

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

Product Name 100057 Reference Filling Solution
Product No 100057F4
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	80 - 90
Potassium Nitrate	No information available	7757-79-1	KE-29163	>=10 - 20
Sodium Chloride	No information available	7647-14-5	KE-31387	<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
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SECTION 5: FIREFIGHTING MEASURES

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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

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

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
Potassium Nitrate	7757-79-1	Not listed	Not listed	Not listed
Sodium Chloride	7647-14-5	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

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Sodium Chloride	7647-14-5	Not listed	Not listed	Not listed
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Biological Exposure Indices

Component	CAS-No	Biological Exposure Indices
Water	7732-18-5	Not listed
Potassium Nitrate	7757-79-1	Not listed
Sodium Chloride	7647-14-5	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 - 8.0

Property	Values	Remarks • Method
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	

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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

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.

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.

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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) 30150 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
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

No information available

Bioaccumulation/ Accumulation

No information available

Mobility

No information available.

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

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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
Sodium Chloride	7647-14-5	KE-31387	X	231-598-3	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
Sodium Chloride	7647-14-5	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
Sodium Chloride	7647-14-5	Listed	Not applicable	Not applicable

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
Sodium Chloride	7647-14-5	Annex 1 - KE-31387	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
Sodium Chloride	7647-14-5	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
Sodium Chloride	7647-14-5	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
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable

Component	CAS-No	ISHA - Harmful Agents Subject to Work	ISHA - Prohibited substances	ISHA - Substances requiring permission
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		Environment Monitoring		
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium Nitrate	7757-79-1	Not applicable	Not applicable	Not applicable
Sodium Chloride	7647-14-5	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
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable

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
Sodium Chloride	7647-14-5	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
Sodium Chloride	7647-14-5	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
Sodium Chloride	7647-14-5	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
Sodium Chloride	7647-14-5	Not applicable	Not applicable

CERCLA

Not applicable

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
Sodium Chloride	7647-14-5	Not applicable	Not applicable	Not applicable

CLP Classification - Regulation (EC) No 1272/2008

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

EUH210 - Safety data sheet available on request.

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SECTION 16: OTHER INFORMATION

Prepared By	Regulatory Affairs
Prepared For	Thermo Fisher Scientific Inc.©
Issue Date	05-Sep-2019
Revision Date	05-Sep-2019
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

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End of Safety Data Sheet