



1210 Airpark Road
Woodward, OK 73801
1-800-854-4064 * (580) 256-0500
Fax (580) 256-0575
Website: www.deepwaterchemicals.com

Material Safety Data Sheet

All non-emergency questions should be
Directed to Customer Service at
800-854-4064

24 hour Emergency Telephone: Chemtrec 800-424-9300
National Response in Canada: Canutec 613-996-6666
Outside U.S. and Canada: Chemtrec 703-527-3887

Note: Chemtrec and Canutec emergency numbers to be used only
in the event of chemical emergencies involving a spill, leak,
exposure or accident involving chemicals.

Product Name: **Iodine**

1. Chemical Product Identification

Common name/synonyms: Iodine crystals, Iodine sublimed
CAS#: 7553-56-2
Molecular Weight: 253.81
Chemical Formula: I₂

2. Composition/Information on Ingredients

Ingredient	CAS No.	Percent	Hazardous
Iodine	7553-56-2	99-100%	Yes

3. Hazards Identification/Health Effects

EMERGENCY OVERVIEW

Poison! Danger! Corrosive. Causes severe irritation or burns to every area of contact. May be fatal if swallowed or inhaled. Vapors cause severe irritation to skin, eyes and respiratory tract. Strong oxidizer. Contact with other material may cause fire. Affects the cardiovascular and central nervous systems.

Routes of entry:

Skin Contact Yes	Skin Absorption Yes	Eye Contact Yes	Inhalation Yes	Ingestion Yes
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Health Effects:

Exposure Limits Yes	Irritant Yes	Sensitization Yes	Teratogen No	Reproductive Hazard No	Mutagen No
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Potential Health Effects

Eye Contact: Corrosive! Vapors are extremely irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

Skin Contact: Corrosive! Liquid contact may cause blistering burns, irritation and pain. Vapors may be severely irritating to the skin.

Ingestion: Toxic! Can cause severe burns of the mouth, throat and stomach. Causes abdominal pain, diarrhea, fever, and vomiting. Iodine is more toxic by the oral route in humans than in experimental animals. Ingestion of 2 to 3 grams of the solid may be fatal in humans.

Inhalation: Toxic! Vapors severely irritate and can burn the mucous membranes and respiratory tract. The acute toxicity of iodine by inhalation is high. Exposure can cause severe breathing difficulties, headache, tightness of the chest and congestion of the lungs.

Chronic Exposure/Target Organs: Exposure to iodine may cause insomnia, conjunctivitis, inflammation of the nasal passages, bronchitis, rapid heart beat, diarrhea and weight loss. Allergic sensitization may occur.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders, eye problems, impaired respiratory function or disease of the thyroid, lungs or kidney may be more susceptible to the effects of the substance.

NFPA HAZARD CODES	HMIS HAZARD CODES	RATINGS SYSTEM
Health: 2	Health: 2	0= No Hazard
Flammability: 0	Flammability: 0	1= Slight Hazard
Reactivity: 2	Reactivity: 2	2= Moderate Hazard
		3= Serious Hazard
		4= Severe Hazard

4. First Aid Measures

Eyes: Flush with copious amounts of water for 15 minutes, occasionally lifting the upper and lower lids. SEEK MEDICAL ATTENTION if irritation persists.

Skin: Wash skin with copious amounts of water and soap for 15 minutes while removing any contaminated clothing and shoes. Iodine stains can be removed by immediately washing skin with 5% sodium thiosulfate solution. SEEK MEDICAL ATTENTION if irritation persists.

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. SEEK MEDICAL ATTENTION IMMEDIATELY.

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. SEEK MEDICAL ATTENTION IMMEDIATELY. Observe for the development of pulmonary edema.

5. Fire Fighting Measures

Flash Point: No data
LEL % : No data
UEL % : No data

Method: N/A
Auto-ignition: N/A

FIRE AND EXPLOSION HAZARDS : Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

EXTINGUISHING MEDIA: Use dry powder or carbon dioxide extinguishers. Water spray may be used to keep fire exposed containers cool. Keep water use to a minimum.

FIRE FIGHTING INSTRUCTIONS:

Small Fires: Dry chemical, CO₂ or alcohol-resistant foam.

Large Fires: Dry chemical, CO₂ or alcohol-resistant foam. Move containers from area if you can without risk. Dike fire control water for later disposal. Do not scatter material.

6. Accidental Release Measures

Evacuation: Notify safety personnel of iodine spills or leaks. Ventilate and isolate hazard area. Keep unnecessary and unprotected personnel from entering. Wear proper protective equipment. Collect and containerize as much solid iodine as possible. Cover the spill area with an excess of reducing agent (sodium thiosulfate, bisulfate) and then neutralize with caustic soda or potash. Collect slurry into approved containers.

Containment: Eliminate all ignition sources. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if you can do without risk. Prevent entry into waterways, sewers, basements or confined areas.

Reporting: In the event of a Hazardous Materials Incident during transportation, the regulations in 49CFR 171.5 and 171.16 are to be followed. Under 40CFR 302.6 (CERCLA), any release of a substance in a quantity equal to or greater than its threshold amount to soil, water or air, must be reported to the US Coast Guard National Response Center at 800-424-8801, as soon as that person has knowledge of the release.

7. Handling and Storage

Storage Conditions: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed and away from sources of heat or ignition. Containers of this material may be hazardous when empty since they contain product residue.

8. Exposure Controls/Personal Protection

<u>Substance (CAS NO.)</u>	<u>ACGIH- TLV</u>	<u>ACGIH- STEL</u>	<u>OSHA- PEL</u>	<u>OSHA- STEL</u>
Iodine (7553-56-2)		0.1 ppm	0.1 ppm	

Engineering Controls/Ventilation: Use appropriate engineering controls to reduce air contamination to approved or permissible standards. Where such systems are not effective, wear suitable personal protective equipment which performs satisfactorily and meets local/national standards.

Eye/Face Protection: Wear appropriate protective eyeglasses or chemical safety goggles as described in OSHA's 29 CFR 1910.133 Eye and Face Protection Standard.

Skin Protection: Proper protective gloves should be worn when handling hazardous or toxic materials. The degradation and permeation characteristics of the glove material selected must be appropriate for protection from the material being handled. Glove selection guides should be consulted.

Respiratory Protection: Follow the OSHA 's 29 CFR 1910.134 Respirator Protection Program regulations. Always use a NIOSH approved respirator when necessary with the proper gas/vapor cartridge. Observe the manufacturer's cartridge service-life and the recommended change schedule. If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood or full-facepiece SCBA. This substance has unknown warning properties.

9. Physical and Chemical Properties

PARAMETER

Physical state (gas, liquid, solid)	Bluish-black crystals; metallic luster
Odor	Sharp, characteristic odor
Specific Gravity	4.98
Vapor pressure3 mmHg @ 20 °C
Vapor density (Air=1)	8.8
Evaporation	Not available
Boiling Point	184 °C (sublimes)
pH	5.4 (saturated solution)
Solubility	Slightly soluble (.03 g/100g water)
Melting Point	114 °C

Note: The physical data presented above are typical values and should not be construed as a specification.

10. Stability and Reactivity

Stability: Stable under ambient temperatures and pressures.

Incompatible Materials: Incompatible with ammonia, powdered metals, alkali metals or strong reducing agents. Reaction can be violent or explosive with acetaldehyde and acetylene. Reacts with ammonium hydroxide to form shock-sensitive iodides on drying.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

<u>Substance (CAS No.)</u>	<u>Route(s) of Entry</u>	<u>Value</u>	<u>Critical Effects</u>
Iodine (7553-56-2)	LCLo inhal (rat)	80 mg/m ³	Irritation
	LD ₅₀ oral (rat)	14,000 mg/kg	CNS

12. Ecological Information

Terrestrial Fate: Not available

Aquatic Fate: Not available

13. Disposal Considerations:

Dispose of in a manner consistent with federal, state and local regulations.

RCRA- This material does not meet the criteria for RCRA F, P or U-series waste codes. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements.

14. Transport Information

SHIPPING CRITERIA	US DOT	IATA
Proper Shipping Name	Not Regulated	Not Regulated
Hazard Class		
Identification Number		
Packing Group		
Shipping Label		
Additional Marking Requirement		

15. Regulatory Information

- OSHA:** This material is not considered Z-1 Hazardous Toxic Material or under 29CFR 1910.119 Process Safety Management.
- EPA:** Clean Air Act- This material is not a Hazardous Air Pollutant (HAP), or a Class 1 or 2 Ozone Depletor.
Clean Water Act- This material is not listed as a Hazardous Substance, Priority Pollutant and as a Toxic Pollutant.
TSCA- This material is listed on the Public Inventory.

Advise your state agencies, SEPC and LEPC for regulations if applicable.

16. Other Information

Users Responsibility: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions are required. Any health hazard and safety information herein should be passed on to your customers or employees.

Disclaimer of Liability: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

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For Technical or Regulatory Information contact:

Deepwater Chemicals, Inc.
Regulatory Department
1210 Airpark Road
Woodward, Oklahoma 73801
(580)-256-0500