

Safety data sheet according to UK REACH

Printing date 27.03.2025

Version number 20

Revision: 27.03.2025

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Iodine
- **SDS number:** CH0188
- **CAS Number:**
7553-56-2
- **EC number:**
231-442-4
- **Index number:**
053-001-00-3
- **Application of the substance / the mixture** Chemicals products for laboratory
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
CARLO ERBA REAGENTS
Chaussée du Vexin
Parc d'Affaires des Portes - BP616
27106 VAL DE REUIL Cedex
Téléphone: +33 (0)2 32 09 20 00
Télécopie: +33 (0)2 32 09 20 20
- **Further information obtainable from:**
Q.A / Normative
email: MSDS_CER-SDS@cer.dgroup.it
- **1.4 Emergency telephone number:**
Ireland - Tel : 00 353 1 8092568 - 00 353 1 8379964 (24h/24)
EU Tel : 112
National Poisons Information Centre: +353 (1) 809 2166 (8.00 a.m. to 10.00 p.m. 7 days a week)
Healthcare Professionals: +353 (1) 809 2566 (24 hour service)
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

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Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS07 GHS08 GHS09

- **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.
H400 Very toxic to aquatic life.
- **Precautionary statements**

P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**
CAS: 7553-56-2 Iodine
- **Identification number(s)**
- **EC number:** 231-442-4
- **Index number:** 053-001-00-3

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly. Wash contaminated clothing before reuse.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
Seek immediate medical advice.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If some symptoms persist seek for medical advice.
- **Information for doctor:** Show the doctor this Material Safety Data Sheet.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**
Can form explosive gas-air mixtures.
Hydrogen iodide(HI)
- **5.3 Advice for firefighters**
- **Protective equipment:**
In closed rooms wear a self contained breathing apparatus.
Do not inhale gases in case of fire or combustion.
- **Additional information** Keep receptacles cool with water spray.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to penetrate the ground/soil.
Do not allow to enter sewers/ surface or ground water.
In case of seepage into the ground inform responsible authorities.
- **6.3 Methods and material for containment and cleaning up:**
Pick up mechanically.
Ensure adequate ventilation.
Dispose contaminated material as waste according to section 13.
Provide suction extractors if dust is formed.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Thorough dedusting.

Prevent formation of dust.

Provide suction extractors if dust is formed.

Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.

Keep unused containers tightly sealed.

· Information about fire - and explosion protection: The product is not flammable.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

Prevent any seepage into the ground.

Use only receptacles specifically permitted for this substance/product.

· Information about storage in one common storage facility: Not required.

· Further information about storage conditions: Keep receptacle tightly sealed.

· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Additional information about design of technical facilities:

Safety shower and eye bath. Mechanical exhaust required.

No further data; see section 7.

· Ingredients with limit values that require monitoring at the workplace:

CAS: 7553-56-2 Iodine

WEL Short-term value: 1.1 mg/m³, 0.1 ppm

· Additional information: The lists valid during the making were used as basis.

· 8.2 Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Store protective clothing separately.

Vacuum clean contaminated clothing. Do not blow or brush off contamination.

Avoid contact with the eyes and skin.

Clean skin thoroughly immediately after handling the product.

· Respiratory protection:

Use suitable respiratory protective device only when aerosol or mist is formed.



In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Use suitable respiratory protective device in case of insufficient ventilation.

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· Protection of hands:

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

*Protective gloves**Rubber gloves***· Material of gloves**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Thin, disposable gloves in PVC or PE

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:*Tightly sealed goggles***· Limitation and supervision of exposure into the environment**

The product must not be released into the environment.

In case of unintended release of the product: See section 6 of the Safety Data Sheet.

· Risk management measures *Keep good industrial hygiene.*

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SECTION 9: Physical and chemical properties**· 9.1 Information on basic physical and chemical properties**

Molecular weight 253.8 g

· Appearance:

Form: Solid

Colour: Black

· Odour:

Characteristic

· Odour threshold:

Not determined.

· pH-value: Not applicable.

· Change in condition

Melting point/freezing point: 113.6 °C

Initial boiling point and boiling range: 184.4 °C

· Flash point:

Not applicable.

· Flammability

Product is not flammable.

· Decomposition temperature:

Not determined.

· Ignition temperature:

Not determined.

· Explosive properties:

Product does not present an explosion hazard.

· Explosion limits:

Not determined.

Lower:

Not determined.

Upper:

Not determined.

· Vapour pressure at 20 °C:

0.35 hPa

· Vapour pressure at 50 °C:

2.8 hPa

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· Density at 20 °C:	4.93 g/cm ³
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with water at 20 °C:	0.34 g/l
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· 9.2 Other information	
Molecular formula	I ₂

SECTION 10: Stability and reactivity

- **10.1 Reactivity** See 10.3
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Hydrogen iodide(HI)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if swallowed, in contact with skin or if inhaled.

- **LD/LC50 values relevant for classification:**

Oral	LD50	14,000 mg/kg (rat)
Dermal	LD50	1,100 mg/kg (ATE)
Inhalative	LC50/4 h	1.5 ppm (ATE)
	LC50	1.4 mg/L (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Strong irritant with the danger of severe eye injury.
Irritating effect.
Causes serious eye irritation.
- **Ingestion:** Harmful if swallowed.
- **Inhalation:**
Harmful if inhaled.
May cause respiratory irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Other information (about experimental toxicology):** No further relevant information available.
- **Subacute to chronic toxicity:** Cumulative effects in case of repeated exposures.

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- Target organ information**
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- Carcinogenicity** Based on available data, the classification criteria are not met.
- Reproductive toxicity** Based on available data, the classification criteria are not met.
- STOT-single exposure**
May cause respiratory irritation.
- STOT-repeated exposure**
Causes damage to organs through prolonged or repeated exposure.
- Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- 12.1 Toxicity**

- Aquatic toxicity:**

LC50	0.53 mg/l (fishes) (96h - <i>Oncorhynchus mykiss</i>)
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- 12.2 Persistence and degradability** No further relevant information available.

- Method**

- Ecological information** Not available

- 12.3 Bioaccumulative potential** No further relevant information available.

- 12.4 Mobility in soil** No further relevant information available.

- Ecotoxicological effects:**

- Remark:** Very toxic for fish

- Additional ecological information:**

- General notes:**

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

- 12.5 Results of PBT and vPvB assessment**

- PBT:** Not applicable.

- vPvB:** Not applicable.

- 12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods**

- Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Reutilise if possible or contact a waste processors for recycling or safe disposal.

- Uncleaned packaging:**

- Recommendation:**

Disposal must be made according to official regulations.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

- 14.1 UN-Number**

- DOT, ADR/RID, IMDG, IATA**

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· 14.2 UN proper shipping name	3495 IODINE, ENVIRONMENTALLY HAZARDOUS
· ADR/RID	IODINE, MARINE POLLUTANT
· IMDG	Iodine
· IATA	
· 14.3 Transport hazard class(es)	
· ADR/RID	
	  
· Class	8 (CT2) Corrosive substances.
· Label	8+6.1
· IMDG	
	  
· Class	8 Corrosive substances.
· Label	8/6.1
· IATA	
	 
· Class	8 Corrosive substances.
· Label	8 (6.1)
· 14.4 Packing group	
· ADR/RID, IMDG, IATA	III
· 14.5 Environmental hazards:	<i>Environmentally hazardous substance, solid; Marine Pollutant</i>
· Marine pollutant:	Yes (P) Symbol (fish and tree)
· Special marking (ADR/RID):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Corrosive substances.
· Hazard identification number (Kemler code):	86
· EMS Number:	F-A,S-B
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· Segregation Code	SG37 Stow "separated from" ammonia.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR/RID	
· Excepted quantities (EQ):	E2
· Limited quantities (LQ)	5 kg

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· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· Transport category	3
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 3495 IODINE, 8 (6.1), III, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **SARA Section 355 (extremely hazardous substances)** Substance is not listed.
- **SARA Section 313 (specific toxic chemical listings)** Substance is not listed.
- **Prop 65 - Chemicals known to cause cancer** Substance is not listed.
- **Poisons Act**
- **Regulated explosives precursors** Substance is not listed.
- **Regulated poisons** Substance is not listed.
- **Reportable explosives precursors** Substance is not listed.
- **Reportable poisons** Substance is not listed.
- **Chemical safety assessment**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category E1** Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **National regulations:**
- **Waterhazard class:** Water hazard class 2 (Assessment by list): hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS: Q.A./Normative**

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

P: Marine Pollutant

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

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*vPvB: very Persistent and very Bioaccumulative**ATE: Acute toxicity estimate values**Acute Tox. 4: Acute toxicity – Category 4**Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Irrit. 2: Serious eye damage/eye irritation – Category 2**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3**STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1**Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1***Sources***Globally Harmonized System, GHS**ADR/RID, IMDG, IATA**PubChem : an open chemistry database at the National Institutes of Health (NIH)**ECHA : European Chemicals Agency*** Data compared to the previous version altered. .*

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