautions required

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

Legend: X - Listed '-' - Not Listed

### International Inventories

Component	CAS-No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	AICS
Water	7732-18-5	KE-35400	X	231-791-2	X	X	-	X	-	X
Potassium Nitrate	7757-79-1	KE-29163	X	231-818-8	X	X	-	X	X	X
Potassium Chloride	7447-40-7	KE-29086	X	231-211-8	X	X	-	X	X	X
Sodium Chloride	7647-14-5	KE-31387	X	231-598-3	X	X	-	X	X	X
Silver Chloride	7783-90-6	KE-31267	X	232-033-3	X	X	-	X	X	X
Triton® X-100	9002-93-1	KE-33568	X	-	X	X	-	X	-	X

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Water	7732-18-5	Listed	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Listed	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Listed	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Listed	Not applicable	Not applicable
Silver Chloride	7783-90-6	Listed	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable

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## Korean National Regulations

Component	CAS-No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Water	7732-18-5	Annex 1 - KE-35400 Exempt (Index No. 25)	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Annex 1 - KE-29163	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Annex 1 - KE-29086	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Annex 1 - KE-31387	Not applicable	Not applicable
Silver Chloride	7783-90-6	Annex 1 - KE-31267	Not applicable	Not applicable
Triton® X-100	9002-93-1	Annex 1 - KE-33568	Not applicable	Not applicable

Component	CAS-No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable

Component	CAS-No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	>98%	30000 kg/yr	90000 kg/yr
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable

Component	CAS-No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable

Component	CAS-No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable

Component	CAS-No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	Not applicable



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Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable
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Component	CAS-No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable

**National Fire Association - Dangerous Substances** Minimum quantity requiring a permit

Component	CAS-No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	6. Nitric acid salts 300 kg	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

## Control Parameters

Component	CAS-No	Korea	Biological Exposure Indices
Water	7732-18-5	Not listed	Not listed
Potassium Nitrate	7757-79-1	Not listed	Not listed
Potassium Chloride	7447-40-7	Not listed	Not listed
Sodium Chloride	7647-14-5	Not listed	Not listed
Silver Chloride	7783-90-6	Not listed	Not listed
Triton® X-100	9002-93-1	Not listed	Not listed

## US Management Information

OSHA - Occupational Safety and Health Administration

Not applicable

Component	CAS-No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Water	7732-18-5	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable
Potassium Chloride	7447-40-7	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable
Triton® X-100	9002-93-1	Not applicable	Not applicable

## 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)

Component	CAS-No	CERCLA EHS RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable	1.0
Potassium Chloride	7447-40-7	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable
Silver Chloride	7783-90-6	Not applicable	Not applicable	1.0
Triton® X-100	9002-93-1	Not applicable	Not applicable	Not applicable

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## **CLP Classification - Regulation (EC) No 1272/2008**

Based on available data, the classification criteria are not met.

EUH210 - Safety data sheet available on request.

## **SECTION 16: OTHER INFORMATION**

**Prepared By** Thermo Fisher Scientific©  
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1-978-232-6000

**Prepared For** Fisher Scientific©

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**Reason for revision** Initial Release.

## **MOEL's Public Notice No. 2016-19 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)**

### **Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**