

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** Iodine

**Other means of identification**

**Product No.:** 0975, 2208, 2211, 1008, 72187

**Recommended use and restriction on use**

**Recommended use:** For Laboratory, Research or Manufacturing Use.

**Restrictions on use:** Not determined.

**Details of the supplier of the safety data sheet**

	Avantor Performance Materials, LLC.
	3477 Corporate Parkway
	Center Valley, PA 18034
Telephone:	
	Customer Service: 855-282-6867
Fax:	610-573-2610
Contact Person:	Environmental Health & Safety
E-mail:	info@avantormaterials.com

**Emergency telephone number:**

CHEMTREC: 1-800-424-9300 within US and Canada

## 2. Hazard(s) identification

**Hazard Classification**

**Physical Hazards**

Oxidizing solids	Category 1
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**Health Hazards**

Acute toxicity (Dermal)	Category 4
Acute toxicity (Inhalation - vapor)	Category 4
Skin Corrosion/Irritation	Category 1
Serious Eye Damage/Eye Irritation	Category 1
Specific Target Organ Toxicity - Single Exposure	Category 3 <sup>1</sup>
Specific Target Organ Toxicity - Repeated Exposure	Category 1 <sup>2</sup>

**Target Organs**

1. Respiratory tract irritation.
2. Thyroid

**Environmental Hazards**

Acute hazards to the aquatic environment	Category 1
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**Label Elements**

**Hazard Symbol:**



**Signal Word:** Danger

**Hazard Statement:** May cause fire or explosion; strong oxidizer. Harmful in contact with skin or if inhaled. Causes severe skin burns and eye damage. May cause respiratory irritation. May cause drowsiness or dizziness. Causes damage to organs through prolonged or repeated exposure.

**Precautionary Statements**

Very toxic to aquatic life.

**Prevention:**

Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wash thoroughly after handling. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take any precaution to avoid mixing with combustibles. Wear fire resistant or flame retardant clothing. Do not breathe dust/fume/gas/mist/vapours/spray.

**Response:**

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Immediately call a POISON CENTER/doctor. Collect spillage.

**Other hazards which do not result in GHS classification:** None.

**3. Composition/information on ingredients**

**Substances**

Chemical name	Common name and synonyms	CAS number	Content in percent (%)*
Iodine		7553-56-2	100%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**4. First-aid measures**

<b>General information:</b>	Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand.
<b>Ingestion:</b>	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
<b>Inhalation:</b>	Move to fresh air. Call a POISON CENTER/doctor if you feel unwell. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.
<b>Skin Contact:</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. If skin irritation or an allergic skin reaction develops, get medical attention.
<b>Eye contact:</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air.

**Most important symptoms/effects, acute and delayed**

<b>Symptoms:</b>	Corrosive to skin and eyes. Causes digestive tract burns.
<b>Hazards:</b>	None known.

**Indication of immediate medical attention and special treatment needed**

<b>Treatment:</b>	Treat symptomatically. Symptoms may be delayed.
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**5. Fire-fighting measures**

<b>General Fire Hazards:</b>	Strong oxidizer - contact with other material may cause fire. In case of fire and/or explosion do not breathe fumes.
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**Suitable (and unsuitable) extinguishing media**

<b>Suitable extinguishing media:</b>	Use fire-extinguishing media appropriate for surrounding materials.
<b>Unsuitable extinguishing media:</b>	None known.

<b>Specific hazards arising from the chemical:</b>	During fire, gases hazardous to health may be formed. Product is highly caustic. Product is acidic. Wear appropriate protective gear if spilled during firefighting.
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**Special protective equipment and precautions for firefighters**

<b>Special fire fighting procedures:</b>	Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
<b>Special protective equipment for fire-fighters:</b>	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**6. Accidental release measures**

<b>Personal precautions, protective equipment and emergency procedures:</b>	Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment.
<b>Methods and material for containment and cleaning up:</b>	Neutralize with lime or soda ash. Neutralize spill area and washings with dilute acetic acid. Sweep up and place in a clearly labeled container for chemical waste. Dike far ahead of larger spill for later recovery and disposal.
<b>Notification Procedures:</b>	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
<b>Environmental Precautions:</b>	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer.

## 7. Handling and storage

<b>Precautions for safe handling:</b>	Wash hands thoroughly after handling. Keep away from combustible material. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes. Avoid contact with skin. Do not taste or swallow. Use caution when adding this material to water. See Section 8 of the SDS for Personal Protective Equipment.
<b>Conditions for safe storage, including any incompatibilities:</b>	Keep container tightly closed. Store in a well-ventilated place. Keep away from sources of ignition - No smoking. Keep away from combustible material. Do not store in metal containers.

## 8. Exposure controls/personal protection

### Control Parameters

#### Occupational Exposure Limits

<b>Appropriate Engineering Controls</b>	No data available.
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### Individual protection measures, such as personal protective equipment

<b>General information:</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.
<b>Eye/face protection:</b>	Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.
<b>Skin Protection</b>	
<b>Hand Protection:</b>	Chemical resistant gloves
<b>Other:</b>	Wear suitable protective clothing and gloves.
<b>Respiratory Protection:</b>	In case of inadequate ventilation use suitable respirator.

**Hygiene measures:** Do not get in eyes. Observe good industrial hygiene practices. Wash contaminated clothing before reuse. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Provide eyewash station and safety shower.

## 9. Physical and chemical properties

### Appearance

<b>Physical state:</b>	Solid
<b>Form:</b>	Scales or plates; diatomic
<b>Color:</b>	Bluish black
<b>Odor:</b>	Sharp characteristic odor
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	113,7 °C
<b>Initial boiling point and boiling range:</b>	184,4 °C
<b>Flash Point:</b>	No data available.
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	Noncombustible Solid
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	No data available.
<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	0,031 kPa (25 °C)
<b>Vapor density:</b>	No data available.
<b>Density:</b>	4,93 g/ml (25 °C)
<b>Relative density:</b>	4,93 (25 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	0,3 g/l (20 °C) Slightly Soluble 0,33 g/l (25 °C)
<b>Solubility (other):</b>	carbon tetrachloride: 197 g/l (25 °C) methanol: 230 g/l (25 °C) ethanol: 205 g/l (15 °C) ether: 206 g/l (17 °C)
<b>Partition coefficient (n-octanol/water):</b>	2,49
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Molecular weight:</b>	253,81 g/mol (I2)

## 10. Stability and reactivity

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.

<b>Conditions to avoid:</b>	Sunlight. Avoid contact with strong reducing agents. Contact with combustibles. Contact with incompatible materials.
<b>Incompatible Materials:</b>	Liquid chlorine. Acetaldehyde. Ammonia. Ammonia. Chemically active metals. Acetylene. Ammonia, acetylene, acetaldehyde, powdered aluminum, active metals, liquid chlorine
<b>Hazardous Decomposition Products:</b>	By heating and fire, toxic vapors/gases may be formed.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation:</b>	Harmful if inhaled. Severely irritating to respiratory system.
<b>Skin Contact:</b>	Harmful in contact with skin. Causes severe skin burns. May cause an allergic skin reaction.
<b>Eye contact:</b>	Causes serious eye damage.
<b>Ingestion:</b>	May be fatal if swallowed.

### Information on toxicological effects

#### Acute toxicity (list all possible routes of exposure)

<b>Oral</b>	
<b>Product:</b>	LD 50 (Rat): 14 g/kg
<b>Dermal</b>	
<b>Product:</b>	LD 50 (Rabbit): 1.425 mg/kg
<b>Inhalation</b>	
<b>Product:</b>	LC 50 (Rat): > 4,588 mg/l

#### Repeated dose toxicity

<b>Product:</b>	No data available.
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#### Skin Corrosion/Irritation

<b>Product:</b>	Causes severe skin burns.
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#### Serious Eye Damage/Eye Irritation

<b>Product:</b>	Causes serious eye damage.
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#### Respiratory or Skin Sensitization

<b>Product:</b>	Risk of sensitization or allergic reactions among sensitive individuals.
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#### Carcinogenicity

<b>Product:</b>	This substance has no evidence of carcinogenic properties.
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**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

**ACGIH Carcinogen List:**

No carcinogenic components identified

**Germ Cell Mutagenicity**

**In vitro**

**Product:** No mutagenic components identified

**In vivo**

**Product:** No mutagenic components identified

**Reproductive toxicity**

**Product:** No components toxic to reproduction

**Specific Target Organ Toxicity - Single Exposure**

**Product:** Respiratory tract irritation.

**Specific Target Organ Toxicity - Repeated Exposure**

**Product:** Thyroid

**Aspiration Hazard**

**Product:** Not classified

**Other effects:** None known.

<b>12. Ecological information</b>
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**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**

**Product:** LC 50 (Guppy (Poecilia reticulata), 24 h): 3 mg/l Mortality  
LC 50 (Rainbow trout, donaldson trout (Oncorhynchus mykiss), 96 h): 0,48 - 0,58 mg/l Mortality

**Aquatic Invertebrates**

**Product:** LC 50 (Water flea (Daphnia magna), 96 h): 0,51 - 0,68 mg/l Mortality

**Chronic hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Persistence and Degradability**

**Biodegradation**

**Product:** There are no data on the degradability of this product.

**BOD/COD Ratio**

**Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration Factor (BCF)**

**Product:** No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** Log Kow: 2,49

**Mobility in soil:** No data available.

**Other adverse effects:** Very toxic to aquatic organisms.

**13. Disposal considerations**

**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Contaminated Packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

**14. Transport information**

**TDG**

UN Number: UN 3495  
 UN Proper Shipping Name: IODINE  
 Transport Hazard Class(es)  
     Class: 8  
     Label(s): 8, 6.1  
 Packing Group: III  
 Marine Pollutant: Yes  
 Special precautions for user: Not determined.

**IMDG**

UN Number: UN 3495  
 UN Proper Shipping Name: IODINE  
 Transport Hazard Class(es)  
     Class: 8  
     Label(s): 8, 6.1  
     EmS No.: F-A, S-B  
 Packing Group: III  
 Marine Pollutant: Yes  
 Special precautions for user: Not determined.

**IATA**

UN Number: UN 3495  
 UN Proper Shipping Name: Iodine  
 Transport Hazard Class(es):  
     Class: 8  
     Label(s): 8, 6.1  
 Packing Group: III  
 Marine Pollutant: Yes



Special precautions for user: Not determined.  
Cargo aircraft only: Allowed.

**Transport in bulk according to Annex II of MARPOL and the IBC Code:** Not applicable

## 15. Regulatory information

### Canada Federal Regulations

List of Toxic Substances (CEPA, Schedule 1)

Export Control List (CEPA 1999, Schedule 3)

National Pollutant Release Inventory (NPRI)

Greenhouse Gases

Controlled Drugs and Substances Act

Precursor Control Regulations

### International regulations

**Montreal protocol**

Not applicable

**Stockholm convention**

Not applicable

**Rotterdam convention**

Not applicable

**Kyoto protocol**

Not applicable

### Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

## 16. Other information, including date of preparation or last revision

**Revision Date:** 24.05.2018

**Version #:** 1.1

**Further Information:** No data available.

**Disclaimer:**

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