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Material Safety Data Sheet

EMERGENCY NUMBERS:

(USA) CHEMTREC : 1(800) 424-9300 (24hrs)
 (CAN) CANUTEC : 1(613) 996-6666 (24hrs)

WHMIS	Protective Clothing	TDG Road/Rail
WHMIS CLASS: E D-1A D-2A		TDG CLASS: 8 6.1 PIN: UN2922 PG: II
		

Section I. Product Identification and Uses

Product name	IODINE (IODINE-IODIDE), 0.1N, ACCULUTE		
Chemical formula	Not applicable.	CI#	Not available.
Synonyms	C-3545	CAS#	Not applicable.
		Code	C-3545
		Formula weight	Not applicable.
		Supersedes	
Material uses	For laboratory use only.		

Section II. Ingredients

Name	CAS #	%	TLV
1) POTASSIUM IODIDE	7681-11-0	60-100	Not established by ACGIH
2) IODINE	7553-56-2	10-30	Exposure limit: ACGIH 0.01 ppm
3) HYDROCHLORIC ACID	7647-01-0	<1	Exposure limit: ACGIH Ceiling limit 2 ppm
4) WATER	7732-18-5	Balance	Not established by ACGIH

Toxicity values of the hazardous ingredients	<p>IODINE: ORAL (LD50): Acute: 10000 mg/kg (Rabbit). 22000 mg/kg (Mouse). 14000 mg/kg (Rat). ORAL (LDLo): Acute: 28 mg/kg (Human).</p> <p>POTASSIUM IODIDE: ORAL (LDLo): Acute: 1862 mg/kg (Mouse). 916 mg/kg (Rabbit).</p> <p>HYDROCHLORIC ACID: ORAL (LD50): Acute: 900 mg/kg (Rabbit). VAPOR (LC50): Acute: 3124 ppm (Rat) (1 hour(s)). 1108 ppm (Mouse) (1 hour(s)). VAPOR (LCLo): Acute: 1300 ppm (Human) (30M).</p>
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Section III. Physical Data

IODINE (IODINE-IODIDE), 0.1N, ACCULUTE page 2/4

Physical state and appearance / Odor	Reddish-brown liquid.
pH (1% soln/water)	Not available.
Odor threshold	Not available.
Percent volatile	100% (Water).
Freezing point	Not available.
Boiling point	Not available.
Specific gravity	>1 (Water = 1)
Vapor density	Not available.
Vapor pressure	Not available.
Water/oil dist. coeff.	Not available.
Evaporation rate	Not available.
Solubility	Miscible in water.

Section IV. Fire and Explosion Data

Flash point	Not applicable.
Flammable limits	Not applicable.
Auto-ignition temperature	Not applicable.
Fire degradation products	Oxides of iodine and potassium. Hydrogen iodide. Hydrogen chloride.
Fire extinguishing procedures	Use extinguishing media suitable for surrounding materials. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode.
Fire and Explosion Hazards	Dried product residue can act as an oxidizer. Drying on clothing or other materials may cause fire. Contact with other material may cause fire and/or explosion. The sensitivity to static discharge is not available. The sensitivity to impact is not available. Emits toxic fumes under fire conditions.

Section V. Toxicological Properties

Routes of entry	Inhalation and ingestion. Skin contact. Eye contact. Skin absorption.
Effects of Acute Exposure	May be fatal by ingestion, inhalation or skin absorption. Corrosive. Target organs: skin, eyes, respiratory system, central nervous system, cardiovascular system. 2 ppm (IODINE) is immediately dangerous to life or health.
Eye	Causes severe irritation. May cause severe burns and loss of vision. May cause permanent damage. Lachrymator.
Skin	Causes severe irritation or burns. May cause sensitization by skin contact. Readily absorbed through skin. See inhalation.
Inhalation	Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, laryngitis, dyspnea, headache, rhinitis, nausea, fever and vomiting.
Ingestion	Burns in mouth, pharynx and gastrointestinal tract. Gastroenteritis, abdominal pain, diarrhea, nausea, vomiting, anuria, delirium, fever, shock and kidney damage. 2 to 4 grams iodine may be fatal.

Section V. Toxicological Properties

IODINE (IODINE-IODIDE), 0.1N, ACCULUTE page 3/4

Effects of Chronic Overexposure	<p>May cause sensitization by inhalation and skin contact. Hypothyroidism with possible goiter. Passes through the placental barrier in human. Excreted in maternal milk in human.</p> <p>Iodine: May cause tremor, skin rash, running nose, headache, salivation, diarrhea, rhinitis, irritation of the mucous membranes, sneezing, fever, parotitis, tachycardia, insomnia, liver, kidney, thyroid, lung, central nervous system, and cardiovascular system damage. Weakness, anemia, loss of weight, laryngitis, bronchitis, stomatitis, conjunctivitis and edema of the glottis and general depression may also occur. For severe cases the skin may show pimples, boils, hives, blisters and black and blue spots. Suspected teratogen.</p> <p>Potassium iodide: May produce "iodism" which may be manifested by skin rash (boils, blisters, blue and black spots), running nose, headache, salivation, diarrhea, rhinitis and irritation of the mucous membranes. Weakness, anemia, loss of weight, laryngitis, bronchitis, stomatitis, conjunctivitis, edema of the glottis and general depression may also occur. May cause reproductive effects based on studies in laboratory animals. Mutagen. Postnatal development injury in animal. Embryotoxic and/or foetotoxic in animal. Carcinogenic effects: Not available. Toxicity of the product to the reproductive system: Not available. To the best of our knowledge, the chemical, physical, and toxicity of this substance has not been fully investigated.</p>
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Section VI. First Aid Measures

Eye contact	IMMEDIATELY flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Seek immediate medical attention.
Skin contact	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash contaminated clothing before reusing.
Inhalation	Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration or CPR if breathing has ceased. Seek immediate medical attention.
Ingestion	If conscious, wash out mouth with water. Have conscious person drink several glasses of water to dilute. DO NOT induce vomiting. Seek immediate medical attention. Never give anything by mouth to an unconscious or convulsing person.

Section VII. Reactivity Data

Stability	Stable. Conditions to avoid: High temperatures, sparks, open flames and all other sources of ignition, contamination.
Hazardous decomp. products	Not available.
Incompatibility	<p>Iodine: May explode with ammonia, powdered metals (antimony, magnesium, zinc, aluminum, silver, titanium, zirconium, copper, etc.), alkali metals, acetaldehyde, acetylene, carbides, phosphorus, hydrides, azides, sulfur, oxidizers, boron, ammonium hydroxyde, ammonium salts, oil, reducing materials, combustible materials, organic materials, sulfides, sodium hydride, mercuric oxide, pyridine, cesium monoxide, acetylides, ethanol, formamide, metal acetylides, sodium phosphinate, halogens, interhalogens (bromine pentafluoride, chlorine trifluoride, etc...), unsaturated organic compounds, ammonia solutions, alkaline solutions. Corrodes steel.</p> <p>Potassium iodide: Reacts violently with oxidizing agents, perchloric acid, bromine trifluoride, bromine trichloride, chlorine trifluoride, chloral hydrate, fluorine perchlorate, diazonium salts, potassium perchlorate, diisopropyl peroxydicarbonate, bromine pentafluoride, charcoal, calomel, alkali metals. Acids, organic materials, metals (ex: steel, aluminum, brass, magnesium, zinc, cadmium, tin, copper, nickel and their alloys), reducing agents, metallic salts, tartaric acid.</p>
Reaction Products	Reacts with ammonium hydroxyde to form shock-sensitive iodides. Corrosive to metals. May decompose on exposure to light. Hazardous polymerization will not occur.

Section VIII. Preventive Measures

IODINE (IODINE-IODIDE), 0.1N, ACCULUTE page 4/4

Protective Clothing in case of spill and leak Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

Spill and leak Evacuate the area. Absorb on sand or vermiculite and place in a closed container for disposal. Ventilate area and wash spill site after material pick up is complete. DO NOT empty into drains. DO NOT touch spilled material. Avoid contact with a combustible material (wood, paper, oil, clothing...).

Waste disposal According to all applicable regulations.

Storage and Handling Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from incompatible materials. Do not add any other material to the container. Do not wash down the drain. Do not breathe gas/fumes/vapor/spray. In case of insufficient ventilation, wear suitable respiratory equipment. Keep away from direct sunlight or strong incandescent light. Keep container tightly closed and dry. Manipulate in a well ventilated area or under an adequate fume hood. Empty containers may contain a hazardous residue. Handle and open container with care. Take off immediately all contaminated clothing. Avoid contact with a combustible material (wood, paper, oil, clothing...). This product must be manipulated by qualified personnel. Do not get in eyes, on skin, or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling.

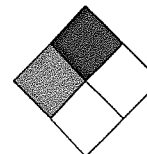
Section IX. Protective Measures

Protective clothing Face shield and/or splash goggles. Impervious gloves, apron, coveralls, and/or other resistant protective clothing. Sufficient to protect skin. A OSHA/MSHA jointly approved respirator is advised in the absence of proper environmental controls. If more than TLV, do not breathe vapor. Wear self-contained breathing apparatus. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location.

Engineering controls Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Do not use in unventilated spaces.

Section X. Other Information

Special Precautions or comments Corrosive! Toxic! Sensitizer! Mutagen! Suspected teratogen! Readily absorbed through skin. Do not breathe vapor. Avoid all contact with the product. Avoid prolonged or repeated exposure. Manipulate in a well ventilated area or under an adequate fume hood. To the best of our knowledge, the chemical, physical and toxicity of this substance has not been fully investigated. Dried product residue can act as an oxidizer. Drying on clothing or other materials may cause fire. Handle and open container with care. Container should be opened only by a technically qualified person.
Synergistic materials: Potassium iodide increases the toxicity of selenium.
RTECS NO: NN1575000 (Iodine).
RTECS NO: TT2975000 (Potassium iodide)
RTECS NO: MW4025000 (Hydrochloric acid).



NFPA

Prepared by MSDS Department/Département de F.S..

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