

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: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Physical hazards

Oxidizing solids Category 1

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

Specific target organ toxicity - repeated exposure Category 1

Environmental hazards

Acute hazards to the aquatic environment Category 1

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.
Very toxic to aquatic life.

Precautionary statement

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/sparks/open flames/hot surfaces. No smoking. Take any precaution to avoid mixing with combustibles. Wear fire/flame resistant/retardant clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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 or doctor/physician. Collect spillage.

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

3. Composition/information on ingredients

Substances

Chemical identity	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

General information: Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand.

Ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation: Move to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.

Skin contact:	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.
Eye contact:	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

Symptoms:	Corrosive to skin and eyes. Causes digestive tract burns.
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Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically. Symptoms may be delayed.
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5. Fire-fighting measures

General fire hazards:	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

Suitable extinguishing media:	Use fire-extinguishing media appropriate for surrounding materials.
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Unsuitable extinguishing media:	None known.
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Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed. Product is highly caustic. Product is acidic. Wear appropriate protective gear if spilled during fire fighting.
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Special protective equipment and precautions for firefighters

Special fire fighting procedures:	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.
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Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
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6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	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 MSDS for Personal Protective Equipment.
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Methods and material for containment and cleaning up:	Neutralize with lime or soda ash. Neutralize spill area and washings with dilute acetic acid. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal.
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Notification Procedures:	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
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Environmental precautions:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer.
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7. Handling and storage

Precautions for safe handling: 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 MSDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: 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

Chemical identity	Type	Exposure Limit values		Source
IODINE - Inhalable fraction and vapor.	TWA	0.01 ppm		US. ACGIH Threshold Limit Values (2011)
IODINE - Vapor and aerosol.	STEL	0.1 ppm		US. ACGIH Threshold Limit Values (2011)
IODINE	Ceil_Time	0.1 ppm	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	Ceiling	0.1 ppm	1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	Ceiling	0.1 ppm	1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	Ceiling	0.1 ppm	1 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL	10 µg/m3		US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	1 µg/m3		US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	ST ESL	1 ppb		US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	0.1 ppb		US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	Ceiling	0.1 ppm	1 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information: 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.

Eyeface protection: Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.

Skin protection

Hand protection: Chemical resistant gloves

Other: Wear suitable protective clothing and gloves.

Respiratory protection:	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

Physical state:	Solid
Form:	Scales
Color:	Blue, Black
Odor:	Characteristic
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	113.7 °C
Initial boiling point and boiling range:	184.4 °C
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	Noncombustible Solid

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.

Vapor pressure:	0.03 kPa (25 °C)
Vapor density:	No data available.
Relative density:	4.93 (25 °C)

Solubility(ies)

Solubility in water:	Slightly Soluble
Solubility (other):	No data available.

Partition coefficient (n-octanol/water):	2.49
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Auto-ignition temperature:	No data available.
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Decomposition temperature:	No data available.
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Viscosity:	No data available.
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Other information

Molecular weight:	253.81 g/mol (I2)
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10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
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Chemical stability:	Material is stable under normal conditions.
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Possibility of hazardous reactions:	Hazardous polymerization does not occur.
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Conditions to avoid:	Sunlight. Avoid contact with strong reducing agents. Contact with combustibles. Contact with incompatible materials.
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Incompatible materials:	Ammonia. Chemically active metals. Acetylene.
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Hazardous decomposition products:

By heating and fire, toxic vapors/gases may be formed.

11. Toxicological information**Information on likely routes of exposure**

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

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)****Oral**

Product:	LD 50 (Rat): 14 g/kg LDLo (Human): 28 mg/kg
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Dermal

Product:	No data available.
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Inhalation

Product:	No data available.
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Repeated dose toxicity

Product:	No data available.
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Skin corrosion/irritation

Product:	Causes severe skin burns.
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Serious eye damage/eye irritation

Product:	Causes serious eye damage.
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Respiratory or skin sensitization

Product:	Risk of sensitization or allergic reactions among sensitive individuals.
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Carcinogenicity

Product:	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

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity**In vitro**

Product:	No mutagenic components identified
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In vivo

Product:	No mutagenic components identified
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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.

12. Ecological information

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

DOT

UN number:	UN 3495
UN proper shipping name:	Iodine
Transport hazard class(es)	
Class(es):	8, 6.1
Label(s):	8, 6.1
Packing group:	III
Marine Pollutant:	No

IMDG

UN number:	UN 3495
UN proper shipping name:	IODINE
Transport hazard class(es)	
Class(es):	8, 6.1
Label(s):	8, 6.1
EmS No.:	F-A, S-B
Packing group:	III
Marine Pollutant:	No

IATA

UN number:	UN 3495
Proper Shipping Name:	Iodine
Transport hazard class(es):	
Class(es):	8, 6.1
Label(s):	8, 6.1
Marine Pollutant:	No
Packing group:	III

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

☒ Acute (Immediate)
 ☒ Chronic (Delayed)
 ☒ Fire
 ☐ Reactive
 ☐ Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
IODINE	500 lbs

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

IODINE Listed

US. Massachusetts RTK - Substance List

IODINE Listed

US. Pennsylvania RTK - Hazardous Substances

IODINE Listed

US. Rhode Island RTK

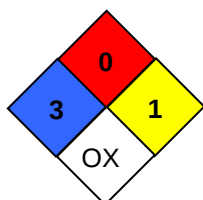
IODINE Listed

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

NFPA Hazard ID



Red	Flammability
Blue	Health
Yellow	Reactivity
White	Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

OXY: Oxidizer

SDS_US - SDS000001267

Issue date: 07-09-2014

Revision date: No data available.

Version #: 1.0

Further information: No data available.

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