



## IODINE CHLORIDE

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### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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#### PRODUCT NAME

IODINE CHLORIDE

#### OTHER NAMES

CL-I, ICI, "Wijs' chloride", chloriodide

#### PROPER SHIPPING NAME

IODINE MONOCHLORIDE

#### PRODUCT USE

In Wij's solution (iodine chloride in glacial acetic acid) used to determine iodine value of fats and oils.

#### SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

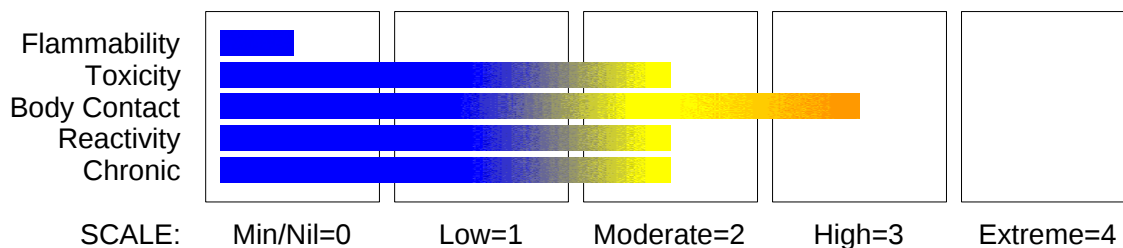
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

#### HAZARD RATINGS



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### Section 2 - HAZARDS IDENTIFICATION

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#### GHS Classification

Metal Corrosion Category 1

Skin Corrosion/Irritation Category 1B

continued...

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## Section 2 - HAZARDS IDENTIFICATION



### EMERGENCY OVERVIEW

#### HAZARD

DANGER

Determined by using GHS criteria:

H290 H314

May be corrosive to metals

Causes severe skin burns and eye damage

#### PRECAUTIONARY STATEMENTS

##### Prevention

Do not breathe dust or mist.

Wash thoroughly after handling.

Wear protective gloves/clothing and eye/face protection.

##### Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Wash contaminated clothing before reuse.

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

Specific treatment: refer to Label or MSDS.

Absorb spillage to prevent material damage.

Immediately call a POISON CENTER or doctor/physician.

If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.

##### Storage

Store locked up.

Store in a corrosive resistant container with a resistant liner.

##### Disposal

Dispose of contents and container in accordance with relevant legislation.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME                                 | CAS RN    | %   |
|--------------------------------------|-----------|-----|
| iodine chloride                      | 7790-99-0 | >98 |
| reaction products with water include |           |     |
| hydrogen chloride                    |           |     |
| hydrogen iodide                      |           |     |
| decomposes in air to produce         |           |     |
| iodine pentoxide                     |           |     |

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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## Section 4 - FIRST AID MEASURES

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### SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

### EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

### NOTES TO PHYSICIAN

For acute or short term repeated exposures to strong acids:

- Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues.

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## Section 4 - FIRST AID MEASURES

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### INGESTION:

- Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- Charcoal has no place in acid management.
- Some authors suggest the use of lavage within 1 hour of ingestion.

### SKIN:

- Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- Deep second-degree burns may benefit from topical silver sulfadiazine.

### EYE:

- Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes. DO NOT use neutralising agents or any other additives. Several litres of saline are required.
  - Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
  - Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).
- [Ellenhorn and Barceloux: Medical Toxicology].

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

DO NOT use water.

### FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.

- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.

Fight fire from a safe distance, with adequate cover.

Cool fire exposed containers with water spray from a protected location.

DO NOT approach containers suspected to be hot.

If safe to do so, remove containers from path of fire.

Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

Will not burn but increases intensity of fire.

### Personal Protective Equipment

Breathing apparatus.  
Chemical splash suit.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Clean up all spills immediately.
- No smoking, naked lights, ignition sources.
- Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result.
- Avoid breathing dust or vapours and all contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with dry sand, earth, inert material or vermiculite.
- DO NOT use sawdust as fire may result.
- Scoop up solid residues and seal in labelled drums for disposal.
- Neutralise/decontaminate area.

#### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.
- No smoking, flames or ignition sources. Increase ventilation.
- Contain spill with sand, earth or other clean, inert materials.
- NEVER USE organic absorbents such as sawdust, paper or cloth.
- Use spark-free and explosion-proof equipment.
- Collect any recoverable product into labelled containers for possible recycling.
- Avoid contamination with organic matter to prevent subsequent fire and explosion.
- DO NOT mix fresh with recovered material.
- Collect residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- Decontaminate equipment and launder all protective clothing before storage and re-use.
- If contamination of drains or waterways occurs advise emergency services.

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### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- Avoid personal contact and inhalation of dust, mist or vapours.

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## Section 7 - HANDLING AND STORAGE

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- Always wear protective equipment and wash off any spillage on clothing.
- Use in well ventilated areas, prevent accumulation of vapours.
- Keep material away from light, heat, ignition sources, flammables or combustibles.
- Keep dry and away from incompatible materials.
- Keep cool and below defined Control Temperature.
- Avoid friction, shock or containment.
- Use non-sparking equipment.
- Avoid physical damage to containers
- DO NOT repack or return unused portions to original container.
- Withdraw only sufficient material for immediate use.
- Contamination can cause VIOLENT DECOMPOSITION with intense heat and fire.
- Ensure proper rotation of stocks to limit decomposition and instability which may occur on long storage.
- When handling NEVER smoke, eat or drink.
- Always wash hands with soap and water after handling.
- Use only good occupational work practice.
- Observe manufacturer's storing and handling directions.

### SUITABLE CONTAINER

Packaging as recommended by manufacturer.

- Check that containers are clearly labelled.

Glass container.

Glass carboy.

Polyethylene or polypropylene container.

### STORAGE INCOMPATIBILITY

Oxidising agents as a class are not necessarily combustible themselves, but can increase the risk and intensity of fire in many other substances.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed as supplied.
- Store in a cool, well ventilated area.
- Keep dry.
- Store under cover and away from sunlight.
- Store away from flammable or combustible materials, debris and waste. Contact may cause fire or violent reaction.
- Store away from incompatible materials and foodstuff containers.
- DO NOT stack on wooden floors or pallets.
- Protect containers from physical damage.
- Check regularly for leaks.
- Observe manufacturer's storage and handling recommendations.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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### EXPOSURE CONTROLS

The following materials had no OELs on our records

- iodine chloride:

CAS:7790- 99- 0

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### MATERIAL DATA

None assigned. Refer to individual constituents.

### PERSONAL PROTECTION



#### EYE

- Chemical goggles.
- Full face shield.
- Safety glasses with side shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- PVC gloves.
- Nitrile gloves.
- Neoprene gloves.
- Safety footwear.
- PVC boots.

#### OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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adequate protection.

An approved self contained breathing apparatus (SCBA) may be required in some situations.

Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:

solvent, vapours, degreasing etc., evaporating from tank (in still air).

aerosols, fumes from pouring operations,

intermittent container filling, low speed

conveyer transfers, welding, spray drift,

plating acid fumes, pickling (released at low velocity into zone of active generation)

direct spray, spray painting in shallow booths,

drum filling, conveyer loading, crusher dusts,

gas discharge (active generation into zone of rapid air motion)

grinding, abrasive blasting, tumbling, high

speed wheel generated dusts (released at high

initial velocity into zone of very high rapid air motion).

Air Speed:

0.25- 0.5 m/s (50- 100 f/min.)

0.5- 1 m/s (100- 200 f/min.)

1- 2.5 m/s (200- 500 f/min.)

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only.

3: Intermittent, low production.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### APPEARANCE

Reddish-brown liquid; reacts violently with water producing irritating and corrosive vapours apparent as white or purple fumes.

Occurs in two crystalline forms;

alpha-form (stable):black needles (ruby red by transmitted light), mp=27.2;

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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beta-form (labile): black platelets (brownish red by transmitted light),  
mp = 13.9

### PHYSICAL PROPERTIES

Liquid.  
Corrosive.  
Acid.  
Reacts violently with water.

Molecular Weight: 162.38  
Melting Range (°C): 13.9(b); 27.2(a)  
Solubility in water (g/L): Reacts violently  
pH (1% solution): Not available  
Volatile Component (%vol): Not available  
Relative Vapour Density (air=1): >1  
Lower Explosive Limit (%): Not applicable  
Autoignition Temp (°C): Not available  
State: Liquid

Boiling Range (°C): 97 (decomp)  
Specific Gravity (water=1): 3.1 (29 C)  
pH (as supplied): Not applicable  
Vapour Pressure (kPa): Negligible  
Evaporation Rate: Not available  
Flash Point (°C): Not applicable  
Upper Explosive Limit (%): Not applicable  
Decomposition Temp (°C): Not available

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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

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### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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## Section 11 - TOXICOLOGICAL INFORMATION

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### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

Considered an unlikely route of entry in commercial/industrial environments.

##### EYE

The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.

When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

##### SKIN

The material can produce chemical burns following direct contact with the skin.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there

continued...

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## Section 11 - TOXICOLOGICAL INFORMATION

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may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

### INHALED

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation. Inhalation of quantities of liquid mist may be extremely hazardous, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and pulmonary oedema.

The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.

Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).

The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange, the primary function of the lungs. Therefore prolonged exposure to respiratory irritants may cause sustained breathing difficulties.

### CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures.

Iodine and iodides may produce goitre and hypothyroidism as well as hyperthyroidism. A mild toxic syndrome resulting from chronic iodide overdose and from repeated administration of small amounts of iodine ("iodism") is characterised by salivation, coryza, sneezing, conjunctivitis, headache, fever, laryngitis, bronchitis, stomatitis, parotitis (iodine mumps), and various skin rashes (iododerma\*, thrombotic thrombocytopenic purpura). Swelling and inflammation of the throat, irritated and swollen eyes and pulmonary oedema may also occur. Oedema of the glottis, necessitating tracheotomy has been reported. Occasional use of iodides for asthma in pregnancy has resulted in foetal death, severe goiter, hypothyroidism and the cretinoid appearance of the new-born. \*Iododerma may vary from mild erythema and acneform eruptions to urticaria and suppurative or haemorrhagic rashes.

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

### TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

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## Section 12 - ECOLOGICAL INFORMATION

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No data for iodine chloride.

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## Section 13 - DISPOSAL CONSIDERATIONS

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Recycle wherever possible.

Consult manufacturer for recycling options.

Consult State Land Waste Management Authority for disposal.

Treat and neutralise at an effluent treatment plant.

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## Section 13 - DISPOSAL CONSIDERATIONS

Bury residue in an authorised landfill.  
Decontaminate empty containers.  
Recycle containers if possible, or dispose of in an authorised landfill.  
For small quantities: Cautiously add a large stirred excess of water.  
Adjust pH to neutral, separate any insoluble solids or liquids for water disposal. Aqueous solution may be flushed down drain (local regulation permitting). Hydrolysis reactions generate heat and fumes which can be controlled by rate of addition. [Sigma/Aldrich]

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: CORROSIVE  
HAZCHEM: 4WE

### UNDG:

|                                    |      |                |      |
|------------------------------------|------|----------------|------|
| Dangerous Goods Class:             | 8    | Subrisk:       | None |
| UN Number:                         | 1792 | Packing Group: | II   |
| Shipping Name: IODINE MONOCHLORIDE |      |                |      |

### Air Transport IATA:

|                                    |      |                    |      |
|------------------------------------|------|--------------------|------|
| ICAO/IATA Class:                   | 8    | ICAO/IATA Subrisk: | None |
| UN/ID Number:                      | 1792 | Packing Group:     | II   |
| ERG Code:                          | 8L   |                    |      |
| Shipping name: IODINE MONOCHLORIDE |      |                    |      |

### Maritime Transport IMDG:

|                                    |            |                |      |
|------------------------------------|------------|----------------|------|
| IMDG Class:                        | 8          | IMDG Subrisk:  | None |
| UN Number:                         | 1792       | Packing Group: | II   |
| EMS Number:                        | F- A, S- B |                |      |
| Shipping name: IODINE MONOCHLORIDE |            |                |      |

## Section 15 - REGULATORY INFORMATION

### REGULATIONS

iodine chloride (CAS: 7790-99-0) is found on the following regulatory lists;  
WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established

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## Section 16 - OTHER INFORMATION

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The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 12-May-2018