# SAFETY DATA SHEET

**Preparation Date:** 4/19/2018  
**Revision Date:** 4/19/2018  
**Revision Number:** G1

## 1. IDENTIFICATION

**Product identifier**

<table>
<thead>
<tr>
<th>Product code:</th>
<th>I-147</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name:</td>
<td>IODINE MONOCHLORIDE, SOLUTION</td>
</tr>
</tbody>
</table>

**Other means of identification**

<table>
<thead>
<tr>
<th>Synonyms:</th>
<th>No information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS #:</td>
<td>Mixture</td>
</tr>
<tr>
<td>RTECS #:</td>
<td>Not available</td>
</tr>
<tr>
<td>CI#:</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**Recommended use of the chemical and restrictions on use**

<table>
<thead>
<tr>
<th>Recommended use:</th>
<th>No information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses advised against</td>
<td>No information available</td>
</tr>
</tbody>
</table>

**Supplier:**

Spectrum Chemical Mfg. Corp  
14422 South San Pedro St.  
Gardena, CA 90248  
(310) 516-8000

**Order Online At:**  
https://www.spectrumchemical.com

**Emergency telephone number**  
Chemtrec 1-800-424-9300

**Contact Person:**  
Martin LaBenz (West Coast)  
Ibad Tirmiz (East Coast)

## 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Dermal</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Vapors)</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1 Sub-category A</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

**Label elements**

**Danger**

**Hazard statements**

Harmful in contact with skin  
Harmful if inhaled  
Causes severe skin burns and eye damage  
Flammable liquid and vapor
Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
May be harmful if swallowed
Harmful to aquatic life with long lasting effects
Harmful to aquatic life

Precautionary Statements - Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/.../equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
In case of fire: Use CO2, dry chemical, or foam to extinguish.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>98.32</td>
</tr>
<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>1.68</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

First aid measures

General Advice:
National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact:
Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

Eye Contact:
Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation:
Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Call a physician immediately.

Ingestion:
Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms
Severe skin and eye irritation or burns
May cause abdominal pain, nausea, vomiting, diarrhea
Burning sensation in the mouth and stomach
Can burn mouth, throat, and stomach
Thirst
Irritating to respiratory system
May cause bronchitis
May cause build-up of fluid in the lungs (pulmonary edema)
Dyspnea (Shortness of breath and difficulty breathing)
Coughing and wheezing
Sneezing
May cause central nervous system effects
Convulsions
Blackening and erosion of teeth

Indication of any immediate medical attention and special treatment needed

Notes to Physician:
Treat symptomatically.

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media:
Carbon dioxide (CO2). Dry chemical. Alcohol-resistant foam. Water spray.

Unsuitable Extinguishing Media:
Do not use a solid (straight) water stream as it may scatter and spread fire.

Product code: I-147
Product name: IODINE MONOCHLORIDE, SOLUTION
Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon Monoxide, Carbon Dioxide.

Specific hazards: Flammable. May be ignited by heat, sparks or flames. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Container explosion may occur under fire conditions or when heated. Fire may produce irritating, corrosive and/or toxic gases.

Special Protective Actions for Firefighters

Specific Methods: Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods and material for containment and cleaning up

Methods for containment: Stop leak if you can do it without risk.

Methods for cleaning up: Neutralize with Sodium carbonate or Sodium bicarbonate. Dilute with water. Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Product code: I-147  Product name: IODINE MONOCHLORIDE, SOLUTION
Safe Handling Advice
Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Store at room temperature in the original container. Keep in a well-ventilated place. Store in a segregated and approved area. Store away from incompatible materials. Keep container tightly closed.

Incompatible Materials:
Oxidizing agents
Reducing agents
Metals
Bases
Acids

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WEEL</th>
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</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>10 ppm TWA</td>
<td>10 ppm TWA</td>
<td>15 ppm STEL</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25 mg/m³ TWA</td>
<td>25 mg/m³ TWA</td>
<td>10 ppm TWA</td>
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<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</table>

Canada

<table>
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<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Canada - Alberta</th>
<th>Canada - British Columbia</th>
<th>Canada - Ontario</th>
<th>Canada - Quebec</th>
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<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>10 ppm TWA</td>
<td>10 ppm TWA</td>
<td>10 ppm TWA</td>
<td>10 ppm TWAEV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25 mg/m³ TWA</td>
<td>10 ppm TWA</td>
<td>15 ppm STEL</td>
<td>25 mg/m³ TWAEV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 ppm STEL</td>
<td>15 ppm STEL</td>
<td>37 mg/m³ STEL</td>
<td>15 ppm STEV</td>
</tr>
<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
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<td>None</td>
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</table>

Australia and Mexico

<table>
<thead>
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<th>Components</th>
<th>CAS-No.</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>15 ppm STEL</td>
<td>10 ppm TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>37 mg/m³ STEL</td>
<td>25 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15 ppm STEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>37 mg/m³ STEL</td>
</tr>
<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering measures to reduce exposure:
Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Product code: I-147
Product name: IODINE MONOCHLORIDE, SOLUTION
**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

**Eye protection:** Face-shield and Goggles

**Skin and body protection:**
- Gloves
- Long sleeved clothing
- Chemical resistant apron
  If working with large quantities:
  - Chemical resistant protective suit
  - Boots

**Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state:</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance:</td>
<td>Clear.</td>
</tr>
<tr>
<td>Taste</td>
<td>Vinegar. Sour.</td>
</tr>
<tr>
<td>Molecular/Formula weight:</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability:</td>
<td>Flammable</td>
</tr>
<tr>
<td>Flash Point Tested according to:</td>
<td>Autoignition Temperature (°C/°F): 463 °C/865 °F (for Acetic acid)</td>
</tr>
<tr>
<td>Closed cup</td>
<td></td>
</tr>
<tr>
<td>Open cup</td>
<td></td>
</tr>
<tr>
<td>Upper Explosion Limit (%):</td>
<td>19.9% (for Acetic acid)</td>
</tr>
<tr>
<td>Boiling point/range(°C/°F):</td>
<td>118.1 °C/244.6 °F (for Acetic acid)</td>
</tr>
<tr>
<td>Specific gravity:</td>
<td>1.049 (for Acetic acid)</td>
</tr>
<tr>
<td>pH:</td>
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<tr>
<td>Evaporation rate:</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor threshold (ppm):</td>
<td>0.48 (for Acetic Acid)</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>log Kow = -0.2 (for Acetic acid)</td>
</tr>
</tbody>
</table>
| Miscibility:                     | Miscible with alcohol
| Miscible with Benzene            |                                                                                   |
| Miscible with Carbon tetrachloride |                                                                                   |
| Miscible with Glycerol           |                                                                                   |
| Solubility:                      | Freely soluble in water
| Solubility:                      | Soluble in Acetone                                                               |
| Solubility:                      | Soluble in Ether                                                                 |
| Solubility:                      | Practically insoluble in Carbon tetrachloride                                    |
| Miscibility:                     | Miscible with alcohol
| Miscible with Benzene            |                                                                                   |
| Miscible with Carbon tetrachloride |                                                                                   |
| Miscible with Glycerol           |                                                                                   |

### 10. STABILITY AND REACTIVITY

**Product code:** I-147

**Product name:** IODINE MONOCHLORIDE, SOLUTION
Reacts violently with strong oxidizing agents, acetaldehyde, and acetic anhydride. It can react with metals, strong bases, amines, carbonates, hydroxides, phosphates, many oxides, cyanides, sulfides, chromic acid, nitric acid, hydrogen peroxide, carbonates, ammonium nitrate, ammonium thiosulfate, chlorine trifluoride, chlorosulfonic acid, perchloric acid, permanganates, xylene, oleum, potassium hydroxide, sodium hydroxide, phosphorus isocyanate, ethylenediamine, ethylene imine. Acetic acid vapors may form explosive mixtures with air. Reactions between acetic acid and the following materials are potentially explosive: 5-azidotetrazole, bromine pentafluoride, chromium trioxide, hydrogen peroxide, potassium permanganate, sodium peroxide, and phosphorus trichloride. Dilute acetic acid and dilute hydrogen can undergo an exothermic reaction if heated, forming peracetic acid which is explosive at 110 degrees C. Reaction between chlorine trifluoride and acetic acid is very violent, sometimes explosive.

**Chemical stability**

**Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials.

**Incompatible Materials:**
- Oxidizing agents
- Reducing agents
- Metals
- Bases
- Acids

**Hazardous decomposition products:** Carbon oxides.

**Other Information**

**Corrosivity:**
- Highly corrosive in the presence of stainless steel (304)
- Slightly corrosive in presence of aluminum
- Non-corrosive in presence of stainless steel (316)
- Moderate corrosive effect on bronze

**Special Remarks on Corrosivity:** No corrosion data on brass

### 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Principal Routes of Exposure:**
Skin. Ingestion. Inhalation. Eyes.

**Acute Toxicity**

**Component Information**

<table>
<thead>
<tr>
<th>Acetic Acid, glacial</th>
<th>CAS-No.</th>
<th>64-19-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50/oral/rat = 3310 mg/kg Oral LD50 Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50/oral/mouse = 3530 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rabbit = 1060 mg/kg Dermal LD50 Rabbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rat = No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/rat = 11.4 mg/L Inhalation LC50 Rat 4 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/mouse = 5620 ppm 1 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other LD50 or LC50 information = No information available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Iodine Monochloride</th>
<th>CAS-No.</th>
<th>7790-99-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50/oral/rat = 50 mg/kg Oral LDLo Rat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Product code:** I-147  **Product name:** IODINE MONOCHLORIDE, SOLUTION
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = 500 mg/kg Dermal LDLo Rat
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat = VALUE- Acute Tox Oral = No information available
LD50/oral/mouse = Value - Acute Tox Oral = No information available
LD50/dermal/rabbit VALUE-Acute Tox Dermal = No information available
LD50/dermal/rat VALUE - Acute Tox Dermal = No information available
LC50/inhalation/rat VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available
LC50/Inhalation/mouse VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skın Contact: Corrosive. Severe skin irritation. Causes skin burns. Can cause burning pain, inflammation and blisters. Harmful in contact with skin. May be absorbed through the skin in harmful amounts.


Inhalation Harmful by inhalation. Causes severe respiratory tract irritation. May cause chemical pneumonitis, bronchitis, and pulmonary edema. Severe exposure may result in lung tissue damage and corrosion (ulceration) of the mucous membranes. Inhalation may also cause rhinitis, sneezing, coughing, oppressive feeling in the chest or chest pain, dyspnea, wheezing, tachypnea, cyanosis, salivation, nausea, giddiness, muscular weakness.

Ingestion Causes digestive (gastrointestinal) tract irritation. Causes digestive or gastrointestinal tract burns. Symptoms include burning and pain of the mouth, throat, and abdomen, coughing, ulceration, bleeding, nausea, abdominal spasms, vomiting, hematemesis, diarrhea. May cause perforation of the digestive tract. May cause permanent damage of the esophagus and digestive tract. May Also affect the liver (impaired liver function), behavior (convulsions, giddines, muscular weakness), and the urinary system - kidneys (Hematuria, Albuminuria, Nephrosis, acute renal failure, acute tubular necrosis). May also cause dyspnea or asphyxia. May also lead to shock, coma and death. May cause thirst.
Aspiration hazard: No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

Chronic Toxicity: Chronic exposure via ingestion may cause blackening or erosion of the teeth and jaw necrosis, pharyngitis, and gastritis. It may also behave (similar to acute ingestion), and metabolism (weight loss).

Chronic exposure via inhalation may cause asthma and/or bronchitis with cough, wheezing, phlegm, and/or shortness of breath. Some researchers consider acetic acid capable of causing a syndrome known as "reactive airways dysfunction," or RADS. This syndrome resembles bronchial asthma, but differs in that exposure to small doses does not cause a reaction a few weeks after onset. It may also affect the blood (decreased leukocyte count), and urinary system (kidneys).

Repeated or prolonged skin contact may cause thickening, blackening, and cracking of the skin.

Sensitization: No information available.

Mutagenic Effects: Mutations in microorganisms

Experiments with bacteria and/or yeast have shown mutagenic effects

Cytogenic analysis - hamster ovary

Sister Chromatid Exchange (human lymphocyte)

Carcinogenic effects: Not considered carcinogenic.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td></td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
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<td></td>
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<td>Not listed</td>
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<td>Not listed</td>
</tr>
</tbody>
</table>

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity: No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity:

STOT - single exposure: No information available.

STOT - repeated exposure: No information available.


12. ECOLOGICAL INFORMATION

Ecotoxicity:

Ecotoxicity effects: Aquatic environment.

Acetic Acid, glacial - 64-19-7

Product code: I-147

Product name: IODINE MONOCHLORIDE, SOLUTION
Freshwater Fish Species Data: 79 mg/L LC50 Pimephales promelas 96 h static 1 75 mg/L LC50 Lepomis macrochirus 96 h static 1

Water Flea Data: 65 mg/L EC50 Daphnia magna 48 h 47 mg/L EC50 Daphnia magna 24 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
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<td>Acetic Acid, glacial</td>
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<td>None</td>
<td>None</td>
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<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

UN-No: UN2789
Proper Shipping Name: Acetic acid solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Emergency Response Guide Number: 132
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Symbol(s): No information available
Description: UN2789, ACETIC ACID, GLACIAL, 8 (3), II

TDG (Canada)

UN-No: UN2789
Proper Shipping Name: Acetic acid solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant: No Information available
Description: UN2789, ACETIC ACID, GLACIAL, 8 (3), II

ADR

UN-No: UN2789
Proper Shipping Name: Acetic acid solution
Hazard Class: 8
Packing Group: II
Subsidiary Risk: No information available
Description: UN2789, ACETIC ACID, GLACIAL, 8 (3), II

Product code: I-147
Product name: IODINE MONOCHLORIDE, SOLUTION
IMO / IMDG
UN-No: UN2789
Proper Shipping Name: Acetic acid solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant: No information available
EMS: F-E
Description: UN2789, ACETIC ACID, GLACIAL, 8 (3), II

RID
UN-No: UN2789
Proper Shipping Name: Acetic acid solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Description: UN2789, ACETIC ACID, GLACIAL, 8 (3), II

ICAO
UN-No: UN2789
Proper Shipping Name: Acetic acid solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Description: UN2789, ACETIC ACID, GLACIAL, 8 (3), II

IATA
UN-No: UN2789
Proper Shipping Name: Acetic acid solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 8F
Special Provisions: No information available
Description: UN2789, ACETIC ACID, GLACIAL, 8 (3), II

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS (2)-688</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>Present</td>
<td>Present KE-00013</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>Present 200-580-7</td>
</tr>
</tbody>
</table>

U.S. Regulations

Acetic Acid, glacial

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 0004
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List: Present
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
5000 lb RQ
100 lb RQ

Product code: I-147
Product name: IODINE MONOCHLORIDE, SOLUTION
Louisiana Reportable Quantity List for Pollutants: 5000lb final RQ
2270kg final RQ
California Directors List of Hazardous Substances: Present
FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1005
FDA - 21 CFR - Total Food Additives 133.123, 133.124, 133.169, 133.173, 133.178, 133.179, 172.814, 173.370, 184.1005, 73.85
Iodine Monochloride
New Jersey RTK Hazardous Substance List: 1027


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
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</table>

CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
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</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>5000 lb final RQ 2270 kg final RQ</td>
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<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</table>

U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
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<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Canada

WHIMIS 2015 - GHS Classifications

WHIMIS 2015 Hazard Classification Information:

Component
Acetic Acid, glacial
64-19-7 (98.32)

WHIMIS 2015 Hazard Classification
Flammable liquids - Category 3: H226 Flammable liquid and vapour.; Corrosive to Metals - Category 1: H290 May be corrosive to metals. (potentially corrosive to metals; the supplier should be contacted for more information); Acute toxicity - Inhalation - Category 4: H332 Harmful if inhaled.; Health Hazard Not Otherwise Classified - Category 1: Causes severe damage to the respiratory tract; Skin corrosion/irritation - Category 1: H314 Causes severe skin burns and eye damage.; Serious Eye Damage/Eye Irritation - Category 1: H318 Causes serious eye damage.

Canada Hazardous Products Regulation
This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHIMIS 1988 Hazard Class
B3 Combustible liquid

Product code: I-147

Product name: IODINE MONOCHLORIDE, SOLUTION
E Corrosive material

**Components**

Acetic Acid, glacial

**WHMIS 1988**

B3,E including 10-80% [Available data does not allow a precise evaluation of the threshold concentration from which solutions meet the B3 criterion], >80%

D2B 3-10%

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

### Components

<table>
<thead>
<tr>
<th>WHMIS Ingredient Disclosure List -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
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<tr>
<td>Iodine Monochloride</td>
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</table>

<table>
<thead>
<tr>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Acetic Acid, glacial</td>
</tr>
<tr>
<td>Iodine Monochloride</td>
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</table>

### Components

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CEPA Schedule I - Toxic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>Not listed</td>
</tr>
<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>Not listed</td>
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### Components

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
</tr>
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<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
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<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td>Not listed</td>
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### EU Classification

**EU GHS - SV - CLP 1272/2008**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>EU GHS - SV - CLP (1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>Flammable liquids - Flam. Liq. 3: H226 Flammable liquid and vapour.; Skin corrosion/irritation - Skin Corr. 1A: H314 Causes severe skin burns and eye damage. (C &gt;= 90 %)607-002-00-6 Skin corrosion/irritation - Skin Corr. 1A: H314 Causes severe skin burns and eye damage. (C &gt;= 90 %); Skin corrosion/irritation - Skin Corr. 1B: H314 Causes severe skin burns and eye damage. (25 % &lt;= C &lt;90 %); Skin corrosion/irritation - Skin Irrit. 2: H315 Causes skin irritation. (10 % &lt;= C &lt;25 %); Serious Eye Damage/Eye Irritation - Eye Irrit. 2: H319 Causes serious eye irritation. (10 % &lt;= C &lt;25 %)607-002-00-6</td>
</tr>
<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td></td>
</tr>
</tbody>
</table>

**EU - CLP (1272/2008)**

R-phrase(s)

R35 - Causes severe burns.

R10 - Flammable.

**S -phrase(s)**

**Product code:** I-147  
**Product name:** IODINE MONOCHLORIDE, SOLUTION
S23 - Do not breathe gas/fumes/vapor/spray.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 1/2 - Keep locked up and out of the reach of children.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
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<tbody>
<tr>
<td>Acetic Acid, glacial</td>
<td>64-19-7</td>
<td>R10 C; R35</td>
<td>10%&lt;=C&lt;25% Xi; R36/38</td>
<td>S: (1/2)-23-26-45</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>90%&lt;=C&lt;90% C; R35</td>
<td></td>
</tr>
<tr>
<td>Iodine Monochloride</td>
<td>7790-99-0</td>
<td></td>
<td>No information</td>
<td></td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
C - Corrosive.
Flammable

C

16. OTHER INFORMATION

Preparation Date: 4/19/2018
Revision Date: 4/19/2018
Prepared by: Sonia Owen

Disclaimer:
All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet