



# HazTech Systems, Inc.

## SAFETY DATA SHEET

Revision number: 2  
Revision date: 07/02/2015

### 1. IDENTIFICATION

**Product name:** Iodine  
**Product code:** RE2339  
**Synonyms:** N/A  
**CAS:** 7553-56-2  
**RTECS #** NN1575000  
**CI#:** Not available  
**Recommended use:** Laboratory chemicals, Manufacture of substances  
**Uses advised against:** No information available

**Company:**

HazTech Systems, Inc.  
3919 Bootjack Lane  
Mariposa, CA 95338 U.S.A.  
Telephone:  
1-800-543-5487 / 1-209-966-8088  
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www.hazcat.com

**Chemical Emergencies:**

HazTech Systems, Inc. (8:00am - 5:00pm) PST  
1-800-543-5487  
**Transportation Emergencies:**  
Chemtrec 24-Hour  
1-800-424-9300 (U.S.A.)  
1-703-527-3887 (International)

### 2. HAZARD(S) IDENTIFICATION

**Classification of the substance or mixture**

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity , Inhalation (Category 4), H332

Acute toxicity , Dermal (Category 4), H312

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system , H335

Specific target organ toxicity - repeated exposure , Oral (Category 1), Thyroid , H372

Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

**GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

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 statement(s)

P260

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P264

Wash skin thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P271

Use only outdoors or in a well-ventilated area.

P273

Avoid release to the environment.

P280

Wear eye protection/ face protection.

**2. HAZARDS IDENTIFICATION**

P280	Wear protective gloves/ protective clothing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
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.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well -ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substances**

Formula	:	I <sub>2</sub>
Molecular weight	:	253.81 g/mol
CAS -No.	:	7553 -56 -2
EC-No.	:	231 -442 -4
Index -No.	:	053 -001 -00 -3

**Hazardous components**

Component	Classification	Concentration
<b>Iodine</b>	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; STOT RE 1; Aquatic Acute 1; H312 + H332, H315, H319, H335, H372, H400	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

**4. FIRST AID MEASURES**

**Description of first aid measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

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

No data available

**5. FIREFIGHTING MEASURES**

**Extinguishing media**

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

Hydrogen iodide

**5. FIREFIGHTING MEASURES**

**Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**Further information**

No data available

**6. ACCIDENTAL RELEASE MEASURES**

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

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**Reference to other sections**

For disposal see section 13.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.

**Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas. Hygroscopic.

Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

**Specific end use(s)**

Apart from the uses mentioned in section 1 no other specific uses are stipulated

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Components with workplace control parameters**

Component	CAS -No.	Value	Control parameters	Basis
Iodine	7553 -56 -2	CEIL	0.100000 ppm 1.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		C	0.100000 ppm 1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z -1 Limits for Air Contaminants
	Remarks	The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing -zone air samples.		
		C	0.1 ppm 1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z -1 Limits for Air Contaminants
		The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing -zone air samples.		
		C	0.100000 ppm 1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.010000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Hypothyroidism Not classifiable as a human carcinogen		
		TWA	0.010000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Hypothyroidism Not classifiable as a human carcinogen		

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

		STEL	0.100000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Hypothyroidism Not classifiable as a human carcinogen		

**Exposure controls**

**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material : Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time : 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material : Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time : 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

- a) Appearance                      Form : solid    Colour : black, violet
- b) Odour                              pungent
- c) Odour Threshold                No data available
- d) pH                                    5.4
- e) Melting point/freezing point    Melting point/range : 113 °C (235 °F) - lit.
- f) Initial boiling point and boiling range    184 °C (363 °F) - lit.
- g) Flash point                        No data available
- h) Evaporation rate                No data available
- i) Flammability (solid, gas)        No data available
- j) Upper/lower flammability or explosive limits    No data available

**9. PHYSICAL AND CHEMICAL PROPERTIES**

k)	Vapour pressure	0.41 hPa (0.31 mmHg)	at 25 °C (77 °F)
l)	Vapour density	8.76 - (Air = 1.0)	
m)	Relative density	4.930 g/cm <sup>3</sup>	
n)	Water solubility	0.3 g/l at 25 °C (77 °F)	- slightly soluble
o)	Partition coefficient: n - octanol/water	log Pow : 2.49	at 20 °C (68 °F)
p)	Auto-ignition temperature	No data available	
q)	Decomposition temperature	No data available	
r)	Viscosity	No data available	
s)	Explosive properties	No data available	
t)	Oxidizing properties	No data available	

**Other safety information**

Relative vapour density 8.76 - (Air = 1.0)

**10. STABILITY AND REACTIVITY**

**Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

No data available

**Conditions to avoid**

No data available

**Incompatible materials**

Rubber, Plastics, Iron and iron salts., Sulphur compounds, Ammonia, Magnesium, Zinc, Aluminum, Metals, Alkalis, Antimony salts, Arsenites, bromides, chlorides, iodides, thiocyanates, ferrous salts, hypophosphites, morphine salts, oils, creosote, phosphates, tannins, tartrates, Mixing iodine, antimony, and ammonia resulted in an explosion. A violent reaction occurs between iodine and acetaldehyde., Acetylene, Acetaldehyde, Strong oxidizing agents

**Hazardous decomposition products**

Other decomposition products - No data available

In the event of fire: see section 5

**11. TOXICOLOGICAL INFORMATION**

**Information on toxicological effects**

**Acute toxicity**

LD50 Oral - Rat - 14,000 mg/kg

Remarks : Diarrhoea

LC50 Inhalation - Rat - 4 h - > 4.588 mg/l

(OECD Test Guideline 403)

Remarks : Cough Respiratory disorder

LC50 Dermal - Rat - male - 1,425 mg/kg

(OPPTS 870.1200)

No data available

**Skin corrosion/irritation**

Skin - reconstructed human epidermis (RhE)

Result : Moderate skin irritation

**Serious eye damage/eye irritation**

Moderate eye irritation

**Respiratory or skin sensitisation**

- Mouse

Result : Does not cause skin sensitisation.

(OECD Test Guideline 429)

**Germ cell mutagenicity**

Hamster

Embryo

Result : negative

Mutagenicity (micronucleus test)

Mouse - male and female

Result : negative

**11. TOXICOLOGICAL INFORMATION**

**Carcinogenicity**

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

**Reproductive toxicity**

No data available  
No data available

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation. - Respiratory system

**Specific target organ toxicity - repeated exposure**

Oral - Causes damage to organs through prolonged or repeated exposure. - Thyroid

**Aspiration hazard**

No data available

**Additional Information**

RTECS : NN1575000

Prolonged exposure to iodides may produce iodism in sensitive individuals. Symptoms of exposure include: skin rash, running nose, headache and irritation of the mucous membrane. For severe cases the skin may show pimples, boils, hives, blisters and black and blue spots. Iodides are readily diffused across the placenta. Neonatal deaths from respiratory distress secondary to goiter have been reported. Iodides have been known to cause drug-induced fevers, which are usually of short duration.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

**12. ECOLOGICAL INFORMATION**

**Toxicity**

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout)	- 1.7 mg/l	- 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea)	- 0.2 mg/l	- 48 h
Toxicity to algae	Growth inhibition EC50 - Desmodesmus subspicatus (green algae)	- 0.13 mg/l	(OECD Test Guideline 201 )

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**Other adverse effects**

Very toxic to aquatic life.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION**

**DOT (US)**

UN number: 3495      Class : 8 (6.1)      Packing group : III  
Proper shipping name : Iodine  
Reportable Quantity (RQ):  
Poison Inhalation Hazard : No

**14. TRANSPORT INFORMATION**

**IMDG**

UN number : 3495      Class : 8 (6.1)      Packing group : III      EMS-No: F-A , S-B  
Proper shipping name : IODINE  
Marine pollutant:yes

**IATA**

UN number: 3495      Class : 8 (6.1)      Packing group : III  
Proper shipping name : Iodine

**15. REGULATORY INFORMATION**

**SARA 302 Components**

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

**SARA 313 Components**

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 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

	CAS -No.	Revision Date
Iodine	7553 -56 -2	2007 -03 -01

**Pennsylvania Right To Know Components**

	CAS -No.	Revision Date
Iodine	7553 -56 -2	2007 -03 -01

**New Jersey Right To Know Components**

	CAS -No.	Revision Date
Iodine	7553 -56 -2	2007 -03 -01

**California Prop. 65 Components**

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

**16. OTHER INFORMATION**

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

Acute Tox.      Acute toxicity  
Aquatic Acute      Acute aquatic toxicity  
Eye Irrit.      Eye irritation  
H312      Harmful in contact with skin.  
H312 + H332      Harmful in contact with skin or if inhaled  
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.

**HMIS Rating**

Health hazard : 2  
Chronic Health Hazard : \*  
Flammability : 0  
Physical Hazard 0

**NFPA Rating**

Health hazard : 2  
Fire Hazard : 0  
Reactivity Hazard : 0

**Revision Date:** 07/02/2015

**Prepared by:** HazTech Systems, Inc.

*This information is based on HazTech Systems, Inc.'s, current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*