



## SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Date of issue: 05/15/2014

Version 1.0

### SECTION 1. Identification

#### Product identifier

Product number	IX0125
Product name	Iodine
CAS-No.	7553-56-2

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

Identified uses	Reagent for analysis
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#### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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### SECTION 2. Hazards identification

#### GHS Classification

Acute toxicity, Category 4, Inhalation, H332  
Acute toxicity, Category 4, Dermal, H312  
Eye irritation, Category 2, H319  
Skin irritation, Category 2, H315  
Specific target organ systemic toxicity - repeated exposure, Category 1, Oral, thyroid, H372  
Specific target organ systemic toxicity - single exposure, Category 3, Inhalation, Respiratory system, H335  
Acute aquatic toxicity, Category 1, H400  
For the full text of the H-Statements mentioned in this Section, see Section 16.

#### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Danger

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### *Hazard Statements*

H312 + H332 Harmful 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 (thyroid) through prolonged or repeated exposure if swallowed.

H400 Very toxic to aquatic life.

### *Precautionary Statements*

P273 Avoid release to the environment.

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

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314 Get medical advice/ attention if you feel unwell.

### **OSHA Hazards**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

### **Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

Formula	I <sub>2</sub> (Hill)
Molar mass	253.8 g/mol

### **Hazardous ingredients**

*Chemical Name (Concentration)*

CAS-No.

*Iodine (>= 90 % - <= 100 % )*

7553-56-2

Exact percentages are being withheld as a trade secret.

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## **SECTION 4. First aid measures**

### **Description of first-aid measures**

#### *Inhalation*

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration.

Oxygen if necessary. Immediately call in physician.

#### *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing. Call a physician immediately.

#### *Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

#### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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Never give anything by mouth to an unconscious person.

### **Most important symptoms and effects, both acute and delayed**

irritant effects, conjunctivitis, Asthma, bronchitis, Allergic reactions, Dermatitis, Skin disorders,  
Fever, bloody diarrhea, collapse, rhinitis, metallic taste

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

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

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## **SECTION 5. Fire-fighting measures**

### **Extinguishing media**

#### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### **Special hazards arising from the substance or mixture**

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

hydrogen iodide

### **Advice for firefighters**

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6. Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### **Environmental precautions**

Do not empty into drains.

### **Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## **SECTION 7. Handling and storage**

### **Precautions for safe handling**

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Observe label precautions.

Work under hood. Do not inhale substance/mixture.

### Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at room temperature.

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>Iodine 7553-56-2</i>			
ACGIH	Time Weighted Average (TWA):	0.01 ppm	Form of exposure: Inhalable fraction and vapor.
	Short Term Exposure Limit (STEL):	0.1 ppm	Form of exposure: Vapor and aerosol.
NIOSH/GUIDE	Ceiling Limit Value and Time Period (if specified):	0.1 ppm 1 mg/m <sup>3</sup>	
OSHA_TRANS	Ceiling Limit Value:	0.1 ppm 1 mg/m <sup>3</sup>	
Z1A	Ceiling Limit Value:	0.1 ppm 1 mg/m <sup>3</sup>	

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

#### *Eye/face protection*

Safety glasses

#### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### *Other protective equipment:*

protective clothing

#### *Respiratory protection*

required when dusts are generated.

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Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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### SECTION 9. Physical and chemical properties

Physical state	solid
Color	dark violet
Odor	stinging
Odor Threshold	No information available.
pH	5.4 (saturated solution)
Melting point	114 °C
Boiling point/boiling range	365 °F (185 °C) at 1,013 hPa
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapor pressure	0.41 hPa at 77 °F (25 °C)
Relative vapor density	8.8
Density	4.93 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	0.3 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: 2.49 (experimental) Bioaccumulation is not expected. (Lit.)
Autoignition temperature	No information available.

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Decomposition temperature	No information available.
Viscosity, dynamic	2.27 mPa.s at 241 °F (116 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Bulk density	ca.2,100 kg/m <sup>3</sup>
Viscosity, kinematic	0.57 mm <sup>2</sup> /s at 241 °F (116 °C) liquid

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### SECTION 10. Stability and reactivity

#### Reactivity

See below

#### Chemical stability

sublimable

#### Possibility of hazardous reactions

Risk of explosion with:

Risk of ignition or formation of inflammable gases or vapors with:

Exothermic reaction with:

Alkali metals, Ammonia, ammonium compounds, nonmetallic oxides, nonmetals, halogen-halogen compounds, acetylidene, semimetals, Aluminum, Acetylene, carbides, Fluorine, magnesium, lithium silicide, azides, turpentine oils and/or turpentine substitutes, alkali oxides, Powdered metals

#### Conditions to avoid

Strong heating.

#### Incompatible materials

no information available

#### Hazardous decomposition products

in the event of fire: See section 5.

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### SECTION 11. Toxicological information

#### Information on toxicological effects

*Likely route of exposure*

Eye contact, Skin contact, Ingestion

*Target Organs*

Eyes

Skin

Respiratory system

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Central nervous system  
cardiovascular system

### *Acute oral toxicity*

LD50 rat: 14,000 mg/kg (RTECS)

absorption

Symptoms: metallic taste, bloody diarrhea, Circulatory collapse

### *Acute inhalation toxicity*

LC50 rat: > 4.588 mg/l; 4 h

OECD Test Guideline 403

absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

### *Acute dermal toxicity*

LD50 rabbit: 1,425 mg/kg

US-EPA

absorption

### *Skin irritation*

In vitro study

Result: non-corrosive

OECD Test Guideline 435

In vitro study

OECD Test Guideline 439 Causes skin irritation.

### *Eye irritation*

Causes serious eye irritation.

### *Sensitization*

In animal experiments: mouse

Result: Does not cause skin sensitization.

Method: OECD Test Guideline 429

### *Repeated dose toxicity*

(as aqueous solution)

### *Genotoxicity in vitro*

Mutagenicity (mammal cell test):

MOUSE LYMPHOMA TEST

Result: negative

Method: OECD Test Guideline 476

UDS (Unscheduled DNA synthesis assay)

Result: negative

Method: OECD Test Guideline 482

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### *Specific target organ systemic toxicity - single exposure*

Inhalation

Target Organs: Respiratory system

May cause respiratory irritation.

### *Specific target organ systemic toxicity - repeated exposure*

Ingestion

Target Organs: thyroid

Causes damage to organs through prolonged or repeated exposure.

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **Carcinogenicity**

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## **Further information**

Systemic effects:

After uptake:

Fever

Chronic intoxication:

Skin disorders, Allergic reactions, rhinitis, conjunctivitis, bronchitis, Asthma

Handle in accordance with good industrial hygiene and safety practice.

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## **SECTION 12. Ecological information**

### **Ecotoxicity**

#### *Toxicity to fish*

static test LC50 *Oncorhynchus mykiss* (rainbow trout): 1.67 mg/l; 96 h (ECHA)

#### *Toxicity to daphnia and other aquatic invertebrates*

static test EC50 *Daphnia magna* (Water flea): 0.55 mg/l; 48 h (ECHA)

#### *Toxicity to algae*

Growth inhibition ErC50 *Desmodesmus subspicatus* (green algae): 0.13 mg/l; 72 h

OECD Test Guideline 201

Growth inhibition NOEC *Desmodesmus subspicatus* (green algae): 0.025 mg/l; 72 h

OECD Test Guideline 201



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### *Toxicity to bacteria*

EC50 activated sludge: 280 mg/l; 3 h  
OECD Test Guideline 209

### **Persistence and degradability**

#### *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

### **Bioaccumulative potential**

*Partition coefficient: n-octanol/water*

log Pow: 2.49

(experimental)

Bioaccumulation is not expected. (Lit.)

### **Mobility in soil**

No information available.

### *Additional ecological information*

Discharge into the environment must be avoided.

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## **SECTION 13. Disposal considerations**

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## **SECTION 14. Transport information**

### **Land transport (DOT)**

UN number	UN 3495
Proper shipping name	IODINE
Class	8 (6.1)
Packing group	III
Environmentally hazardous	--

### **Air transport (IATA)**

UN number	UN 3495
Proper shipping name	IODINE
Class	8 (6.1)
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

### **Sea transport (IMDG)**

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UN number	UN 3495
Proper shipping name	IODINE
Class	8 (6.1)
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-B

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### SECTION 15. Regulatory information

#### United States of America

##### OSHA Hazards

Target organ effects

Corrosive to skin

Corrosive to eyes

Harmful if inhaled.

Harmful if swallowed.

Harmful in contact with skin.

Corrosive to respiratory system

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

##### SARA 311/312 Hazards

Chronic Health Hazard

##### SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

##### SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

##### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

##### DEA List I

Listed

##### *Ingredients*

Iodine

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##### DEA List II

Not listed

### US State Regulations

#### Massachusetts Right To Know

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### *Ingredients*

Iodine

### **Pennsylvania Right To Know**

#### *Ingredients*

Iodine

### **New Jersey Right To Know**

#### *Ingredients*

Iodine

### **California Prop 65 Components**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

### **Notification status**

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

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## **SECTION 16. Other information**

### **Training advice**

Provide adequate information, instruction and training for operators.

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

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

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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