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Version 2 SDS No. Exempt, SR&D

MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

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

Product Identifier

Product Description: Iodine, 0.1N Standardized Solution

Cat No. : \$60307

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Details of the supplier of the safety data sheet

Importer Supplier

Fisher Scientific Korea Thermo Fisher Scientific Chemicals, Inc.

D5,D6, Incheon Airport Logistics Complex 30 Bond Street

150, Gonghangdong-Ro 296 Beon-Gil Ward Hill, MA 01835-8099

Jung-Gu, Incheon Tel: +82-1661-9555 Fax: +82-2-2023-0603

E-mail address Chem.KR@thermofisher.com

Emergency Telephone Number

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970

CHEMTREC: 080 822 1374 (Local), CHEMTREC: 1-800-424-9300 or + 1-703-527-3887

Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Specific target organ toxicity - (repeated exposure)

Category 2

Environmental hazards

Based on available data, the classification criteria are not met

Label Elements

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Signal Word Warning

Hazard Statements

H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements

Prevention

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Response

P314 - Get medical advice/attention if you feel unwell

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

This product does not contain any known or suspected endocrine disruptors

NFPA

HealthFlammabilityInstabilityPhysical hazards20N/A

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	Common Name	CAS No	Index No	Weight %
Water	Aqua	7732-18-5	KE-35400	95 - 97.5
Potassium iodide	Knollide; Potide	7681-11-0	KE-29149	2.5 - <5
lodine	No information available	7553-56-2	KE-21023	1.5 - 2

SECTION 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.

Ingestion Clean mouth with water and drink afterwards plenty of water.

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

symptoms occur.

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

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Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Hazardous Combustion Products

Hydrogen iodide.

Advice for fire-fighters

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

Use personal protective equipment as required. Ensure adequate ventilation.

Environmental precautions

Should not be released into the environment.

Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Do not get in eyes, on skin, or on clothing.

Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific End Uses

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Use in laboratories.

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 iodide	7681-11-0	STEL: 0.1 ppm TWA: 0.01 ppm	TWA: 0.01 ppm	Not listed
lodine	7553-56-2	STEL: 0.1 ppm TWA: 0.01 ppm	TWA: 0.01 ppm STEL: 0.1 ppm	Ceiling: 0.1 ppm Ceiling: 1 mg/m³ (Vacated) Ceiling: 0.1 ppm (Vacated) Ceiling: 1 mg/m³

Component	CAS No	European Union	The United Kingdom	Germany
Water	7732-18-5	Not listed	Not listed	Not listed
Potassium iodide	7681-11-0	Not listed	Not listed	Not listed
lodine	7553-56-2	Not listed	STEL: 0.1 ppm 15 min STEL: 1.1 mg/m³ 15 min	Haut

ACGIH - Biological Exposure Indices

Component	CAS No	ACGIH - Biological Exposure Indices
Water	7732-18-5	Not listed
Potassium iodide	7681-11-0	Not listed
lodine	7553-56-2	Not listed

Exposure Controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eve Protection Wear safety glasses with side shields (or goggles)

Hand Protection Protective gloves Skin and body protection Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

Personal protective equipment Use only those certified by the Korea Occupational Safety and Health Administration. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard

EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particle filter

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

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Environmental exposure controls No information available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties Appearance (Physical State, Color, Dark brown Liquid

etc.)

Odor pungent

Odor Threshold No data available

рH

0 °C / 32 °F Melting Point/Range **Softening Point** No data available

No information available **Boiling Point/Range** @ 760 mmHg

Flash Point No information available Method - No information available

No data available **Evaporation Rate**

Flammability (solid,gas) Not applicable Liquid

Explosion Limits No data available

Vapor Pressure 14 mmHg

Vapor Density 0.7 (Air = 1.0)

Specific Gravity / Density 1.02

Bulk Density Not applicable Liquid

Water Solubility Miscible

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component		CAS No	log Pow
	Water	7732-18-5	No data available
	Potassium iodide	7681-11-0	0.04
	lodine	7553-56-2	2.49

No data available **Autoignition Temperature** No data available **Decomposition Temperature** No data available **Viscosity** No information available **Explosive Properties Oxidizing Properties** No information available

Molecular Formula Not applicable for mixtures **Molecular Weight** Not applicable for mixtures

SECTION 10: STABILITY AND REACTIVITY

Reactivity None known, based on information available

Chemical Stability Stable under normal conditions.

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Possibility of Hazardous Reactions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous ReactionsNone under normal processing.

Conditions to Avoid

Incompatible products. Excess heat.

Incompatible Materials

Strong oxidizing agents.

Hazardous Decomposition Products

Hydrogen iodide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information No acute toxicity information is available for this product

Information on expected route of exposure

InhalationNot an expected route of exposure.IngestionMay be harmful if swallowed.EyesAvoid contact with eyes.SkinAvoid contact with skin.

Information on Health Hazards

(a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Based on available data, the classification criteria are not met

Based on available data, the classification criteria are not met

Based on available data, the classification criteria are not met

Toxicology data for the components

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	7732-18-5	-	-	=
Potassium iodide	7681-11-0	2779 mg/kg (Rat)	LD50 > 2000 mg/kg (Rat)	No data available
Iodine	7553-56-2	315 mg/kg (Rat)	1425 mg/kg (Rabbit)	4.588 mg/L 4h (Rat)

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available Skin No data available

Component	CAS No	Test method	Test species	Study result
Water	7732-18-5	No data available	No data available	No data available
Potassium iodide	7681-11-0	No data available	No data available	No data available
lodine	7553-56-2	OECD Test Guideline 429	mouse	non-sensitising
		Local Lymph Node Assay		

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(e) germ cell mutagenicity; No data available

Component	CAS No	Test method	Test species	Study result
Water	7732-18-5	No data available	No data available	No data available
Potassium iodide	7681-11-0	No data available	No data available	No data available
Iodine	7553-56-2	No data available	No data available	No data available

(f) carcinogenicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Water	7732-18-5	No data available	No data available	No data available
Potassium iodide	7681-11-0	No data available	No data available	No data available
lodine	7553-56-2	No data available	No data available	No data available

There are no known carcinogenic chemicals in this product

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Water	7732-18-5	Not listed				
Potassium iodide	7681-11-0	Not listed				
lodine	7553-56-2	Not listed				

(g) reproductive toxicity; No data available

Component	CAS No	Test method	Test species /	Study result
			Duration	
Water	7732-18-5	No data available	No data available	No data available
Potassium iodide	7681-11-0	No data available	No data available	No data available
Iodine	7553-56-2	No data available	No data available	No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; Category 2

Target Organs Thyroid, Reproductive System.

(j) aspiration hazard; No data available

Other Adverse Effects
No information available.

ſ	Component	CAS No	EU - Endocrine	EU - Endocrine Disruptors - Evaluated	Japan - Endocrine
			List	Substances	Disruptor information
	Water	7732-18-5	Not applicable	Not applicable	Not applicable
	Potassium iodide	7681-11-0	Not applicable	Not applicable	Not applicable
	lodine	7553-56-2	Not applicable	Not applicable	Not applicable

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects This product contains the following substance(s) which are hazardous for the environment. .

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Water	7732-18-5	No data available	No data available	No data available	No data available
Potassium iodide	7681-11-0	Onchorhynchus	-	-	=
		mykiss: LC50: 3200			
		mg/L/120h			

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ĺ	Iodine	7553-56-2	LC50 = 1.67 mg/L	EC50 = 0.55 mg/L	EC50 = 0.13 mg/L	EC50 = 280 mg/L 3h
			96h	48h	72h	_

Persistence and degradability

Persistence Soluble in water, Persistence is unlikely, based on information available, Miscible with

water.

Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Potassium iodide	0.04	No data available
lodine	2.49	No data available

<u>Mobility in soil</u> The product is water soluble, and may spread in water systems Will likely be mobile in the

environment due to its water solubility. Highly mobile in soils.

Ozone Depletion Potential

Component	CAS No	Ozone Depletion Potential		
Water	7732-18-5	Not listed		
Potassium iodide	7681-11-0	Not listed		
lodine	7553-56-2	Not listed		

Other adverse effects No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused

Products

Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act

(폐기물관리법).

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

Other Information Waste codes should be assigned by the user based on the application for which the product

was used. Do not empty into drains.

SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport Not Regulated

IATA Not regulated

IMDG/IMO Not regulated

Marine Pollutant No hazards identified

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	ISHL	AICS

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Water	7732-18-5	KE-35400	Х	231-791-2	Х	Х	-	Х	Х		Х
Potassium iodide	7681-11-0	KE-29149	Χ	231-659-4	Χ	Χ	-	Х	Х	Χ	Х
Iodine	7553-56-2	KE-21023	Х	231-442-4	X	Х	-	X	X		Х

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 iodide	7681-11-0	Not applicable	Not applicable	Not applicable	Not applicable
lodine	7553-56-2	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 iodide	7681-11-0	Listed	Not applicable	Not applicable
lodine	7553-56-2	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	Not applicable	Not applicable
		Exempt (Index No. 25)		
Potassium iodide	7681-11-0	Annex 1 - KE-29149	Not applicable	Not applicable
lodine	7553-56-2	Annex 1 - KE-21023	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 iodide	7681-11-0	Not applicable	Not applicable	Not applicable
lodine	7553-56-2	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 iodide	7681-11-0	Not applicable	Not applicable	Not applicable
lodine	7553-56-2	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 iodide	7681-11-0	Not applicable	Not applicable	Not applicable
lodine	7553-56-2	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 iodide	7681-11-0	Listed	Not applicable	Not applicable
lodine	7553-56-2	Listed	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

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Potassium iodide	7681-11-0	Listed	Listed	Not applicable
lodine	7553-56-2	Listed	Listed	Not applicable

Component	CAS No	ISHA - Subject to	ISHA - Threshold Limit	ISHA - Special
		Process Safety Reports	Values (TLVs) Chemicals	management materials
		(minimum quantity)		
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium iodide	7681-11-0	Not applicable	STEL: 0.1 ppm	Not applicable
			TWA: 0.01 ppm	
lodine	7553-56-2	Not applicable	STEL: 0.1 ppm	Not applicable
			TWA: 0.01 ppm	

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 iodide	7681-11-0	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Iodine	7553-56-2	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Control Parameters

Component	CAS No	Korea	ACGIH - Biological Exposure Indices
Water	7732-18-5	Not listed	Not listed
Potassium iodide	7681-11-0	STEL: 0.1 ppm TWA: 0.01 ppm	Not listed
Iodine	7553-56-2	STEL: 0.1 ppm TWA: 0.01 ppm	Not listed

US Management Information

OSHA - Occupational Safety and Health Administration

Not applicable

Component	CAS No	Specifically Regulated	Highly Hazardous Chemicals
		Chemicals	
Water	7732-18-5	Not applicable	Not applicable
Potassium iodide	7681-11-0	Not applicable	Not applicable
lodine	7553-56-2	Not applicable	Not applicable

CERCLA Not applicable

Component	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Potassium iodide	7681-11-0	Not applicable	Not applicable	Not applicable
lodine	7553-56-2	Not applicable	Not applicable	Not applicable

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Warning.

H373 - May cause damage to organs through prolonged or repeated exposure.

P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P314 - Get medical advice/attention if you feel unwell.

SECTION 16: OTHER INFORMATION

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Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic

Substances/EU List of Notified Chemical Substances Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances **KECL** - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of

Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air

Transport Association

MARPOL - International Convention for the Prevention of Pollution from Shins

ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Prepared By Health, Safety and Environmental Department

Creation Date 12-Nov-2009 **Revision Date** 12-Jun-2024

Revision Number

Revision Summary New emergency telephone response service provider.

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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