1. Identification

1.1. Product identifier

**Product Identity**
Brass and Copper Alloys Brass, Bronze, Copper, Copper-Nickel

**Alternate Names**
Brass and Copper Alloys Brass, Bronze, Copper, Copper-Nickel, c10100 - c12200, c14300, c1450, c17000 - c17300, c17500, c19400, c22000 - c24000, c26000 - c36000, c37700 - c38500, c46400, c48500, c52000 - c52100, c53400, c54400, c61400 - c63000, c65100 - c65500, c70600, c71500, c75200, c84400 - c93200, c95400, MSDS # 200

1.2. Relevant identified uses of the substance or mixture and uses advised against

**Intended use**
See Technical Data Sheet.

**Application Method**
See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

**Company Name**
TW Metals Company, Inc.
The Arboretum 760 Constitution Drive
Exton PA 19341

**Emergency**
CHEMTREC (USA) (800) 424-9300

2. Hazard(s) identification

2.1. Classification of the substance or mixture

**Acute Tox. 4;H332** Harmful if inhaled.

**Skin Irrit. 3;H316** Causes mild skin irritation. (Not adopted by US OSHA)

**Skin Sens. 1;H317** May cause an allergic skin reaction.

**Resp. Sens. 1;H334** May cause allergy or asthma symptoms of breathing difficulties if inhaled.

**Carc. 1A;H350** May cause cancer.

**STOT RE 1;H372** Causes damage to organs through prolonged or repeated exposure. Specific Target Organs: (lungs )

**Aquatic Acute 1;H400** Very toxic to aquatic life.

**Aquatic Chronic 2;H411** Toxic to aquatic life with long lasting effects.
2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

![Danger symbol]

H316 Causes mild skin irritation.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H334 May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.
H350 May cause cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

[Prevention]:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust / fume / gas / mist / vapors / spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P302+352 IF ON SKIN: Wash with plenty of soap and water.
P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
P308+313 IF exposed or concerned: Get medical advice / attention.
P314 Get Medical advice / attention if you feel unwell.
P321 Specific treatment (see information on this label).
Safety Data Sheet

Brass and Copper Alloys Brass, Bronze, Copper, Copper-Nickel

SDS Revision Date: 01/14/2016

P331 Do NOT induce vomiting.
P333+313 If skin irritation or a rash occurs: Get medical advice / attention.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P341 If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor / physician.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.

[Storage]:

P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

<table>
<thead>
<tr>
<th>Ingredient/Chemical Designations</th>
<th>Weight %</th>
<th>GHS Classification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>75 - 100</td>
<td>Not Classified</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007440-50-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc powder (stabilized)</td>
<td>10 - 25</td>
<td>Aquatic Acute 1;H400 Aquatic Chronic 1;H410</td>
<td>[1]</td>
</tr>
<tr>
<td>CAS Number: 0007440-66-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nickel</td>
<td>10 - 25</td>
<td>Carc. 2;H351 STOT RE 1;H372 Skin Sens. 1;H317 Aquatic Chronic 3;H412</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007440-02-0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum (Al)</td>
<td>5 - 10</td>
<td>Flam. Sol. 1;H228 WaterReact. 2;H261</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007429-90-5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead Compounds (as Pb)</td>
<td>1 - 5</td>
<td>Carc. 1A;H350 Aquatic Acute 1;H400</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007439-92-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td>1 - 5</td>
<td>Not Classified</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007440-31-5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron</td>
<td>1 - 5</td>
<td>Not Classified</td>
<td>[1]</td>
</tr>
<tr>
<td>CAS Number: 0007439-89-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese compounds (as Mn)</td>
<td>1 - 5</td>
<td>Not Classified</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007439-96-5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silicon</td>
<td>1 - 5</td>
<td>Not Classified</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007440-21-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt compounds (as Co)</td>
<td>1 - 5</td>
<td>Resp. Sens. 1;H334 Skin Sens. 1;H317 Aquatic Chronic 4;H413</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007440-48-4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beryllium</td>
<td>1 - 5</td>
<td>Carc. 1B;H350i Acute Tox. 2;H330 Acute Tox. 3;H301 STOT RE 1;H372 Eye Irrit. 2;H319</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number: 0007440-41-7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. First aid measures

4.1. Description of first aid measures

General
In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation
Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes
Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin
Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion
If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Overview
Brass and copper alloys in their solid state present no inhalation, ingestion or contact health hazard. However, inhaling dusts, fumes or mists which may be generated during certain manufacturing procedures (burning, melting, welding, sawing, brazing, grinding and machining) may be hazardous to your health. Dusts may also be irritating to the unprotected skin or eyes.

ACUTE EFFECTS: Excessive exposure to dusts / fumes may cause irritation of eyes, nose or throat. Inhalation of dusts / fumes may result in metal fume fever (metallic taste in mouth, dryness and irritation of throat, chills and fever).

CHRONIC EFFECTS: Prolonged inhalation of fumes or dusts may cause a variety of adverse health effects to the respiratory system, including (but not necessarily limited to) lesions of the mucous membrane, bronchitis, pneumonia and cancers of the nasal cavity and respiratory tract.

POTENTIAL HEALTH EFFECTS/MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Any pre-existing chronic respiratory condition (asthma, chronic bronchitis, emphysema).

ROUTES OF ENTRY: Inhalation (dusts / fumes / mists), Contact with Skin and Eyes (dusts / mists), Ingestion (dusts).

Possible cancer hazard. Contains an ingredient which may cause cancer based on animal data (See Section 3 and Section 15 for each ingredient). Risk of cancer depends on duration and level of exposure.

See section 2 for further details.
5. Fire-fighting measures

5.1. Extinguishing media
Use what is appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition: No hazardous decomposition data available.
Avoid breathing dust / fume / gas / mist / vapors / spray.
Do not get in eyes, on skin, or on clothing.

5.3. Advice for fire-fighters
Nonflammable at low temperatures, but will burn at high temperatures.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions
Do not allow spills to enter drains or waterways.
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up
No special procedures needed.

7. Handling and storage

7.1. Precautions for safe handling
Minimize activities which may generate dusts, mists or fumes. Keep areas well ventilated. Use suitable equipment to move materials.
See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities
Handle containers carefully to prevent damage and spillage.
Incompatible materials: Strong Acids (such as Sulfuric, Hydrochloric, Nitric).
See section 2 for further details. - [Storage]:

7.3. Specific end use(s)
No data available.

8. Exposure controls and personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Ingredient</th>
<th>Source</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0007429-90-5</td>
<td>Aluminum (Al)</td>
<td>OSHA</td>
<td>TWA 15 mg/m3 (total) TWA 5 mg/m3 (resp)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>TWA: 1.0 mg/m3 Revised 2008,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH</td>
<td>TWA 10 mg/m3 (total) TWA 5 mg/m3 (resp)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplier</td>
<td>No Established Limit</td>
</tr>
<tr>
<td>0007439-89-6</td>
<td>Iron</td>
<td>OSHA</td>
<td>No Established Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>No Established Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH</td>
<td>No Established Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplier</td>
<td>No Established Limit</td>
</tr>
<tr>
<td>0007439-92-1</td>
<td>Lead Compounds (as Pb)</td>
<td>OSHA</td>
<td>[1910.1025] TWA 0.050 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>TWA: 0.05 mg/m3 R, 2B, 2A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH</td>
<td>TWA (8-hour) 0.050 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplier</td>
<td>No Established Limit</td>
</tr>
<tr>
<td>0007439-96-5</td>
<td>Manganese compounds (as Mn)</td>
<td>OSHA</td>
<td>C 5 mg/m3 *See specific listings for specific compounds.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>TWA: 0.2 mg/m3 R</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH</td>
<td>TWA 1 mg/m3 ST 3 mg/m3 *See specific listings for specific compounds.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplier</td>
<td>No Established Limit</td>
</tr>
<tr>
<td>0007440-02-0</td>
<td>Nickel</td>
<td>OSHA</td>
<td>TWA 1 mg/m3 [*Note: The PEL does not apply to Nickel carbonyl.]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>Insoluble TWA: 0.05 mg/m3 A1, 1, (I) Soluble TWA: 0.05 mg/m3 A1, 1, 2B,(I)</td>
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<tr>
<td></td>
<td></td>
<td>NIOSH</td>
<td>Ca TWA 0.015 mg/m3 [*Note: The REL does not apply to Nickel carbonyl.]</td>
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<tr>
<td></td>
<td></td>
<td>Supplier</td>
<td>No Established Limit</td>
</tr>
<tr>
<td>0007440-21-3</td>
<td>Silicon</td>
<td>OSHA</td>
<td>TWA 15 mg/m3 (total) TWA 5 mg/m3 (resp)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>No Established Limit</td>
</tr>
</tbody>
</table>
The exposure limits for nuisance dust are: OSHA PEL: 15 mg/m³ (50 mppcf*) TWA, ACGIH 10 mg/m³.

### Carcinogen Data

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Ingredient</th>
<th>Source</th>
<th>Select Carcinogen</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0007429-90-5</td>
<td>Aluminum (Al)</td>
<td>OSHA</td>
<td>No</td>
<td>Value</td>
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<tr>
<td></td>
<td></td>
<td>NTP</td>
<td>Known: No;</td>
<td>Suspected: No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IARC</td>
<td>Group 1: No;</td>
<td>Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;</td>
</tr>
<tr>
<td>0007439-89-6</td>
<td>Iron</td>
<td>OSHA</td>
<td>No</td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NTP</td>
<td>Known: No;</td>
<td>Suspected: No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IARC</td>
<td>Group 1: No;</td>
<td>Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;</td>
</tr>
<tr>
<td>0007439-92-1</td>
<td>Lead Compounds (as Pb)</td>
<td>OSHA</td>
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<td>Value</td>
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<tr>
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<td>NTP</td>
<td>Known: No;</td>
<td>Suspected: Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IARC</td>
<td>Group 1: No;</td>
<td>Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No;</td>
</tr>
<tr>
<td>0007439-96-5</td>
<td>Manganese compounds (as Mn)</td>
<td>OSHA</td>
<td>No</td>
<td>Value</td>
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<tr>
<td></td>
<td></td>
<td>NTP</td>
<td>Known: No;</td>
<td>Suspected: No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IARC</td>
<td>Group 1: No;</td>
<td>Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No;</td>
</tr>
</tbody>
</table>
### 8.2. Exposure controls

**Respiratory**

Wear NIOSH approved dust / mist / fume respirator when welding or burning this metal.

**Eyes**

Face shields (welding or burning), Safety glasses (cutting or grinding).

**Skin**

Use appropriate protective clothing such as welding aprons and gloves when welding or burning.

**Engineering Controls**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

**Other Work Practices**

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

### 9. Physical and chemical properties

**Appearance**

Metal Solid
10. Stability and reactivity

10.1. Reactivity
Hazardous Polymerization will not occur.

10.2. Chemical stability
Stable under normal circumstances.

10.3. Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
No data available.

10.5. Incompatible materials
Strong Acids (such as Sulfuric, Hydrochloric, Nitric).

10.6. Hazardous decomposition products
No hazardous decomposition data available.

11. Toxicological information

Acute toxicity
<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Oral LD50, mg/kg</th>
<th>Skin LD50, mg/kg</th>
<th>Inhalation Vapor LC50, mg/L/4hr</th>
<th>Inhalation Dust/Mist LC50, mg/L/4hr</th>
<th>Inhalation Gas LC50, ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper - (7440-50-8)</td>
<td>2,500.00, Rat - Category: 5</td>
<td>&gt;2,000.00, Rat - Category: 5</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
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<tr>
<td>Zinc powder (stabilized) - (7440-66-6)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
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<tr>
<td>Nickel - (7440-02-0)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
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<td>No data available</td>
</tr>
<tr>
<td>Aluminum (Al) - (7429-90-5)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Lead Compounds (as Pb) - (7439-92-1)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Tin - (7440-31-5)</td>
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<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Iron - (7439-89-6)</td>
<td>30,000.00, Rat - Category: NA</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
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<tr>
<td>Manganese compounds (as Mn) - (7439-96-5)</td>
<td>9,000.00, Rat - Category: NA</td>
<td>500.00, Rabbit - Category: 3</td>
<td>19.00, Rat - Category: 4</td>
<td>No data available</td>
<td>No data available</td>
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<tr>
<td>Silicon - (7440-21-3)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Cobalt compounds (as Co) - (7440-48-4)</td>
<td>6,171.00, Rat - Category: NA</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
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<tr>
<td>Beryllium - (7440-41-7)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
<th>Hazard Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>4</td>
<td>Harmful if inhaled.</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>3</td>
<td>Causes mild skin irritation. (Not adopted by US OSHA)</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>1</td>
<td>May cause allergy or asthma symptoms of breathing difficulties if inhaled.</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>1</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>1A</td>
<td>May cause cancer.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
12. Ecological information

12.1. Toxicity
Very toxic to aquatic life.
Toxic to aquatic life with long lasting effects.
No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>96 hr LC50 fish, mg/l</th>
<th>48 hr EC50 crustacea, mg/l</th>
<th>ErC50 algae, mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper - (7440-50-8)</td>
<td>0.0103, Pimephales promelas</td>
<td>0.0025, Daphnia magna</td>
<td>0.018 (72 hr), Pseudokirchneriella subcapitata</td>
</tr>
<tr>
<td>Zinc powder (stabilized) - (7440-66-6)</td>
<td>0.182, Oncorhynchus tshawytscha</td>
<td>0.068, Daphnia magna</td>
<td>0.106 (72 hr), Pseudokirchneriella subcapitata</td>
</tr>
<tr>
<td>Nickel - (7440-02-0)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Aluminum (Al) - (7429-90-5)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Lead Compounds (as Pb) - (7439-92-1)</td>
<td>0.44, Cyprinus carpio</td>
<td>4.40, Daphnia magna</td>
<td>0.25 (72 hr), Scenedesmus subspicatus</td>
</tr>
<tr>
<td>Tin - (7440-31-5)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Iron - (7439-89-6)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Manganese compounds (as Mn) - (7439-96-5)</td>
<td>40.00, Daphnia magna</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Silicon - (7440-21-3)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Cobalt compounds (as Co) - (7440-48-4)</td>
<td>100.00, Danio rerio</td>
<td>Not Available</td>
<td>0.05 (72 hr), Pseudokirchneriella subcapitata</td>
</tr>
<tr>
<td>Beryllium - (7440-41-7)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
There is no data available on the preparation itself.

12.3. Bioaccumulative potential
Not Measured

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects
No data available.
13. Disposal considerations

13.1. Waste treatment methods
Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

14.1. UN number
DOT (Domestic Surface Transportation) Not Applicable
IMO / IMDG (Ocean Transportation) Not Regulated
ICAO/IATA Not Regulated

14.2. UN proper shipping name
Not Regulated
Not Regulated
Not Regulated

14.3. Transport hazard class(es)
DOT Hazard Class: Not Applicable
IMDG: Not Applicable
Sub Class: Not Applicable
Air Class: Not Applicable

14.4. Packing group
Not Applicable
Not Applicable
Not Applicable

14.5. Environmental hazards
IMDG Marine Pollutant: Yes; (Zinc powder (stabilized))

14.6. Special precautions for user
No further information

15. Regulatory information

Regulatory Overview
The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA)
All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification D2A

US EPA Tier II Hazards
Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): Yes

EPCRA 311/312 Chemicals and RQs (lbs):
Beryllium (10.00)
Copper (5,000.00)
Lead Compounds (as Pb) (10.00)
Nickel (100.00)
Zinc powder (stabilized) (1,000.00)
Safety Data Sheet

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EPCRA 302 Extremely Hazardous:
- Phosphorus

EPCRA 313 Toxic Chemicals:
- Aluminum (Al)
- Beryllium
- Cobalt compounds (as Co)
- Copper
- Lead Compounds (as Pb)
- Manganese compounds (as Mn)
- Nickel
- Zinc powder (stabilized)

Proposition 65 - Carcinogens (>0.0%):
- Beryllium
- Cobalt compounds (as Co)
- Lead Compounds (as Pb)
- Nickel

Proposition 65 - Developmental Toxins (>0.0%):
- Lead Compounds (as Pb)

Proposition 65 - Female Repro Toxins (>0.0%):
- Lead Compounds (as Pb)

Proposition 65 - Male Repro Toxins (>0.0%):
- Lead Compounds (as Pb)

New Jersey RTK Substances (>1%):
- Aluminum (Al)
- Beryllium
- Cobalt compounds (as Co)
- Copper
- Lead Compounds (as Pb)
- Manganese compounds (as Mn)
- Nickel
- Silicon
- Tin
- Zinc powder (stabilized)

Pennsylvania RTK Substances (>1%):
- Aluminum (Al)
- Beryllium
- Cobalt compounds (as Co)
Brass and Copper Alloys Brass, Bronze, Copper, Copper-Nickel

Copper
Lead Compounds (as Pb)
Manganese compounds (as Mn)
Nickel
Silicon
Tin
Zinc powder (stabilized)

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H228 Flammable solid.
H261 In contact with water releases flammable gases.
H301 Toxic if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H334 May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H350 May cause cancer.
H350i May cause cancer if inhaled.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
H413 May cause long lasting harmful effects to aquatic life.

The information contained herein is furnished without warranty of any kind. The above information is believed to be correct but does not purport to be all inclusive and should be used only as a guide. Users should make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.
Safety Data Sheet

Brass and Copper Alloys Brass, Bronze, Copper, Copper-Nickel

SDS Revision Date: 01/14/2016

End of Document