1. Product and Company Identification
   
   **Product Name:** Lugol’s Solution
   **Product Use:** Contrast medium
   **Restrictions:** Hypersensitivity to iodine
   **Contact:**
   Premier Dental Products Company
   1710 Romano Drive
   Plymouth Meeting, PA 19462
   Phone: 610-239-6000  Fax: 610-239-6171
   Emergency Phone: 610-239-6000

2. Hazard(s) Identification

   2.1. Classification of the substance or mixture
   
   GHS-US classification
   Skin Irrit. 2
   Eye Irrit. 2A
   Skin Sens. 1
   Aquatic Acute 2

   2.2. Label elements
   
   GHS-US labeling
   Hazard pictograms (GHS-US)

   !

   **Signal word (GHS-US)**: Warning
   **Hazard statement (GHS-US)**: Causes skin irritation
   May cause serious skin reaction
   Causes serious eye irritation
   Toxic to aquatic life

   Precautionary statements (GHS-US) Avoid breathing mist, vapors, spray.
   Wash exposed skin thoroughly after handling.
   Contaminated work clothing should be allowed out of the workplace.
   Avoid release to the environment.
   Wear protective gloves, eye protection.
   If on skin: Wash with plenty of soap and water.
   If in eyes: Rinse cautiously with water for several minutes.
   Remove contact lenses, if present and easy to do. Continue rinsing.
   If skin irritation persists: Get medical advice/attention.
   If eye irritation persists: Get medical advice/attention.
   Take off contaminated clothing and wash it before reuse.
   Dispose of contents/container to comply with local, state and federal regulations.

2.3. Other hazards

   Other hazards not contributing to the classification: None

2.4. Unknown acute toxicity (GHS-US) No data available
3. Composition / Information on Ingredients

3.1. Substance
Not applicable
Full text of H-phase: see section 16

3.2. Mixture

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Description</th>
<th>% Range</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 7732-18-5</td>
<td>Water</td>
<td>85%</td>
<td>Not classified</td>
</tr>
<tr>
<td>CAS: 7681-11-0</td>
<td>Potassium Iodide</td>
<td>10%</td>
<td>Eye Irrit. 2B, H320</td>
</tr>
<tr>
<td>CAS: 7553-56-2</td>
<td>Iodine</td>
<td>5%</td>
<td>Acute Tox. 3 (Dermal)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4 (Inhalation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute</td>
</tr>
</tbody>
</table>

4. First Aid Information

4.1. Description of the first-aid measure

First-aid measures general
Never give anything by mouth to an unconscious person. If person feels unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation
Assure fresh air breathing. Allow the victim to rest.

First-aid measures after skin contact
Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion
Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation
May cause an allergic skin reaction

Symptoms/injuries after skin contact
Causes skin irritation

Symptoms/injuries after eye contact
Causes serious eye irritation

4.3. Indication of any immediate medical attention and special treatment needed
Obtain medical assistance

5. Fire-Fighting Information

5.1. Extinguishing media

Suitable extinguishing media
Any type

Unsuitable extinguishing media
Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard
Not flammable

Explosion hazard
Not applicable
5.3. Advice for firefighters
Firefighting instructions
Use water spray of fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

Protection during firefighting
Use self-contained breathing apparatus and protective equipment.

6. Accidental Release Information
6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Protective equipment
Safety glasses, medical gloves and lab coat
Emergency procedures
Evacuate unnecessary personnel

6.1.2. For emergency responders
Protective equipment
Equipment cleanup crew with proper protection
Emergency procedures
Ventilate area

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public water. Avoid release to the environment.

6.3. Methods and material for containment and clean up
Methods for cleaning up
Soak up spills with inert solids. Collect spillage. Wash area with water/bleach solution, detergent or silver chloride solution.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

7. Handling and Storage
7.1. Precautions for safe handling
Precautions for safe handling
Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid breathing mist, vapors and spray. Keep out of reach of children.

Hygiene measures
Wash exposed skin thoroughly after handling.

7.2. Conditions for safe storage including any incompatibilities
Storage conditions
Keep only in the original amber glass container in a cool, dry space. Keep container closed when not in use.

Incompatible products
Do not store in aluminum, carbon steel, copper, copper alloys, zinc or nickel containers.

Incompatible products
Sources of ignition and strong sunlight

7.3. Specific end use(s)
No additional information available

8. Exposure Controls / Personal Protection
8.1. Control parameters
Iodine (CAS - 7553-56-2)
USA ACGIH
ACGIH TWA (mg/m³)
0.1 mg/ m³ Inhalable fraction
USA ACGIH  
**ACGIH TWA (ppm)**  
0.01 ppm Inhalable fraction

USA ACGIH  
**ACGIH STEL (mg/ m³)**  
1 mg/ m³

USA ACGIH  
**ACGIH STEL (ppm)**  
0.1 ppm

USA OSHA  
**OSHA PEL (Ceiling) (mg/ m³)**  
1 mg/ m³

USA OSHA  
**OSHA PEL (Ceiling) (ppm)**  
0.1 ppm

**Potassium Iodine (CAS 7681-11-0)**

USA ACGIH  
**ACGIH TWA (ppm)**  
0.01 ppm Inhalable fraction

---

### 8.2. Exposure controls

**Appropriate engineering controls**
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.

**Personal protective equipment**
Avoid all unnecessary exposure.

**Hand protection**
Wear protective gloves.

**Eye protection**
Goggles or safety glasses

**Skin and body protection**
General work/lab wear

**Respiratory protection**
Wear appropriate mask.

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### 9. Physical and Chemical Properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Dark brown or purple</td>
</tr>
<tr>
<td>Boiling point</td>
<td>100°C</td>
</tr>
<tr>
<td>Specific gravity (H₂O=1)</td>
<td>N/D</td>
</tr>
<tr>
<td>Vapor Pressure (mmHg)</td>
<td>Equal to water</td>
</tr>
<tr>
<td>Percent volatile by volume (%)</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor density (air-1)</td>
<td>1</td>
</tr>
<tr>
<td>Evaporation Rate (nBuOAc-1)</td>
<td>10%</td>
</tr>
<tr>
<td>Order threshold</td>
<td>N/A</td>
</tr>
<tr>
<td>Freezing point</td>
<td>-15°C or lower</td>
</tr>
<tr>
<td>Coefficient of water/oil distribution</td>
<td>N/A</td>
</tr>
<tr>
<td>pH (1% solution)</td>
<td>“neutral”</td>
</tr>
<tr>
<td>Scooped density</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Completely miscible</td>
</tr>
<tr>
<td>Odor</td>
<td>Acidic iodine (pungent) odor</td>
</tr>
<tr>
<td>Reserve alkalinity</td>
<td>N/D</td>
</tr>
</tbody>
</table>

---

### 10. Stability and Reactivity

**Stability:**
This product is stable under ordinary use and storage conditions.

**Possible Hazardous Reactions/Conditions:**
None known

**Conditions to Avoid:**
Avoid strong oxidizing agents or any metal.

**Incompatibility (Materials to Avoid):**
Strong oxidizing agents and all fabrics.

**Hazardous Decomposition/By Products:**
None established

**Other Recommendations:**
Read and follow all directions for use.

---

### 11. Toxicological Information

#### 11.1. Information on toxicological effects

**Acute toxicity**
Not classified

**Iodine, Lugol’s, 5% w/v**

**LD50 oral rate**
4400 mg/kg

**Iodine (CAS 7553-56-2)**

**LD50 oral rate**
14000 mg/kg

**LD50 dermal rate**
220 mg/kg

ATE (dermal)
1100,000 mg/kg bodyweight

ATE (dust, mist)
1.500 mg/I/4h
Potassium Iodine (CAS 7681-11-0)
LD50 oral rate 1000 mg/kg

Water (CAS 7732-18-5)
LD50 oral rate ≥ 90000 mg/kg

Skin corrosion/irritation
Serious eye damage/irritation
Respiratory of skin sensitization
Carcinogenicity
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Not classified

12. Ecological Information
12.1. Toxicity
Ecology – water Toxic to aquatic life
Iodine, Lugol’s, 5% w/v
EC50 Daphnia 1 4 mg/l

Iodine (CAS 7553-56-2)
LC50 fishes 1 1.7 mg/l
EC50 Daphnia 1 0.2 mg/l

Potassium Iodine (CAS 7681-11-0)
LC50 fishes 1 2190 mg/l 96 h
EC50 Daphnia 1 2.7 mg/l 24 h

12.2. Persistence and degradability
Iodine, Lugol’s, 5% w/v
Persistence and degradability Not established

Iodine (CAS 7553-56-2)
Persistence and degradability Not established

Potassium Iodine (CAS 7681-11-0)
Persistence and degradability Not established

Water (CAS 7732-18-5)
Persistence and degradability Not established

12.3. Bioaccumulative potential
Iodine, Lugol’s, 5% w/v
Bioaccumulative potential Not established

Iodine (CAS 7553-56-2)
Log Pow 2.49
Bioaccumulative potential Not established
Potassium Iodine (CAS 7681-11-0)
Bioaccumulative potential Not established

Water (CAS 7732-18-5)
Bioaccumulative potential Not established

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Other information Avoid release to the environment

13. Disposal Considerations
13.1. Waste disposal methods
Waste disposal recommendation Wash area with water and drain into disposal system. Dispose of contents/containers to comply with all federal, state/provincial and local regulations.

Ecology – waste materials Avoid release to the environment.

14. Transport Information
DOT: Non-hazardous Observe normal precautions for transporting liquid-filled glass containers.

All ingredients are listed on the TSCA list.

Product does not contain any chemical required to be reported under SARA 313.

ADR
Transport document description

Transport by sea
No additional information available

Air transport
No additional information available

15. Regulatory Information
15.1. US Federal regulations

Iodine (CAS 7553-56-2)
Listed on the United States TSCA inventory

SARA Section 311/312 Hazard Classes Immediate (acute) health hazard
Delayed (chronic) health hazard

Potassium Iodine (CAS 7681-11-0)
Listed on the United States TSCA inventory
SARA Section 311/312 Hazard Classes Immediate (acute) health hazard
Delayed (chronic) health hazard

Water (CAS 7732-18-5)
Listed on the United States TSCA inventory
15.2. US State regulations
No available information available

16. Other Information –
Premier’s revision date: 09-17-2014
Revision Number: 5
Other Information None

NFPA health hazard 1 - Exposure would cause irritation with only minor residual injury.
Classification system: NFPA ratings (scale 0-4)

NFPA fire hazard 0 – Materials that will not burn
NFPA reactivity 0 – Normally stable even under fire exposure conditions and are not reactive with water.

Health = 2
Fire = 0
Reactivity = 0

HMIS III Rating

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health = 2</td>
<td>Health = 2</td>
<td>Reactivity 0</td>
</tr>
<tr>
<td>Flammability</td>
<td>Fire = 0</td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>Reactivity = 0</td>
<td></td>
</tr>
<tr>
<td>Personal Protection</td>
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</tbody>
</table>

HMIS ratings (scale 0 – 4)

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health 2</td>
<td>Fire 0</td>
<td>Reactivity 0</td>
</tr>
</tbody>
</table>

Revision Summary Replaces Rev 4 issued on September 28, 2014. Complies with GHS OSHA requirements.

Supplier’s date: 07-22-2014

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091446 Rev5