

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 20-Oct-2009

Revision Date 11-Oct-2023

Revision Number 11

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

1.1. Product identifier

Product Description:	lodine
Cat No. :	423820000; 423820025; 423820050; 423825000
Index No	053-001-00-3
CAS No	7553-56-2
EC No	231-442-4
Molecular Formula	12
REACH registration number	-

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

Recommended Use Sector of use	Laboratory chemicals. SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company	UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom EU entity/business name
	Thermo Fisher Scientific Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium
E-mail address	begel.sdsdesk@thermofisher.com
1.4. Emergency telephone number	For information US call: 001-800-227-6701 / Europe call: +32 14 57 52 11 Emergency Number US: 001-201-796-7100 / Europe: +32 14 57 52 99

CHEMTREC Tel. No. US:001-800-424-9300 / Europe:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

Physical hazards

lodine

Based on available data, the classification criteria are not met

Health hazards

Acute oral toxicity Acute dermal toxicity Acute Inhalation Toxicity - Dusts and Mists Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation Specific target organ toxicity - (single exposure) Specific target organ toxicity - (repeated exposure)

Environmental hazards

Acute aquatic toxicity

Category 4 (H302) Category 4 (H312) Category 4 (H332) Category 2 (H315) Category 2 (H319) Category 3 (H335) Category 1 (H372)

Category 1 (H400)

Full text of Hazard Statements: see section 16



Signal Word

Danger

Hazard Statements

H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H372 - Causes damage to organs through prolonged or repeated exposure

Thyroid

H400 - Very toxic to aquatic life

Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P312 - Call a POISON CENTER or doctor if you feel unwell

2.3. Other hazards

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment Lachrymator (substance which increases the flow of tears)

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

lodine

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3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
lodine	7553-56-2	231-442-4	>95	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335) STOT RE 1 (H372) Aquatic Acute 1 (H400)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Iodine	-	1	-

REACH registration number

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. 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. Get medical attention if symptoms occur.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
4.2. Most important symptoms and	effects, both acute and delayed
	None reasonably foreseeable.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, carbon

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

Extinguishing media which must not be used for safety reasons

No information available.

5.2. 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. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Hydrogen iodide.

5.3. Advice 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

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

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

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store in metal containers. Keep at temperatures below 25°C.

Technical Rules for Hazardous Substances (TRGS) 510 Class 6.1D Storage Class (LGK) (Germany)

lodine

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE -** 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Iodine	STEL: 0.1 ppm 15 min		TWA: 0.01 ppm 8 hr.
	STEL: 1.1 mg/m ³ 15 min		inhalable fraction and vapour
	_		TWA: 0.01 mg/m ³ 8 hr.
			STEL: 0.1 ppm 15 min

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
lodine 7553-56-2 (>95)				DNEL = 0.01mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
lodine 7553-56-2(>95)				DNEL = 0.07mg/m ³

Predicted No Effect Concentration (PNEC)

See values below.

Γ	Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
			sediment		sewage treatment	
	lodine	PNEC = 18.13µg/L	PNEC = 3.99mg/kg		PNEC = 11mg/L	PNEC = 5.95mg/kg
	7553-56-2 (>95)		sediment dw			soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
lodine	PNEC = 60.01µg/L	PNEC =			
7553-56-2 (>95)		20.22mg/kg			
		sediment dw			

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equ Eye Protection		(European standard	I - EN 166)		
Hand Protection	Protectiv	ve gloves			
Glove material Natural rubber Nitrile rubber Neoprene PVC	Breakthrough time See manufacturers recommendations	Glove thickness -	EU standard EN 374	Glove comments (minimum requirement)	
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	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter conforming to EN 143
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted
Environmental exposure controls	Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Solid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	Grey pungent No data available 113 °C / 235.4 °F No data available 185 °C / 365 °F Not applicable No information available No data available	@ 760 mmHg Solid
Flash Point Autoignition Temperature Decomposition Temperature pH Viscosity Water Solubility Solubility in other solvents	No information available No data available No data available 5.1 Not applicable 0.3 g/L (20°C) No information available	Method - No information available saturated solution Solid practically insoluble

Partition Coefficient (n-octanol	/water)	
Component lodine Vapor Pressure Density / Specific Gravity Bulk Density Vapor Density Particle characteristics	log Pow 2.49 0.41 hPa @ 25 °C No data available ~ 2100 kg/m ³ Not applicable No data available	Solid
9.2. Other information Molecular Formula Molecular Weight Evaporation Rate	l2 253.81 Not applicable - Solid	

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	None known, based on information available
10.2. Chemical stability	Stable under normal conditions.
10.3. Possibility of hazardous react	ions
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing.
10.4. Conditions to avoid	Avoid dust formation. Incompatible products. Excess heat.
10.5. Incompatible materials	Strong oxidizing agents. Finely powdered metals. Ammonia. Alcohols. copper.
10.6 Hazardous decomposition pro	ducts

<u>10.6. Hazardous decomposition products</u> Hydrogen iodide.

SECTION 11	: TOXICOL	OGICAL	INFORMATI	ON

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

Product Information

lodine

(a) acute toxicity; Oral

Oral	Category 4
Dermal	Category 4
Inhalation	Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Iodine	315 mg/kg(Rat)	1425 mg/kg(Rabbit)	4.588 mg/L 4h (Rat)

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

lodine

(d) respiratory or skin sensitization;

Respiratory Skin Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
lodine 7553-56-2(>95)	OECD Test Guideline 429 Local Lymph Node Assay	mouse	non-sensitising
(e) germ cell mutagenicity;	Based on available data, the cla	assification criteria are not met	
(f) carcinogenicity;	Based on available data, the cla	assification criteria are not met	
	There are no known carcinoger	ic chemicals in this product	
(g) reproductive toxicity;	Based on available data, the cla	assification criteria are not met	
(h) STOT-single exposure;	Category 3		
Results / Target organs	Respiratory system.		
(i) STOT-repeated exposure;	Category 1		
Target Organs	Thyroid.		
(j) aspiration hazard;	Not applicable Solid		
Symptoms / effects,both acute and delayed	No information available.		

11.2. Information on other hazards

Endocrine Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity Ecotoxicity effects

Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Iodine	LC50 = 1.67 mg/L 96h	EC50 = 0.55 mg/L 48h	EC50 = 0.13 mg/L 72h

Component	Microtox	M-Factor
Iodine	EC50 = 280 mg/L 3h	1

12.2. Persistence and degradability

Persistence	Persistence is unlikely.
Degradability	Not relevant for inorganic substances.
Degradation in sewage	Contains substances known to be hazardous to the environment or not degradable in waste
treatment plant	water treatment plants.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
lodine	2.49	No data available
<u>12.4. Mobility in soil</u>	Spillage unlikely to penetrate soil Is not likely solubility.	mobile in the environment due its low water
<u>12.5. Results of PBT and vPvB</u> assessment	In accordance with Annex XIII of the REACH require assessment.	Regulation, inorganic substances do not
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or s	uspected endocrine disruptors
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or so This product does not contain any known or so	1
SE	CTION 13: DISPOSAL CONSIDER	ATIONS
13.1. Waste treatment methods		
Waste from Residues/Unused Products	Should not be released into the environment. in accordance with the European Directives of accordance with local regulations.	•
Contaminated Packaging	Dispose of this container to hazardous or spec	cial waste collection point.

European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this

chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

<u>14.1. UN number</u>	UN3495
14.2. UN proper shipping name	IODINE
14.3. Transport hazard class(es)	8
Subsidiary Hazard Class	6.1
14.4. Packing group	III

<u>ADR</u>

<u>14.1. UN number</u>	UN3495
14.2. UN proper shipping name	IODINE
14.3. Transport hazard class(es)	8
Subsidiary Hazard Class	6.1

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14.4. Packing group	Ш
IATA	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN3495 IODINE 8 6.1 III
14.5. Environmental hazards	Dangerous for the environment Product is a marine pollutant according to the criteria set by IMDG/IMO
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods
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SECTION 15: REGULATORY INFORMATION

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

International Inventories

lodine

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

lodine 7553-56-2 231-442-4 X X KE-21023 X -	Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
	lodine	7553-56-2	231-442-4	-	-	Х	Х	KE-21023	Х	-

Component	CA	S No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
lodine	7553	8-56-2	Х	ACTIVE	Х	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
lodine	7553-56-2	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report
		Notification	Requirements
lodine	7553-56-2	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and

import of dangerous chemicals Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

lodine

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
lodine	WGK2	

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Iodine	Prohibited and Restricted		
7553-56-2 (>95)	Substances		

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

- H302 Harmful if swallowed
- H312 Harmful in contact with skin
- H332 Harmful if inhaled
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H335 May cause respiratory irritation
- H372 Causes damage to organs through prolonged or repeated exposure
- H400 Very toxic to aquatic life

Legend

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemica	I 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	ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances	AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances	NZIOC - New Zealand Inventory of Chemicals

TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships 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

lodine

Chemical incident response training.

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Revision Date	11-Oct-2023
Revision Summary	Not applicable.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Disclaimer

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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