Safety Data Sheet

Product Identifier: Lead Scrap

Chemical Family: Mixture
Recommended Use: Scrap metal usage.
Restriction on Use: None known.

Manufacturer Information
The David J. Joseph Company
300 Pike Street
Cincinnati, OH 45202

Non-Emergency Contact: Safety Department
Non-Emergency Phone: 513-419-6200
Emergency Contact: DJJ
Emergency Phone: 513-562-1699

**Section 2 - Hazard(s) Identification**

Classification in accordance with 29 CFR 1910.1200.
Product is supplied as scrap metal consisting of lead. This alloy is a non-combustible, non-reactive solid material. Solid material, as supplied, is not hazardous. Processing of this material may produce hazardous vapors, fumes, mists and dusts which are considered hazardous under 29 CFR 1910.1200 (Hazard Communication). Dust, particles or powder generated during processing would have the following classification:

Acute Toxicity (Oral), Category 3
Eye Damage / Irritation, Category 2A
Sensitization - Skin, Category 1
Germ Cell Mutagenicity, Category 2
Carcinogenicity, Category 1A
Toxic to Reproduction, Category 1A

Specific Target Organ Toxicity - Single Exposure, Category 1 (cardiovascular system, circulatory system, digestive system, kidneys, liver, nervous system, respiratory system, skin)
Specific Target Organ Toxicity - Repeated Exposure, Category 1 (cardiovascular system, central nervous system, hematopoietic system, immune system, kidneys, peripheral nervous system, circulatory system, digestive system, liver, respiratory system, skin)
Specific Target Organ Toxicity - Repeated Exposure, Category 2 (respiratory system)

GHS LABEL ELEMENTS
Symbol(s)

Signal Word
DANGER

Hazard Statement(s)
Toxic if swallowed
Causes serious eye irritation
May cause an allergic skin reaction
Suspected of causing genetic defects
May cause cancer
May damage fertility or the unborn child
Causes damage to cardiovascular system, circulatory system, digestive system, kidneys, liver, nervous system, respiratory system, and skin.
Causes damage to cardiovascular system, central nervous system, hematopoietic system, immune system, kidneys, peripheral nerve system, circulatory system, digestive system, liver, respiratory system, and skin through prolonged or repeated exposure.
May cause damage to respiratory system through prolonged or repeated exposure.

Precautionary Statement(s)

Prevention
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust, mist, fumes or vapors. Use only outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Wear appropriate protective gloves/clothing and eye/face protection if contact is possible. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response
IF exposed or concerned: Get medical advice/attention. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. 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. If eye irritation persists: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Storage
Store in a secure area.

Disposal
Dispose of material in accordance with all local, regional, national and international regulations.

Hazard(s) Not Otherwise Classified
Dust may present an explosion hazard if allowed to accumulate in an industrial or manufacturing environment. Coatings and oils applied to the product may enhance flammability.

### Section 3 - Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1</td>
<td>Lead</td>
<td>&gt;59</td>
</tr>
<tr>
<td>7440-31-5</td>
<td>Tin</td>
<td>&lt;25</td>
</tr>
<tr>
<td>7440-36-0</td>
<td>Antimony</td>
<td>&lt;24</td>
</tr>
<tr>
<td>7440-38-2</td>
<td>Arsenic</td>
<td>&lt;4</td>
</tr>
<tr>
<td>7440-50-8</td>
<td>Copper</td>
<td>&gt;3</td>
</tr>
<tr>
<td>7440-22-4</td>
<td>Silver</td>
<td>&lt;2</td>
</tr>
<tr>
<td>7440-43-9</td>
<td>Cadmium</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Component Related Regulatory Information
This product may be regulated, have exposure limits or other information identified as the following: Arsenic, inorganic compounds.

Component Information/Information on Non-Hazardous Components
Processing of this material may produce hazardous vapors, fumes, mists and dusts which are considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
This data sheet is prepared as a guideline for typical uses of scrap materials. The user should be aware that the composition of the scrap can vary based upon the raw materials, processes used, and protective coatings that may have been applied to the original materials. The list of ingredients above are typical ingredients thought to be present in the scrap material. This list includes contaminants that may or may not be present. The percentages given vary from shipment to shipment and may not be entirely accurate for a given shipment.

Protective coatings, including paints, lubricants, corrosion inhibitors, etc., may have been applied to the material before it came under the control of the recycler. These coatings may contain hazardous materials. Typical hazardous materials contained in these coatings include: lead, zinc, chromium, cadmium. Some organic materials may also be present. The supplier (recycler) may have no specific knowledge of the particular contaminant. However, it is anticipated that the hazardous materials present in the coatings would generally represent less than 0.1% of the total material present. The health hazards presented by these contaminants would produce their greatest potential for exposure during processes such as melting, cutting, welding. These processes could generate metal fumes that might produce the health hazards identified in section 2 of this MSDS.

It is suggested that the user protect employees by utilizing engineering controls that reduce exposures to acceptable concentrations. Where engineering controls are not feasible, appropriate personal protective equipment should be utilized.

***Section 4 - First Aid Measures***

**Description of Necessary Measures**

**Inhalation**
If adverse effects occur during processing, remove to uncontaminated area. Get immediate medical attention.

**Skin Contact**
Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use. Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.

**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. In case of mechanical abrasions and cuts, seek medical attention immediately.

**Ingestion**
Due to the physical nature of this material, ingestion is unlikely to occur. If ingestion of a large amount does occur, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Most Important Symptoms/Effects**

**Acute**
Processing by-products: Toxic if swallowed. Symptoms/effects may include eye irritation, allergic reactions, cardiovascular system damage, circulatory system damage, digestive disorders, kidney damage, liver damage, nervous system damage, respiratory system damage, and skin damage.

**Delayed**
Processing by-products: Symptoms/effects may include allergic reactions, mutagenic effects, cancer, hematologic and reproductive effects, cardiovascular system damage, central nervous system damage, immune system disorders, kidney damage, peripheral nerve damage, circulatory system damage, digestive disorders, liver damage, respiratory system damage, and skin damage.

**Indication of immediate Medical Attention and Special Treatment Needed**
Treat symptomatically and supportively.

***Section 5 - Fire Fighting Measures***

**Extinguishing Media**
Media to use includes regular dry chemical and dry sand.
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Unsuitable Extinguishing Media
Molten metal may react violently with water.

Specific Hazards Arising from the Chemical
Coatings and oils applied to the product may enhance flammability. Dust or fine particles may present a flammability hazard if allowed to accumulate in an industrial or manufacturing environment.

Hazardous Combustion Products
This product may release metal oxide fumes by thermal decomposition.

Fire fighting measures
Fight fire with normal precautions from a reasonable distance. Cool materials with water spray until well after the fire is out.

Special Protective Equipment and Precautions for Firefighters
Fire fighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

**Section 6 - Accidental Release Measures**

Personal Precautions, Protective Equipment and Emergency Procedures
If dusts or particulates are generated, eliminate sources of ignition. Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up
Containment of this material should not be necessary. If dusts or particulates are generated, eliminate sources of ignition. Small pieces of this product may be collected with a broom and shovel. Collect spilled material in appropriate container for reuse or disposal.

**Section 7 - Handling and Storage**

Precautions for Safe Handling
Observe good hygiene and safety practices when handling this product. Processing of this material may produce hazardous vapors, fumes, mists, and dusts. Avoid inhaling dusts or fumes produced during product processing. Handle with adequate ventilation during processing. Wash thoroughly after handling.

Condition for Safe Storage, Including any Incompatibilities
Store in a secure area.

Incompatibility
Lead may react with bromine, bromine trifluoride, chlorine, chlorine trifluoride, copper nitrate, sulfur and hydrogen peroxide, ammonium nitrate potassium peroxide, sodium nitride, sodium carbide, zirconium, disodium acetylide, and oxidants.

**Section 8 - Exposure Controls / Personal Protection**

Exposure Limits
Follow all applicable exposure limits. Keep formation of dusts, particulates and fumes to a minimum.
## Component Exposure Limits

### Lead (7439-92-1)

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Limit Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACGIH:</strong></td>
<td>0.05 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>OSHA:</strong></td>
<td>30 µg/m³ Action Level (See 29 CFR 1910.1025); 50 µg/m³ TWA (See 29 CFR 1910.1025)</td>
</tr>
<tr>
<td><strong>OSHA:</strong></td>
<td>50 µg/m³ TWA</td>
</tr>
<tr>
<td><strong>NIOSH:</strong></td>
<td>0.050 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>Alberta:</strong></td>
<td>Designated substance - requires code of practice</td>
</tr>
<tr>
<td><strong>British Columbia:</strong></td>
<td>IARC Category 2B - Possible Human Carcinogen; Adverse reproductive effect</td>
</tr>
<tr>
<td><strong>Manitoba:</strong></td>
<td>0.05 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>New Brunswick:</strong></td>
<td>0.05 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>NW Territories:</strong></td>
<td>0.15 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td>0.45 mg/m³ STEL</td>
</tr>
<tr>
<td><strong>Nova Scotia:</strong></td>
<td>0.05 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>Nunavut:</strong></td>
<td>0.15 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td>0.45 mg/m³ STEL</td>
</tr>
<tr>
<td><strong>Ontario:</strong></td>
<td>0.05 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td>0.05 mg/m³ TWA (designated substances regulation); 0.05 mg/m³ TWA (applies to workplaces to which the designated substances regulation does not apply)</td>
</tr>
<tr>
<td><strong>Quebec:</strong></td>
<td>0.05 mg/m³ TWA EV</td>
</tr>
<tr>
<td><strong>Saskatchewan:</strong></td>
<td>Present</td>
</tr>
<tr>
<td></td>
<td>0.05 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td>0.15 mg/m³ STEL</td>
</tr>
<tr>
<td><strong>Yukon:</strong></td>
<td>0.15 mg/m³ TWA (dust and fume)</td>
</tr>
<tr>
<td></td>
<td>0.45 mg/m³ STEL (dust and fume)</td>
</tr>
</tbody>
</table>

### Tin (7440-31-5)

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Limit Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACGIH:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>NIOSH:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>Alberta:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>British Columbia:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>Manitoba:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>New Brunswick:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>Nova Scotia:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>Ontario:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td><strong>Quebec:</strong></td>
<td>2 mg/m³ TWA EV</td>
</tr>
<tr>
<td><strong>Saskatchewan:</strong></td>
<td>2 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td>4 mg/m³ STEL</td>
</tr>
</tbody>
</table>

### Antimony (7440-36-0)
Safety Data Sheet

Product Identifier: Lead Scrap

ACGIH: 0.5 mg/m³ TWA
OSHA: 0.5 mg/m³ TWA
NIOSH: 0.5 mg/m³ TWA
Alberta: 0.5 mg/m³ TWA

British Columbia: 0.5 mg/m³ TWA
Manitoba: 0.5 mg/m³ TWA
New Brunswick: 0.5 mg/m³ TWA
NW Territories: 0.5 mg/m³ TWA
  1.5 mg/m³ STEL
Nova Scotia: 0.5 mg/m³ TWA
Nunavut: 0.5 mg/m³ TWA
  1.5 mg/m³ STEL
Ontario: 0.5 mg/m³ TWA
Quebec: 0.5 mg/m³ TWAEV

Saskatchewan: 0.5 mg/m³ TWA
  1.5 mg/m³ STEL

Yukon: 0.5 mg/m³ TWA
  0.75 mg/m³ STEL

Arsenic (7440-38-2)

ACGIH: 0.01 mg/m³ TWA
OSHA: 10 µg/m³ TWA (See 29 CFR 1910.1018, except Arsine, as As); 5 µg/m³ Action Level
  (See 29 CFR 1910.1018, except Arsine, as As, related to Arsenic, inorganic compounds)
OSHA: 10 µg/m³ TWA (as As, related to Arsenic, inorganic compounds)
NIOSH: 0.002 mg/m³ Ceiling (15 min)
Alberta: Designated substance - requires code of practice
  0.01 mg/m³ TWA

British Columbia: ACGIH Category A1 - Confirmed Human Carcinogen; IARC Category 1 - Human Carcinogen
  0.01 mg/m³ TWA

Manitoba: 0.01 mg/m³ TWA

New Brunswick: 0.01 mg/m³ TWA

NW Territories: 0.2 mg/m³ TWA
  0.6 mg/m³ STEL

Nova Scotia: 0.01 mg/m³ TWA

Nunavut: 0.2 mg/m³ TWA
  0.6 mg/m³ STEL

Ontario: 0.01 mg/m³ TWA; 0.05 mg/m³ STEL
  0.01 mg/m³ TWA (designated substance regulation); 0.01 mg/m³ TWA (applies to workplaces to which the designated substances regulation does not apply)
  0.05 mg/m³ STEL (designated substances regulation)

Quebec: 0.1 mg/m³ TWAEV

Saskatchewan: Present
  0.01 mg/m³ TWA
  0.03 mg/m³ STEL

Yukon: 0.5 mg/m³ TWA
  0.5 mg/m³ STEL
Copper (7440-50-8)

ACGIH: 0.2 mg/m³ TWA (fume)
OSHA: 0.1 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)
NIOSH: 1 mg/m³ TWA (dust and mist); 0.1 mg/m³ TWA (fume)
Alberta: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)
British Columbia: 1 mg/m³ TWA (dust and mist); 0.2 mg/m³ TWA (fume)
Manitoba: 0.2 mg/m³ TWA (fume)
New Brunswick: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)
NW Territories: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)
0.6 mg/m³ STEL (fume); 2 mg/m³ STEL (dust and mist)
Nova Scotia: 0.2 mg/m³ TWA (fume)
Nunavut: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)
0.6 mg/m³ STEL (fume); 2 mg/m³ STEL (dust and mist)
Ontario: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)
Quebec: 0.2 mg/m³ TWAEV (fume); 1 mg/m³ TWAEV (dust and mist)
Saskatchewan: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)
0.6 mg/m³ STEL (fume); 3 mg/m³ STEL (dust and mist)
Yukon: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)
0.2 mg/m³ STEL (fume); 2 mg/m³ STEL (dust and mist)

Silver (7440-22-4)

ACGIH: 0.1 mg/m³ TWA (dust and fume)
OSHA: 0.01 mg/m³ TWA
NIOSH: 0.01 mg/m³ TWA (dust)
Alberta: 0.1 mg/m³ TWA
British Columbia: 0.01 mg/m³ TWA
0.03 mg/m³ STEL
Manitoba: 0.1 mg/m³ TWA (dust and fume)
New Brunswick: 0.1 mg/m³ TWA
NW Territories: 0.1 mg/m³ TWA
0.3 mg/m³ STEL
Nova Scotia: 0.1 mg/m³ TWA (dust and fume)
Nunavut: 0.1 mg/m³ TWA
0.3 mg/m³ STEL
Ontario: 0.1 mg/m³ TWA (dust and fume)
Quebec: 0.1 mg/m³ TWAEV
Saskatchewan: 0.1 mg/m³ TWA
0.3 mg/m³ STEL
Yukon: 0.01 mg/m³ TWA
0.03 mg/m³ STEL

Cadmium (7440-43-9)
Safety Data Sheet

Product Identifier: Lead Scrap

ACGIH: 0.01 mg/m³ TWA; 0.002 mg/m³ TWA (respirable fraction)
OSHA: 5 µg/m³ TWA (See 29 CFR 1910.1027); 2.5 µg/m³ Action Level
OSHA: 0.1 mg/m³ TWA (fume, applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect); 0.2 mg/m³ TWA (dust, applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect); 5 µg/m³ TWA
0.3 mg/m³ Ceiling (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect, fume); 0.6 mg/m³ Ceiling (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect, dust)

Alberta: Designated substance - requires code of practice
0.01 mg/m³ TWA

British Columbia: ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 1 - Human Carcinogen
0.01 mg/m³ TWA; 0.002 mg/m³ TWA (respirable)

Manitoba: 0.01 mg/m³ TWA; 0.002 mg/m³ TWA (respirable fraction)

New Brunswick: 0.01 mg/m³ TWA (inhalable fraction); 0.002 mg/m³ TWA (respirable fraction)

NW Territories: 0.05 mg/m³ TWA (dust)
0.2 mg/m³ STEL (dust)

Nova Scotia: 0.01 mg/m³ TWA; 0.002 mg/m³ TWA (respirable fraction)

Nunavut: 0.05 mg/m³ TWA (dust)
0.2 mg/m³ STEL (dust)

Ontario: 0.01 mg/m³ TWA; 0.002 mg/m³ TWA (respirable)

Quebec: 0.025 mg/m³ TWAEV

Saskatchewan: Present
0.01 mg/m³ TWA (total); 0.002 mg/m³ TWA (respirable fraction)
0.03 mg/m³ STEL (total); 0.006 mg/m³ STEL (respirable fraction)

Yukon: 0.05 mg/m³ TWA (dust)
0.15 mg/m³ STEL (dust)

Appropriate Engineering Controls
For outdoor applications, special ventilation is not required under normal conditions of use. Under normal conditions of use, no special ventilation equipment is needed. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing.

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection
Eye protection not required under normal conditions. Wear appropriate eye protection if eye contact is possible.

Skin Protection
Wear gloves and other clothing as required to avoid contact.

Respiratory Protection
Consult with a health and safety professional for specific respirators appropriate for your use. When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH approved respiratory protection must be provided. Where concentrations exceed exposure limits or airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate for the material and its components.

General Information
Use good industrial hygiene practices in handling this material. Eye wash fountain and emergency showers are recommended.
**Section 9 - Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Depends upon scrap composition, most often appears as a bluish-gray metal.</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Melting/Freezing Point</td>
<td>600 °F (320 °C)</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>3100 °F (1700 °C)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>OSHA Flammability Class</td>
<td>Non-flammable</td>
</tr>
<tr>
<td>UFL</td>
<td>Not available</td>
</tr>
<tr>
<td>LFL</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility (H2O)</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Auto Ignition</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Section 10 - Chemical Stability & Reactivity Information**

**Reactivity**

No reactivity hazard is expected.

**Chemical Stability**

Stable under normal conditions.

**Possibility of Hazardous reaction**

Will not occur.

**Conditions to Avoid**

Molten metal may react violently with water. Fine particles, dust or fumes may be flammable or explosive.

**Incompatible Materials**

Lead may react with bromine, bromine trifluoride, chlorine, chlorine trifluoride, copper nitrate, sulfur and hydrogen peroxide, ammonium nitrate potassium peroxide, sodium nitride, sodium carbide, zirconium, disodium acetylide, and oxidants.

**Hazardous Decomposition Products**

Decomposition of this product may yield metallic oxides.

**Section 11 - Toxicological Information**

**Acute Dose Effects**

No information available for the product. Operations which supply sufficient energy to the product (i.e. welding, high speed grinding or melting) can release dust or fumes which may make components of the product biologically available. Lead has been found to have toxic effects on both the central and peripheral nervous systems. Acute exposure to lead may cause acute encephalopathy which is accompanied by the symptoms of ataxis, coma, and convulsions. As toxicity progresses, symptoms of peripheral neuropathy can develop, as well as some cases of irreversible kidney damage. Exposure to antimony has been known to cause "antimony spots" on the surface of the skin. Chronic overexposure to antimony may cause gastrointestinal damage, cardiac damage, pneumoconiosis, and obstructive lung disease.

**Component Analysis - LD50/LC50**

- **Tin (7440-31-5)**
  Oral LD50 Rat 700 mg/kg
- **Arsenic (7440-38-2)**
  Oral LD50 Rat 15 mg/kg
- **Silver (7440-22-4)**
  Oral LD50 Rat >2000 mg/kg
- **Cadmium (7440-43-9)**
  Inhalation LC50 Rat 25 mg/m3 30 min; Oral LD50 Rat 1140 mg/kg
Information on Likely Routes of Exposure

**Inhalation**
May cause cancer. Dusts, vapors, and fumes generated during processing may irritate the respiratory system. Overexposure to processing fumes may cause metal fume fever which is an influenza like illness. Symptoms include headache, metallic taste in the mouth, cough, thirst, throat irritation, shortness of breath, fever, sweating and pain in the limbs. Severe acute overexposure or chronic overexposure to dusts or processing fumes may produce more serious toxicities including: siderosis, lung damage, weakness, anorexia, impairment of sleep and vision, personality changes, blood formation effects, nervous and circulatory system damage, kidney damage, and may pose a reproductive hazard.

**Ingestion**
Ingestion is not a likely route of exposure. Toxic if swallowed. May cause gastrointestinal disturbances, abdominal pain, fever, vomiting, and diarrhea. Ingestion of large amounts of product may produce more serious toxicities including: shock, metabolic acidosis, decreased white blood cell count, neurological damage, cardiovascular shock, anemia, liver damage, renal failure, lethargy and coma.

**Skin**
May cause allergic skin reactions. Dust or powder may irritate the skin. This product may produce skin abrasions, lesions, or cuts.

**Eye**
Dust or powder may irritate eye tissue. Rubbing may cause abrasion of cornea.

**Immediate Effects**
Processing by-products: Symptoms/effects may include eye irritation, allergic reactions, cardiovascular system damage, circulatory system damage, digestive disorders, kidney damage, liver damage, nervous system damage, respiratory system damage, and skin damage.

**Delayed Effects**
Processing by-products: Symptoms/effects may include allergic reactions, mutagenic effects, cancer, hematologic and reproductive effects, cardiovascular system damage, central nervous system damage, immune system disorders, kidney damage, peripheral nerve damage, circulatory system damage, digestive disorders, liver damage, respiratory system damage, and skin damage.

**Medical conditions Aggravated by Exposures**
No data available.

**Irritation/Corrosivity Data**
May cause mild skin irritation, eye irritation, and respiratory tract irritation.

**Respiratory Sensitizer**
No information available for the product.

**Dermal Sensitization**
May cause an allergic skin reaction
Carcinogenicity

Component Carcinogenicity

Lead (7439-92-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
OSHA: 30 µg/m³ Action Level (See 29 CFR 1910.1025); 50 µg/m³ TWA (See 29 CFR 1910.1025)
Present (Select Carcinogen)
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 87 [2006] (evaluates inorganic lead compounds as Group 2A and organic lead compounds as Group 3) (Group 2A (Probably carcinogenic to humans))

Arsenic (7440-38-2)

ACGIH: A1 - Confirmed Human Carcinogen
OSHA: 10 µg/m³ TWA (See 29 CFR 1910.1018, except Arsine, as As); 5 µg/m³ Action Level (See 29 CFR 1910.1018, except Arsine, as As, related to Arsenic, inorganic compounds)
Present (Select Carcinogen)
NTP: Known Human Carcinogen (Select Carcinogen)
IARC: Monograph 100C [2012]; Monograph 84 [2004] (in drinking water); Supplement 7 [1987]; Monograph 23 [1980] (Group 1 (Carcinogenic to humans))

Cadmium (7440-43-9)

ACGIH: A2 - Suspected Human Carcinogen
OSHA: 5 µg/m³ TWA (See 29 CFR 1910.1027); 2.5 µg/m³ Action Level
Present (Select Carcinogen)
NTP: Known Human Carcinogen (Select Carcinogen)
IARC: Monograph 100C [2012]; Monograph 58 [1993]; Supplement 7 [1987] (Group 1 (Carcinogenic to humans))

Mutagenicity

Contains component(s) which may cause mutagenic effects. Exposure to lead has been reported to cause chromosome aberrations in humans. Elevated frequencies of chromosome aberrations have been shown in workers exposed to cadmium.

Reproductive Toxicity

Available data characterizes components of this product as reproductive hazards.

Specific Target Organ Toxicity - Single Exposure

cardiovascular system circulatory system digestive system kidneys liver nervous system respiratory system skin

Specific Target Organ Toxicity - Repeated Exposure

cardiovascular system central nervous system hematopoietic system immune system kidneys peripheral nerve system circulatory system digestive system respiratory system skin

Aspiration Hazard

No information available for the product.

Other Toxicological Information

Under normal conditions of handling, the likelihood of inhaling or ingesting amounts necessary for these effects to occur is very small.

 Ecotoxicity

Processing by-products: May be harmful to aquatic life.
## Component Analysis - Ecotoxicity - Aquatic Toxicity

### Lead (7439-92-1)

<table>
<thead>
<tr>
<th>Duration/Test/Species</th>
<th>Concentration/Conditions/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Cyprinus carpio</td>
<td>0.44 mg/L [semi-static]</td>
</tr>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>1.17 mg/L [flow-through]</td>
</tr>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>1.32 mg/L [static]</td>
</tr>
</tbody>
</table>

48 Hr EC50 water flea: 600 µg/L

### Copper (7440-50-8)

<table>
<thead>
<tr>
<th>Duration/Test/Species</th>
<th>Concentration/Conditions/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>0.0068 - 0.0156 mg/L</td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>&lt;0.3 mg/L [static]</td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>0.2 mg/L [flow-through]</td>
</tr>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>0.052 mg/L [flow-through]</td>
</tr>
<tr>
<td>96 Hr LC50 Lepomis macrochirus</td>
<td>1.25 mg/L [static]</td>
</tr>
<tr>
<td>96 Hr LC50 Cyprinus carpio</td>
<td>0.3 mg/L [semi-static]</td>
</tr>
<tr>
<td>96 Hr LC50 Cyprinus carpio</td>
<td>0.8 mg/L [static]</td>
</tr>
<tr>
<td>96 Hr LC50 Poecilia reticulata</td>
<td>0.112 mg/L [flow-through]</td>
</tr>
</tbody>
</table>

72 Hr EC50 Pseudokirchneriella subcapitata: 0.0426 - 0.0535 mg/L [static]; 96 Hr EC50 Pseudokirchneriella subcapitata: 0.031 - 0.054 mg/L [static]

48 Hr EC50 Daphnia magna: 0.03 mg/L [Static]

### Silver (7440-22-4)

<table>
<thead>
<tr>
<th>Duration/Test/Species</th>
<th>Concentration/Conditions/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>0.00155 - 0.00293 mg/L [static]</td>
</tr>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>0.0062 mg/L [flow-through]</td>
</tr>
<tr>
<td>96 Hr LC50 Lepomis macrochirus</td>
<td>0.064 mg/L [static]</td>
</tr>
</tbody>
</table>

48 Hr EC50 Daphnia magna: 0.00024 mg/L [Static]

### Cadmium (7440-43-9)

<table>
<thead>
<tr>
<th>Duration/Test/Species</th>
<th>Concentration/Conditions/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>0.003 mg/L [flow-through]</td>
</tr>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>0.006 mg/L [static]</td>
</tr>
<tr>
<td>96 Hr LC50 Cyprinus carpio</td>
<td>0.002 mg/L</td>
</tr>
<tr>
<td>96 Hr LC50 Cyprinus carpio</td>
<td>4.26 mg/L [semi-static]</td>
</tr>
<tr>
<td>96 Hr LC50 Cyprinus carpio</td>
<td>0.24 mg/L [static]</td>
</tr>
<tr>
<td>96 Hr LC50 Lepomis macrochirus</td>
<td>21.1 mg/L [flow-through]</td>
</tr>
<tr>
<td>96 Hr LC50 Oryzias latipes</td>
<td>0.016 mg/L</td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>0.0004 - 0.003 mg/L</td>
</tr>
</tbody>
</table>

48 Hr EC50 Daphnia magna: 0.0244 mg/L [Static]
**Section 13 - Disposal Considerations**

Disposal Methods

Byproducts and residues from this product may be reprocessed or recycled. Upon disposal, collected dusts and other similar wastes could contain a constituent identified as a hazardous waste. Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

**US EPA Waste Number & Descriptions**

Component Waste Numbers

<table>
<thead>
<tr>
<th>Component</th>
<th>Waste Number</th>
<th>RCRA:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>7439-92-1</td>
<td>5.0 mg/L regulatory level</td>
</tr>
<tr>
<td>Arsenic</td>
<td>7440-38-2</td>
<td>5.0 mg/L regulatory level</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>5.0 mg/L regulatory level</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
<td>1.0 mg/L regulatory level</td>
</tr>
</tbody>
</table>

Disposal of Contaminated Packaging

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

**Section 14 - Transportation Information**

US DOT Information

Certain forms of this material (i.e. powders, borings, shavings, turnings, cuttings, dross, etc.) may be subject to U.S. DOT hazardous material shipping requirements. If the products are shipped in quantities which exceed the reportable quantity (RQ) for individual components, they may also meet the requirements of DOT hazardous materials.

DOT Reportable Quantities

<table>
<thead>
<tr>
<th>Component</th>
<th>RQ Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>10 lbs RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).); 4.54 kg RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).)</td>
</tr>
<tr>
<td>Antimony</td>
<td>5000 lbs RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).); 2270 kg RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).)</td>
</tr>
<tr>
<td>Arsenic</td>
<td>1 lbs RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).); 0.454 kg RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).)</td>
</tr>
<tr>
<td>Copper</td>
<td>5000 lbs RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).); 2270 kg RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).)</td>
</tr>
</tbody>
</table>
Silver (7440-22-4)
1000 lbs RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).); 454 kg RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).)

Cadmium (7440-43-9)
10 lbs RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).); 4.54 kg RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).)

**TDG Information**
Not regulated as a hazardous material.

**Component Marine Pollutants**
This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>DOT regulated severe marine pollutant (powder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td></td>
</tr>
</tbody>
</table>

***Section 15 - Regulatory Information***

**U.S. Federal Regulations**
Processing of this material may produce hazardous vapors, fumes, mists and dusts which are considered hazardous under 29 CFR 1910.1200 (Hazard Communication). The following component analysis applies only to those facilities that are required to report under applicable regulations.
U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Lead (7439-92-1)

**SARA 313**: 0.1 % Supplier notification limit; 0.1 % de minimis concentration (when contained in stainless steel, brass, or bronze)

**CERCLA**: 10 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 4.54 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

Antimony (7440-36-0)

**SARA 313**: 1.0 % de minimis concentration

**CERCLA**: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

Arsenic (7440-38-2)

**SARA 313**: 0.1 % de minimis concentration

**CERCLA**: 1 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 0.454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

Copper (7440-50-8)

**SARA 313**: 1.0 % de minimis concentration

**CERCLA**: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

Silver (7440-22-4)

**SARA 313**: 1.0 % de minimis concentration

**CERCLA**: 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

Cadmium (7440-43-9)

**SARA 313**: 0.1 % de minimis concentration

**CERCLA**: 10 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 4.54 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>DOT regulated severe marine pollutant (powder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>DOT regulated severe marine pollutant (powder)</td>
</tr>
</tbody>
</table>
Safety Data Sheet

Product Identifier: Lead Scrap

SARA 311/312 Hazardous Categories (40 CFR 370 Subparts B and C)
- **Acute Health**: Yes (dust/fumes)
- **Chronic Health**: Yes (dust/fumes)
- **Fire**: No
- **Pressure**: No
- **Reactive**: No

U.S. State Regulations
Other state regulations may apply. Check individual state requirements.

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>CA</th>
<th>FL</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>7439-92-1</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Tin</td>
<td>7440-31-5</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Antimony</td>
<td>7440-36-0</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Arsenic</td>
<td>7440-38-2</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
- **WARNING!** This product contains a chemical known to the state of California to cause cancer.
- **WARNING!** This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Canada Regulation
This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Canadian WHMIS Information
WHMIS CLASSIFICATION: D1B, D2A, D2B.

Component Analysis - WHMIS IDL
The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:
- **Lead** (7439-92-1)
  - 0.1%
- **Tin** (7440-31-5)
  - 1%
- **Antimony** (7440-36-0)
  - 1%
- **Arsenic** (7440-38-2)
  - 0.1%
- **Copper** (7440-50-8)
  - 1%
- **Silver** (7440-22-4)
  - 1%
- **Cadmium** (7440-43-9)
  - 0.1%

Additional Regulatory Information
All components are on the U.S. EPA TSCA Inventory List.
Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>TSCA</th>
<th>CAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>7439-92-1</td>
<td>Yes</td>
<td>DSL</td>
</tr>
<tr>
<td>Tin</td>
<td>7440-51-5</td>
<td>Yes</td>
<td>DSL</td>
</tr>
<tr>
<td>Antimony</td>
<td>7440-36-0</td>
<td>Yes</td>
<td>DSL</td>
</tr>
<tr>
<td>Arsenic</td>
<td>7440-38-2</td>
<td>Yes</td>
<td>DSL</td>
</tr>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>Yes</td>
<td>DSL</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>Yes</td>
<td>DSL</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
<td>Yes</td>
<td>DSL</td>
</tr>
</tbody>
</table>

***Section 16 - Other Information***

Summary of Changes
Updated: 5/12/2015

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Key/Legend
EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; TLV = Threshold Limit Value; NFPA = National Fire Protection Association; HMIS = High Efficiency Particulate Air; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act.

Other Information
Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

MSDS History:
Revision 2/Regulatory Update: 7/19/2002
Revision 3/Regulatory Update: 10/6/2005
Revision 4/Regulatory Update: 8/7/2008
Revision 5/Regulatory Update: 1/26/2010
Revision 6/Regulatory Update: 11/7/2011

End of Sheet NFE-0105