This product consists of a base metal alloy coated with another metal. Attached are Safety Data Sheets (SDS) for the following metal products:

**Base Metal – >99% - Brass**  
**Coating – <1% - Tin Alloy**

**EMERGENCY PHONE: 1-618-258-5167**

This Safety Data Sheet (SDS) KIT HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200.

THE INFORMATION IN THE ENCLOSED SDSs SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UPTO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF AN SDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER BELOW TO MAKE CERTAIN THAT THE SDS IS CURRENT.

SDS Control Group  
Wieland NA RA  
305 Lewis and Clark Blvd  
East Alton, IL 62024-1197  
Phone Number: (618) 258-5654  
www.wieland.com
2. HAZARD IDENTIFICATION

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Health hazards associated with this product only apply in a fume or dust form.

Classification of the substance or mixture (Fume or Dust)

OSHA HCS 2012  
Flammability – 0  
Health – 1  
Physical – 0

Label Elements

Hazard Statements
Causes skin irritation – H315
May cause respiratory irritation – H335

Precautionary statements
Avoid breathing dust or fumes – P261

Prevention
Avoid breathing dust or fumes – P261
Do not get in eyes, on skin, or on clothing – P262

Response
In case of inadequate ventilation wear respiratory protection – P285
EYE CONTACT: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing – P305 + P351 + P338

SKIN CONTACT: Rinse skin with water/shower – P353
Take off contaminated clothing and wash before reuse – P362

INHALATION: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing – P340
Get medical advice/attention – P313

INGESTION: Not a likely route of exposure for finished metal alloy.
If dust is ingested, immediately drink water to dilute.
Get medical advice/attention – P363

NOTE TO PHYSICIANS: There is no specific antidote to the active ingredients in this product; use symptomatic treatment.

Other Hazards


MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Exposure to dust or fume may aggravate an existing dermatitis, asthma, emphysema, or other respiratory disease.

Canada According to WHMIS

Classification of the substance or mixture
WHMIS This product is considered to be a manufactured article and therefore not subject to WHMIS requirements.

Other Information

NFPA Not rated

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Components</th>
<th>% By Weight</th>
<th>EINECS/ ELINCS</th>
<th>EU Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Symbol</td>
</tr>
<tr>
<td>7440-50-8</td>
<td>Copper</td>
<td>59 - 96</td>
<td>231-159-6</td>
<td>None</td>
</tr>
<tr>
<td>7440-66-6</td>
<td>Zinc</td>
<td>4 - 41</td>
<td>231-096-4</td>
<td>None</td>
</tr>
<tr>
<td>7439-92-1</td>
<td>Lead</td>
<td>0.03 – 0.3</td>
<td>231-104-6</td>
<td>None</td>
</tr>
</tbody>
</table>

OSHA REGULATORY STATUS: In solid form, not hazardous. Dust or fume: carcinogen, irritant, lung, blood, kidney, reproductive and developmental toxin, neurotoxin.

In solid form, this material is not hazardous. Dust and fumes are hazardous materials.
4. FIRST AID MEASURES

EYE CONTACT: Immediately flush out fume and dust particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call a physician at once.

SKIN CONTACT: If exposed to dust or fumes, wash skin with plenty of water. Remove contaminated clothing and shoes and launder before reuse. If skin irritation or rash develops and persists or recurs, get medical attention.

INHALATION: If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.

INGESTION: Not a likely route of exposure for finished metal alloy. If dust is ingested, immediately drink water to dilute. Consult a physician if symptoms develop.

NOTE TO PHYSICIANS: There is no specific antidote to the active ingredients in this product; use symptomatic treatment.

5. FIRE FIGHTING MEASURES

PROPERTY VALUE
Explosive No
Combustible No
Flash Point (°C): Not Applicable
Lower Explosive Limit: Not Applicable
Upper Explosive Limit: Not Applicable

PROPERTY VALUE
Flammable No
Pyrophoric No
Burning Rate of Material Not Applicable
Auto Ignition Temp: Not Applicable
Flammability Classification: (Defined by 29 CFR 1910.1200) Not Applicable

UNSUAL FIRE AND EXPLOSION HAZARDS: Dust may cause an ignitable and/or an explosive atmosphere.

EXTINGUISHING MEDIA:
For localized powder fires, smother with dry sand, dry dolomite, sodium chloride or soda ash. Use fire-extinguishing media appropriate to fight surrounding fire.

SPECIAL FIREFIGHTING PROCEDURES: None required.

6. ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL (618)258-5167.

In dust form, this product may be an explosion hazard. Remove all sources of ignition. Dust of fume may be suppressed by the use of a local exhaust system. Dispose of per guidelines under Section 13, WASTE DISPOSAL.

7. HANDLING AND STORAGE

HANDLING: Avoid dispersion of dust in air

STORAGE: No special requirements

Shelf Life Limitations: None known

Incompatible Materials for Packaging: None known

Wieland NA RA SDS No.: 01375.0001 Tin Coated Brass
Revision Date: 12/22/19 Review Date: 1/1/20
If this product is heated and fumes are generated, zinc oxide fumes could be formed. The ACGIH TLV and OSHA PEL for zinc oxide fume is 5 mg/m³.

**ENGINEERING CONTROLS:**
Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation.

**EYE / FACE PROTECTION:**
Use safety glasses.

**SKIN PROTECTION:**
Wear impervious (cut-resistant) gloves and other protective clothing (aprons, coveralls) as appropriate to prevent skin contact when using this product. If generating a dust, wash thoroughly after handling, especially before eating, drinking, or smoking.

**RESPIRATORY PROTECTION:**
Respiratory protection not normally needed. If dusting occurs or fumes are generated above the PEL/TLV, use a NIOSH-approved half-face or full-face respirator equipped with High Efficiency Particulate (HEPA) filter cartridges.

**GENERAL HYGIENE CONSIDERATIONS:**
Do not eat, drink, or smoke while using this product in dust form.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Red/gold metallic</td>
<td>Vapor Density (air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
<td>Boiling Point (°F)</td>
<td>No data</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not applicable - Mixture</td>
<td>Melting point</td>
<td>L:930 - 1065°C (1710-1950°F)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S:905-1050°C (1650-1920°F)</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
<td>Specific gravity (g/cc)</td>
<td>8.66</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
<td>Bulk Density</td>
<td>8.66 g/cc</td>
</tr>
</tbody>
</table>
POTENTIAL EXPOSURE ROUTES:
For dust: ingestion, inhalation, and eye contact. For fume: inhalation and eye contact. The finished alloy metal is not hazardous.

ACUTE ANIMAL TOXICITY DATA:

<table>
<thead>
<tr>
<th>For Product: (dust or fume):</th>
<th>For Components</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copper</td>
</tr>
<tr>
<td>Oral LD₅₀</td>
<td>Believed to be moderately toxic</td>
</tr>
<tr>
<td>Dermal LD₅₀</td>
<td>Believed to be &gt; 2 g/kg</td>
</tr>
<tr>
<td>Inhalation LC₅₀</td>
<td>Believed to be slightly to moderately toxic</td>
</tr>
<tr>
<td>Irritation</td>
<td>Believed to be an eye and respiratory irritant</td>
</tr>
</tbody>
</table>

SUBCHRONIC/CHRONIC TOXICITY:
No information for product.

CARCINOGENICITY:
This product is not known or reported to be carcinogenic. The International Agency for Research on Cancer (IARC) lists lead as possibly carcinogenic to humans, group 2B.
MUTAGENICITY: This product is not known or reported to be mutagenic. Lead has been shown to be mutagenic in several in vitro assays.

REPRODUCTIVE, TERATOGENICITY, OR DEVELOPMENTAL EFFECTS: This product is not known or reported to cause reproductive or developmental effects. Lead has been shown to affect fetal development including birth defects and reduce male reproductive function in laboratory animals.

NEUROLOGICAL EFFECTS: This product is not known or reported to cause neurological effects. Lead has caused peripheral and central nervous system damage and behavioral effects in laboratory animals.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY: None known or reported.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: No data is available on this product. Individual constituents are as follows:

Copper: The toxicity of copper to aquatic organisms varies significantly not only with the species, but also with the physical and chemical characteristics of the water, such as its temperature, hardness, turbidity and carbon dioxide content. Copper concentrations varying from 0.1 to 1.0 mg/l have been found by various investigators to be not toxic for most fish. However, concentrations of 0.015 to 3.0 mg/l have been reported as toxic, particularly in soft water to many kinds of fish, crustaceans, mollusks, insects, and plankton.

Lead: LC50(48 hrs.) to bluegill (Lepomis macrochirus) is reported to be 2-5 mg/l. Lead is toxic to waterfowl.

MOBILITY: Dissolved lead may migrate through soil.

PERSISTANCE/DEGRADABILITY: Lead may persist and accumulate in the environment.

BIOACCUMULATION: No Data

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non-hazardous wastes. This product may be a candidate for metal reclamation.

14. TRANSPORTATION INFORMATION

<table>
<thead>
<tr>
<th>PROPER SHIPPING NAME:</th>
<th>U.S. DOT</th>
<th>RID/ADR</th>
<th>IMDG</th>
<th>IATA</th>
<th>IMO</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not regulated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wieland NA RA SDS No.: 01375.0001  Tin Coated Brass
Revision Date: 12/22/19  Review Date: 1/1/20
15. REGULATORY INFORMATION

US FEDERAL

TSCA
The components of this product are listed on the Toxic Substance Control Act inventory.

CERCLA:
Zinc, R.Q. = 1000 lbs.; Copper, R.Q. = 5000 lbs.; Lead, R.Q. = 10 lbs. No reporting is required if diameter of the pieces of metal is equal to or exceeds 100 micrometers (0.004 inches).

SARA 313:
Copper, Zinc (fume or dust), Lead

SARA 313 Hazard Class:
Health: For dust or fume only
Acute – Yes Chronic - Yes
Fire: None
Reactivity: None
Release of Pressure: None

SARA 302 EHS List:
None of the components of this product are listed.

*RQ = Reportable Quantity

STATE RIGHT-TO-KNOW STATUS

<table>
<thead>
<tr>
<th>Component</th>
<th>*CA Prop. 65</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Massachusetts</th>
<th>Michigan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>Not listed</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Zinc</td>
<td>Not listed</td>
<td>X</td>
<td>Not listed</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lead</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*WARNING: This product contains detectable amounts of a chemical(s) known to the State of California to cause cancer and/or birth defects or other reproductive harm.*

EUROPEAN REGULATIONS

Because this may material contain lead at > 0.2%, this material is classified as Xn, Harmful.
However, this material in its massive solid form is not required to be labeled under EC regulations.
German WGK Classification: Not classified

CANADIAN REGULATIONS

DSL LIST: The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.
IDL: Copper, Lead
WHMIS: This product is considered to be a manufactured article and therefore not subject to WHMIS requirements.

16. OTHER INFORMATION

REVISIONS: Update to composition 1/1/04, revised format 6/1/15
PREPARED BY: WIELAND

NOTICE: THE INFORMATION IN THIS SDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. WIELAND NA RA BELIEVES THIS INFORMATION TO BE RELIABLE AND CURRENT AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS.

This document reviewed annually

Wieland NA RA SDS No.: 01375.0001  Tin Coated Brass
Revision Date: 12/22/19  Review Date: 1/1/20
1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>TIN ALLOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name:</td>
<td>Metal Alloy</td>
</tr>
<tr>
<td>Synonyms:</td>
<td>Metallic Tin Coatings and Tin based Tin/Lead Formulation Solders/Alloys</td>
</tr>
<tr>
<td>Chemical Family:</td>
<td>Copper</td>
</tr>
<tr>
<td>Formula:</td>
<td>Not applicable - mixture</td>
</tr>
<tr>
<td>Product Use:</td>
<td>Metallurgical Products</td>
</tr>
<tr>
<td>Manufacturer:</td>
<td></td>
</tr>
</tbody>
</table>

SDS Control Group: Wieland NA RA
305 Lewis and Clark Blvd
East Alton, IL 62024-1197
www.wieland.com

Technical Information: (618)258-5654
Emergency Information: (618)258-5167

2. HAZARD IDENTIFICATION

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Health hazards associated with this product only apply in a fume or dust form.

Classification of the substance or mixture (Fume or Dust)

<table>
<thead>
<tr>
<th>OSHA HCS 2012</th>
<th>Flammability – 0</th>
<th>Health – 1</th>
<th>Physical – 0</th>
</tr>
</thead>
</table>

Label Elements

Hazard Statements
- Causes skin irritation – H315
- May cause respiratory irritation – H335

Precautionary statements
- Avoid breathing dust or fumes – P261

Prevention
- Avoid breathing dust or fumes – P261
- Do not get in eyes, on skin, or on clothing – P262
- In case of inadequate ventilation wear respiratory protection – P285

Response
**EYE CONTACT:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing – P305 + P351 + P338

**SKIN CONTACT:** Rinse skin with water/shower – P353
Take off contaminated clothing and wash before reuse – P362

**INHALATION:**
If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing – P340
Get medical advice/attention – P313

**INGESTION:** Not a likely route of exposure for finished metal alloy.
If dust is ingested, immediately drink water to dilute.
Get medical advice/attention – P363

**NOTE TO PHYSICIANS:** There is no specific antidote to the active ingredients in this product; use symptomatic treatment.

**OTHER HAZARDS**


**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Exposure to dust or fume may aggravate an existing dermatitis, asthma, emphysema, or other respiratory disease.

**CANADA** According to WHMIS

**Classification of the substance or mixture**

WHMIS This product is considered to be a manufactured article and therefore not subject to WHMIS requirements.

**OTHER INFORMATION**

**NFPA** Not rated

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Components</th>
<th>% By Weight</th>
<th>EINECS/ELINCS #</th>
<th>EU Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1</td>
<td>Lead</td>
<td>0 - 40</td>
<td>231-100-4</td>
<td>None</td>
</tr>
<tr>
<td>7440-31-5</td>
<td>Tin</td>
<td>60 - 100</td>
<td>231-141-8</td>
<td>None</td>
</tr>
</tbody>
</table>

**OSHA REGULATORY STATUS:** In solid form, not hazardous. Dust or fume: carcinogen, irritant, lung, blood, kidney, reproductive and developmental toxin, neurotoxin

**In solid form, this material is not hazardous. Dust and fumes are hazardous materials.**
4. FIRST AID MEASURES

**EYE CONTACT:** Immediately flush out fume and dust particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call a physician at once.

**SKIN CONTACT:** If exposed to dust or fumes, wash skin with plenty of water. Remove contaminated clothing and shoes and launder before reuse. If skin irritation or rash develops and persists or recurs, get medical attention.

**INHALATION:** If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.

**INGESTION:** Not a likely route of exposure for finished metal alloy. If dust is ingested, immediately drink water to dilute. Consult a physician if symptoms develop.

**NOTE TO PHYSICIANS:** There is no specific antidote to the active ingredients in this product; use symptomatic treatment.

5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive</td>
<td>No</td>
<td>Flammable</td>
<td>No</td>
</tr>
<tr>
<td>Combustible</td>
<td>No</td>
<td>Pyrophoric</td>
<td>No</td>
</tr>
<tr>
<td>Flash Point (°C):</td>
<td>Not Applicable</td>
<td>Burning Rate of Material</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Lower Explosive Limit:</td>
<td>Not Applicable</td>
<td>Auto Ignition Temp:</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Dust may cause an ignitable and/or an explosive atmosphere.

**EXTINGUISHING MEDIA:** For localized powder fires, smother with dry sand, dry dolomite, sodium chloride or soda ash. Use fire-extinguishing media appropriate to fight surrounding fire.

**SPECIAL FIREFIGHTING PROCEDURES:** None required.

6. ACCIDENTAL RELEASE MEASURES

**FOR ALL TRANSPORTATION ACCIDENTS, CALL (618)258-5167.**

In dust form, this product may be an explosion hazard. Remove all sources of ignition. Dust of fume may be suppressed by the use of a local exhaust system. Dispose of per guidelines under Section 13, WASTE DISPOSAL.

7. HANDLING AND STORAGE

| HANDLING:             | Avoid dispersion of dust in air |
| STORAGE:              | No special requirements         |
| **Shelf Life Limitations:** | None known                     |
| **Incompatible Materials for Packaging:** | None known |
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>CAS #</th>
<th>CHEMICAL NAME</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>INTERNATIONAL OELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1</td>
<td>Lead</td>
<td>0.05 mg/m³</td>
<td>0.05 mg/m³</td>
<td>Austria, Denmark, Germany, Sweden, Switzerland: 0.1 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Norway, Poland: 0.05 mg/m³</td>
</tr>
<tr>
<td>7440-31-5</td>
<td>Tin</td>
<td>2 mg/m³</td>
<td>2 mg/m³</td>
<td>U.K. (TLV): 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Austria &amp; Germany (MAK), Belgium, Finland, Denmark,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The Netherlands, Poland, Switzerland: 2 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hungary, Norway: 1 mg/m³</td>
</tr>
</tbody>
</table>

ENGINEERING CONTROLS:
Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation.

EYE / FACE PROTECTION:
Use safety glasses.

SKIN PROTECTION:
Wear impervious (cut-resistant) gloves and other protective clothing (aprons, coveralls) as appropriate to prevent skin contact when using this product. If generating a dust, wash thoroughly after handling, especially before eating, drinking, or smoking.

RESPIRATORY PROTECTION:
Respiratory protection not normally needed. If dusting occurs or fumes are generated above the PEL/TLV, use a NIOSH-approved half-face or full-face respirator equipped with High Efficiency Particulate (HEPA) filter cartridges.

GENERAL HYGIENE CONSIDERATIONS:
Do not eat, drink, or smoke while using this product in dust form.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid-silver to gray metallic</td>
<td>Vapor Density (air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Odor:</td>
<td>None</td>
<td>Boiling Point (°F)</td>
<td>1740°C (3164°F)</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not applicable - Mixture</td>
<td>Melting point</td>
<td>183 – 324°C (361 - 616°F)</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
<td>Specific gravity (g/cc)</td>
<td>5.83 – 11.27</td>
</tr>
<tr>
<td>pH:</td>
<td>Not applicable</td>
<td>Bulk Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg)</td>
<td>Not applicable</td>
<td>Viscosity (cps)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Incompatible Materials for Storage or Transport: None known

OTHER PRECAUTIONS:
Do not shake clothing, rags or other items to remove dust. Dust should be removed by washing or HEPA vacuuming. Do not use compressed air for cleaning or dry sweeping.
Vapor Density: Not applicable

Solubility in Water (20°C): Negligible

Volatile, Percent by Volume: Not applicable

Decomposition: Not applicable

Evaporation Rate: Not Applicable

Octanol/Water Partition Coefficient: Unknown

10. STABILITY AND REACTIVITY

STABILITY:

CONDITIONS TO AVOID:

MATERIALS TO AVOID:

HAZARDOUS DECOMPOSITION PRODUCTS:

HAZARDOUS POLYMERIZATION:

11. TOXICOLOGICAL INFORMATION

POTENTIAL EXPOSURE ROUTES: For dust: ingestion, inhalation, and eye contact. For fume: inhalation and eye contact. The finished alloy metal is not hazardous.

ACUTE ANIMAL TOXICITY DATA:

<table>
<thead>
<tr>
<th>For Product (dust or fume)</th>
<th>For Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>Lead</td>
</tr>
<tr>
<td>Believed to be slightly toxic</td>
<td>No data</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td></td>
</tr>
<tr>
<td>Believed to be &gt; 2 g/kg</td>
<td>No data</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td></td>
</tr>
<tr>
<td>Believed to be slightly to moderately toxic</td>
<td>No data</td>
</tr>
<tr>
<td>Irritation</td>
<td></td>
</tr>
<tr>
<td>Eye and respiratory irritant</td>
<td>Not irritating</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SUBCHRONIC/CHRONIC TOXICITY:

IARC lists lead as possibly carcinogenic to humans, Group 2B.

This product is not known or reported to be mutagenic.

This product is not known or reported to cause reproductive or developmental effects. Lead has been shown to affect fetal development including birth defects and reduce male reproductive function in laboratory animals.

Wieland NA RA SDS No.: 01375.0001  Tin Coated Brass
Revision Date: 12/22/19  Review Date: 1/1/20
NEUROLOGICAL EFFECTS: This product is not known or reported to cause neurological effects. Lead has caused peripheral and central nervous system damage and behavioral effects in laboratory animals.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY: None known or reported.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: No data is available on this product. Individual constituents are as follows:

- **Lead:** LC$_{50}$ (48 hrs.) to bluegill (*Lepomis macrochirus*) is reported to be 2-5 mg/l. Lead is toxic to waterfowl.

MOBILITY: Dissolved lead may migrate through soil.

PERSISTANCE/DEGRADABILITY: Not biodegradable. Lead may persist and accumulate in the environment.

BIOACCUMULATION: No Data

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non-hazardous wastes. This product may be a candidate for metal reclamation.

14. TRANSPORTATION INFORMATION

<table>
<thead>
<tr>
<th>PROPER SHIPPING NAME:</th>
<th>U.S. DOT</th>
<th>RID/ADR</th>
<th>IMDG</th>
<th>IATA</th>
<th>IMO</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAZARD CLASS:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>UN NO.:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PACKING GROUP:</td>
<td></td>
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<tr>
<td>LABEL:</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>REPORTABLE QUANTITY:</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Not regulated

15. REGULATORY INFORMATION

US FEDERAL

<table>
<thead>
<tr>
<th>TSCA</th>
<th>The components of this product are listed on the Toxic Substance Control Act inventory.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERCLA:</td>
<td>Lead, R.Q. = 10 lbs (No reporting is required if diameter of the pieces of metal is equal to or exceeds 100 micrometers (0.004 inches).)</td>
</tr>
<tr>
<td>SARA 313:</td>
<td>Lead</td>
</tr>
<tr>
<td>SARA 313 Hazard Class:</td>
<td><strong>Health:</strong> For dust or fume only</td>
</tr>
<tr>
<td>SARA 302 EHS List:</td>
<td>None of the components of this product are listed.</td>
</tr>
</tbody>
</table>

Wieland NA RA SDS No.: 01375.0001  Tin Coated Brass
Revision Date: 12/22/19  Review Date: 1/1/20
"RQ = Reportable Quantity

STATE RIGHT-TO-KNOW STATUS

<table>
<thead>
<tr>
<th>Component</th>
<th>*CA Prop. 65</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Massachusetts</th>
<th>Michigan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tin</td>
<td>Not listed</td>
<td>Not listed</td>
<td>X</td>
<td>X</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

* "WARNING: This product contains detectable amounts of a chemical(s) known to the State of California to cause cancer and/or birth defects or other reproductive harm."

EUROPEAN REGULATIONS

This material is classified as Xn, Harmful. However, this material in its massive solid form is not required to be labeled under EC regulations.

German WGK Classification: Not classified

CANADIAN REGULATIONS

DSL LIST: The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.

IDL: Lead and Tin

WHMIS: This product is considered to be a manufactured article and therefore not subject to WHMIS requirements.

16. OTHER INFORMATION

UPDATE TO COMPOSITION 1/1/04, REVISED FORMAT 6/1/15, UPDATE COMPANY NAME 12/22/19

NOTICE: THE INFORMATION IN THIS SDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. WIELAND NA RA BELIEVES THIS INFORMATION TO BE RELIABLE AND CURRENT AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS.

This document reviewed annually