1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Iodine, Resublimed, USP

Synonyms/Generic Names: None

Product Number: 2775

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Target organ effect, Toxic by inhalation, Harmful by skin absorption, Skin sensitizer, Corrosive

Target Organs: Thyroid, Kidneys, Endocrine system, Skin, Eyes, Reproductive system, Central nervous system

Signal Word: Danger

Pictograms:

GHS Classification:

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, Inhalation</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute toxicity, Dermal</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion</td>
<td>Category 1C</td>
</tr>
<tr>
<td>Serious eye damage</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 1</td>
</tr>
</tbody>
</table>
GHS Label Elements, including precautionary statements:

**Hazard Statements:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>H312+H332</td>
<td>Harmful in contact with skin or if inhaled.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
</tbody>
</table>

**Precautionary Statements:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>P273</td>
<td>Avoid release to the environment.</td>
</tr>
<tr>
<td>P280</td>
<td>Wear protective gloves/ protective clothing/ eye protection/ face protection.</td>
</tr>
<tr>
<td>P305+P351+P338</td>
<td>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
<tr>
<td>P310</td>
<td>Immediately call a POISON CENTER or doctor/ physician.</td>
</tr>
</tbody>
</table>

**Potential Health Effects**

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Causes eye burns.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Toxic if inhaled, Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.</td>
</tr>
<tr>
<td>Skin</td>
<td>Causes skin burns.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
</tbody>
</table>

**NFPA Ratings**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3</td>
</tr>
<tr>
<td>Flammability</td>
<td>0</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Specific hazard</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**HMIS Ratings**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3</td>
</tr>
<tr>
<td>Fire</td>
<td>0</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Personal</td>
<td>J</td>
</tr>
</tbody>
</table>

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight %</th>
<th>CAS #</th>
<th>EINECS# / ELINCS#</th>
<th>Formula</th>
<th>Molecular Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iodine</td>
<td>100</td>
<td>7553-56-3</td>
<td>231-422-4</td>
<td>I₂</td>
<td>253.81 g/mol</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

<table>
<thead>
<tr>
<th>Route</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>In case of eye contact, rinse with plenty of water and seek medical attention immediately.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.</td>
</tr>
<tr>
<td>Skin</td>
<td>Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.</td>
</tr>
</tbody>
</table>

5. FIRE-FIGHTING MEASURES

| Suitable (and unsuitable) extinguishing media | Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water. |
| Special protective equipment and precautions for firefighters | Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. |
| Specific hazards arising from the chemical | Emits toxic fumes (hydrogen iodide) under fire conditions. (See also Stability and Reactivity section). |

Revised on 9/4/2012
6. ACCIDENTAL RELEASE MEASURES

| Personal precautions, protective equipment and emergency procedures | See section 8 for recommendations on the use of personal protective equipment. |
| Environmental precautions | Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements. |
| Methods and materials for containment and cleaning up | Pick up and arrange disposal without creating dust. Sweep up and place in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations. |

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts.

Conditions for safe storage, including any incompatibilities
Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Limits</th>
<th>Basis</th>
<th>Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iodine</td>
<td>0.01 ppm</td>
<td>TLV</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td>0.1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.1 ppm</td>
<td>STEL</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td>1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.1 ppm</td>
<td>STEL</td>
<td>OSHA</td>
</tr>
<tr>
<td></td>
<td>1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.1 ppm</td>
<td>STEL</td>
<td>NIOSH</td>
</tr>
<tr>
<td></td>
<td>1 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Wear chemical safety glasses or goggles.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.</td>
</tr>
<tr>
<td>Skin</td>
<td>Wear nitrile or rubber gloves, apron or lab coat.</td>
</tr>
<tr>
<td>Other</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Revised on 9/4/2012
Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance (physical state, color, etc.)</td>
<td>Dark purple solid with metallic luster.</td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH</td>
<td>5.4</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>113.7°C (236.7°F)</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>184.4°C (363.9°F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not Flammable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not Flammable</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limit</td>
<td>Not Explosive</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.41 hPa (0.31 mmHg) at 25 °C (77 °F)</td>
</tr>
<tr>
<td>Vapor density</td>
<td>8.76 (Air = 1.0)</td>
</tr>
<tr>
<td>Density</td>
<td>4.93 (Water = 1)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 2.49</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not Available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable</td>
</tr>
<tr>
<td>Possibility of Hazardous Reactions</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Heat, direct sunlight.</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>Rubber, plastics, iron and iron salts., sulfur 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, ammonia, acetaldehyde, acetylene, acetaldehyde.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Hydrogen iodide.</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Not Available</td>
</tr>
<tr>
<td>Eyes</td>
<td>Not Available</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Not Available</td>
</tr>
<tr>
<td>Ingestion</td>
<td>LD50 Oral - rat - 14,000 mg/kg</td>
</tr>
</tbody>
</table>
Carcinogenicity

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

Signs & Symptoms of Exposure

| Skin | Irritation, redness, itchiness, rash. |
| Eyes | Irritation, redness, watering eyes, itchiness. |
| Respiratory | Irritation, coughing, wheezing, runny nose. |
| Ingestion | Irritation, nausea, vomiting, diarrhea. |

Chronic Toxicity

| Teratogenicity | Not Available |
| Mutagenicity | Not Available |
| Embryotoxicity | Not Available |
| Specific Target Organ Toxicity | Not Available |
| Reproductive Toxicity | May cause adverse reproductive effects. |
| Respiratory/Skin Sensitization | May cause allergic skin reaction. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

| Aquatic Vertebrate | LC50 - Oncorhynchus mykiss (rainbow trout) - 1.7 mg/l - 96.0 h |
| Aquatic Invertebrate | EC50 - Daphnia magna (Water flea) - 0.2 mg/l - 48 h |
| Terrestrial | Not Available |

| Persistence and Degradability | Not Available |
| Bioaccumulative Potential | Not Available |
| Mobility in Soil | Not Available |
| PBT and vPvB Assessment | Not Available |
| Other Adverse Effects | Very toxic to aquatic life. |

13. DISPOSAL CONSIDERATIONS

| Waste Residues | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container. |
| Product Containers | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container. |

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.
14. TRANSPORTATION INFORMATION

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>US DOT</td>
<td>UN1759. Corrosive solids, n.o.s., (iodine), 8, (6.1), pg III</td>
</tr>
<tr>
<td>TDG</td>
<td>UN1759, CORROSIVE SOLIDS, N.O.S., (IODINE), 8, (6.1), pg III</td>
</tr>
<tr>
<td>IMDG</td>
<td>UN1759, CORROSIVE SOLIDS, N.O.S., (IODINE), 8, (6.1), pg III</td>
</tr>
<tr>
<td>Marine Pollutant</td>
<td>No</td>
</tr>
<tr>
<td>IATA/ICAO</td>
<td>UN1759, Corrosive solids, n.o.s., (iodine), 8, (6.1), pg III</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA Inventory Status</td>
<td>All ingredients are listed on the TSCA inventory.</td>
</tr>
<tr>
<td>DSCL (EEC)</td>
<td>All ingredients are listed on the DSCL inventory.</td>
</tr>
<tr>
<td>California Proposition 65</td>
<td>Not Listed</td>
</tr>
<tr>
<td>SARA 302</td>
<td>Not Listed</td>
</tr>
<tr>
<td>SARA 304</td>
<td>Not Listed</td>
</tr>
<tr>
<td>SARA 311</td>
<td>Acute Health Hazard, Chronic Health Hazard</td>
</tr>
<tr>
<td>SARA 312</td>
<td>Acute Health Hazard, Chronic Health Hazard</td>
</tr>
<tr>
<td>SARA 313</td>
<td>Not Listed</td>
</tr>
<tr>
<td>WHMIS Canada</td>
<td>CLASS D-2A: Material causing other toxic effects (VERY TOXIC).</td>
</tr>
<tr>
<td></td>
<td>CLASS E: Corrosive solid.</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision</td>
<td>Date</td>
</tr>
<tr>
<td>Revision 1</td>
<td>07-24-2012</td>
</tr>
</tbody>
</table>

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