SECTION 1: Identification

1.1. Identification
Product name: Alloy Repair Rods

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Manufacturing

1.3. Details of the supplier of the safety data sheet
Zaclon LLC
2981 Independence Road
Cleveland, OH 44115
T 216-271-1569 or 800-356-7327

1.4. Emergency telephone number
Emergency number: Chemtrec 1 800 424 9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
Classification (GHS-US)
Aquatic Acute 1 H400 - Very toxic to aquatic life
Full text of H-phrases: see section 16

2.2. Label elements
GHS-US labeling
Hazard pictograms (GHS-US): GHS09

Signal word (GHS-US): Warning
Hazard statements (GHS-US): H400 - Very toxic to aquatic life
Precautionary statements (GHS-US): P273 - Avoid release to the environment
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc</td>
<td>(CAS No) 7440-66-6</td>
<td>50 - 55</td>
<td>Not classified</td>
</tr>
<tr>
<td>Tin</td>
<td>(CAS No) 7440-31-5</td>
<td>45 - 50</td>
<td>Not classified</td>
</tr>
<tr>
<td>Copper</td>
<td>(CAS No) 7440-50-8</td>
<td>1 - 5</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Remove to fresh air. Support respiration if required - Seek medical attention.
First-aid measures after skin contact: Flush with water immediately - Seek medical attention if necessary.
First-aid measures after eye contact: Flush with plenty of water for at least 15 minutes. Seek medical advice if irritation develops or persists.

First-aid measures after ingestion: DO NOT induce vomiting, drink large amounts of water - seek medical attention. Never give anything by mouth to an unconscious person.

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

Symptoms/injuries after inhalation: May cause nose and throat irritation, headache, dizziness, difficulty breathing, coughing, ingestion, nausea, vomiting, cramps.

Symptoms/injuries after skin contact: Causes skin redness, burning, rash, dryness.

Symptoms/injuries after eye contact: Causes redness, burning, tearing, blurred vision.

Symptoms/injuries after ingestion: May be harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Dry chemical

Unsuitable extinguishing media: None.

5.2. Special hazards arising from the substance or mixture

Fire hazard: None known.

Explosion hazard: High concentrations of dust may be explosive above 1100 F. May release metal and metal oxide fumes.

5.3. Advice for firefighters

Protection during firefighting: Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment: Stop the flow of material, if this is without risk.

Methods for cleaning up: Collect spillage. Dispose of in accordance with relevant local regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Wash thoroughly after use. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a closed corrosive resistant container, with corrosive resistant liner, in cool dry place. Keep out of the reach of children. Read label and SDS prior to use.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH</th>
<th>ACGIH TWA (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tin (7440-31-5)</td>
<td>ACGIH</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Copper (7440-50-8)</td>
<td>ACGIH</td>
<td>0.2 mg/m³ (fume)</td>
</tr>
</tbody>
</table>
Copper (7440-50-8)

<table>
<thead>
<tr>
<th>OSHA</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.1 mg/m³ (fume)</td>
</tr>
<tr>
<td></td>
<td>1 mg/m³ (dust and mist)</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

- **Appropriate engineering controls**: Local exhaust and general ventilation must be adequate to meet exposure standards.
- **Hand protection**: Wear impervious gloves to minimize skin contact.
- **Eye protection**: Goggles or face shield.
- **Skin and body protection**: Wear suitable protective clothing.
- **Respiratory protection**: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

### SECTION 9: Physical and chemical properties

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

- **Physical state**: Solid
- **Appearance**: Rods
- **Color**: Silver/gray
- **Odor**: Odorless
- **Odor threshold**: No data available
- **pH**: No data available
- **Melting point**: 450°F
- **Freezing point**: No data available
- **Boiling point**: 4120°F
- **Flash point**: No data available
- **Relative evaporation rate (butyl acetate=1)**: No data available
- **Flammability (solid, gas)**: No data available
- **Explosion limits**: No data available
- **Explosive properties**: No data available
- **Oxidizing properties**: No data available
- **Vapor pressure**: No data available
- **Specific gravity**: 7.3
- **Relative vapor density at 20 °C**: No data available
- **Solubility**: Insoluble
- **Log Pow**: No data available
- **Auto-ignition temperature**: No data available
- **Decomposition temperature**: No data available
- **Viscosity**: No data available
- **Viscosity, kinematic**: No data available
- **Viscosity, dynamic**: No data available

#### 9.2 Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

No additional information available

#### 10.2 Chemical stability

The product is stable at normal handling and storage conditions.

#### 10.3 Possibility of hazardous reactions

Will not occur.

#### 10.4 Conditions to avoid

None.
10.5. Incompatible materials
Strong bases & acids, oxidizers, sulfides, halogens.

10.6. Hazardous decomposition products
High concentrations of dust may be explosive above 1100 F. May release metal and metal oxide fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>Tin (7440-31-5)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>700 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Not classified
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): Not classified
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: Very toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Zinc (7440-66-6)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>2.16 - 3.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>0.139 - 0.908 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>0.211 - 0.269 mg/l (Exposure time: 96 h - Species: Pimephales promelas [semi-static])</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Copper (7440-50-8)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>&lt; 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on the global warming: No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations: Dispose of contents/container in accordance with local/regional/national/international regulations.
Alloy Repair Rods
Safety Data Sheet

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not regulated for transport

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Zinc (7440-66-6)</th>
<th>Listed on the United States TSCA (Toxic Substances Control Act) inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Subject to reporting requirements of United States SARA Section 313</td>
</tr>
<tr>
<td>SARA Section 313 - Emission Reporting</td>
<td>1.0 % (dust or fume only)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tin (7440-31-5)</th>
<th>Listed on the United States TSCA (Toxic Substances Control Act) inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Subject to reporting requirements of United States SARA Section 313</td>
</tr>
<tr>
<td>SARA Section 313 - Emission Reporting</td>
<td>1.0 %</td>
</tr>
</tbody>
</table>

15.2. US State regulations

<table>
<thead>
<tr>
<th>Zinc (7440-66-6)</th>
<th>U.S. - Massachusetts - Right To Know List</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
<tr>
<td></td>
<td>U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tin (7440-31-5)</th>
<th>U.S. - Massachusetts - Right To Know List</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S. - Minnesota - Hazardous Substance List</td>
</tr>
<tr>
<td></td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
<tr>
<td></td>
<td>U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Copper (7440-50-8)</th>
<th>U.S. - Massachusetts - Right To Know List</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S. - Minnesota - Hazardous Substance List</td>
</tr>
<tr>
<td></td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
<tr>
<td></td>
<td>U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

Full text of H-phrases:

<table>
<thead>
<tr>
<th>Aquatic Acute 1</th>
<th>Hazardous to the aquatic environment - Acute Hazard Category 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
</tbody>
</table>

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.