Material Safety Data Sheet

Section 1: Product and Company Identification

PRODUCT NAME: Wire Solder, Brass
CHEMICAL FAMILY: Silver Brazing Alloy
CHEMICAL NAME: Solder

Section 2: Composition/Ingredients

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CAS No</th>
<th>% W t.</th>
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<tbody>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
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<tr>
<td>Tin</td>
<td>7440-31-5</td>
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Section 3: Hazard Identification

HAZARD OVERVIEW:
We do not consider this product in the form it is sold to constitute a physical hazard or a health hazard. Subsequent operations such as abrading, melting, welding, cutting or processing in any other fashion may produce potentially hazardous dust or fumes which can be inhaled, swallowed, or come in contact with the skin or eyes.

PRIMARY ROUTES OF ENTRY: Inhalation, Skin contact.
TARGET ORGANS: Respiratory tract; Skin

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:
Listed below are certain potential health hazards, which apply to the hazardous ingredients, found in the subject alloy.

SILVER: Acute -
Acute toxicity data for silver is not readily available. Silver does not possess strong or significant properties indicative of overexposure
Chronic -
Skin contact or inhalation, may lead to a condition called Argyrosis. A local or centralized discoloration of the eyes, skin and mucous membrane, where gray/blue patches of pigmentation are formed.

COPPER: Acute -
Inhalation of fumes may cause “Metal Fume Fever”, with reversible flu like symptoms
Chronic -
May cause hemolysis of the red blood cells (the breakdown of red blood cells) and injury to the liver, lungs, kidneys and pancreas.

NICKEL: Inhalation -
Fumes and dust are a respiratory irritant and may cause pulmonary asthma.
Skin -
Hypersensitivity is common and may cause allergic contact dermatitis.
Chronic -
Nickel and its compounds have been reported to cause cancer of the lungs and sinuses.

TIN: Inhalation -
Dust or fumes may cause a benign pneumoconiosis called stannosis, which is reported not to be disabling

ZINC: Inhalation -
Dust or fume is relatively non-toxic to humans. Oxidation of zinc fumes prior to inhalation may cause throat dryness, headache, nausea, general aches and fever.
Skin -
Prolonged contact may cause dermatitis.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
Individuals who may have had allergic reactions to metals or sensitivity, may encounter skin rash or dermatitis, if skin contact with this product occurs. Persons with impaired pulmonary functions, may incur further impairment if dust or fumes are inhaled.

CARCINOGENIC REFERENCES:
Nickel is listed as -
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.
NTP-1: Known to be carcinogenic: sufficient evidence from human studies.

Section 4: First Aid Measures

FIRST AID FOR EYES: Dust or powder should be flushed from the eyes with running water for 15 minutes. If irritation persists obtain medical assistance.

FIRST AID FOR SKIN: Skin cuts and abrasions can be treated by standard first aid. Skin contamination with dust or powder can be removed with soap and water. If irritation persists obtain medical assistance.

FIRST AID FOR INGESTION: Obtain medical assistance at once.

FIRST AID FOR INHALATION: Breathing difficulty, caused by inhalation of dust or fume requires removal to fresh air. If breathing has stopped perform artificial respiration and seek medical assistance at once.

Section 5: Fire Fighting Measures

FLASH POINT: Non-flammable as a solid

EXTINGUISHING MEDIA: This material is non-combustible, use appropriate extinguishing agent for surrounding fires. Do not use water to extinguish fires around operations involving molten metal, due to the potential for steam explosion.

SPECIAL FIRE FIGHTING PROCEDURES: Self-contained breathing apparatus should be worn when fighting metal dust fires. High levels of dust or fine particles in the air may ignite or explode.

Section 6: Accidental Release Measures

SPILL OR LEAK PROCEDURES: In solid form this material poses no special clean-up problems. Use normal clean up procedures; wet sweeping or HEPA vacuum, for clean up of dust or powder. Do not use compressed air for cleaning.

Section 7: Storage and Handling

In solid form this material poses no special problems. Store metal in a dry area. Do not store adjacent to acids.
Section 8: Exposure Control/Personal Protection

EXPOSURE LIMIT VALUES:
Not established for product as whole. Silver: TLV, ACGIH: 0.01 mg/m³, PEL, OSHA: 0.1 mg/m³

VENTILATION REQUIREMENTS:
LOCAL EXHAUST: Recommended, when cutting, grinding or melting or any other operation where dust or fumes are created
GENERAL: Recommended

PERSONAL PROTECTIVE EQUIPMENT
Eye protection requirements: Safety glasses are recommended.
Skin protection requirements: Protective gloves are recommended, to prevent mechanical irritation.
Respiratory protection: Not normally required. Use an appropriate NIOSH approved respirator if airborne dust concentration exceed the OSHA, PEL or ACGIH, TLV
Other protective equipment: Eye wash fountain should be readily available in areas of use or handling.

ENVIRONMENTAL SURVEILLANCE:
If the operation generates dust or fumes, exposure to airborne materials should be determined by having air samples taken in the employees breathing zone and work area.

Section 9: Physical and Chemical Properties

PHYSICAL FORM: Solid metal
COLOR: Silver/Red
ODOR: None
MELT POINT: 961° (100% Ag)
SOLUBILITY IN WATER: Insoluble
SPECIFIC GRAVITY: N/A
VOLATILE BY WEIGHT: Essentially zero
DENSITY: Varies

Section 10: Reactivity

STABILITY: This is a stable material.
HAZARDOUS POLYMERIZATION: Will not occur.
INCOMPATIBILITIES: Acetylene, Ammonia, Acids and Strong Oxidizers.
DECOMPOSITION PRODUCTS: Metal oxide fumes.
CONDITIONS TO AVOID: Conditions which create dust or fumes.

Section 11: Toxicological Information

There is no information on the toxicity of this alloy. Under normal use of the solid form of this material there are few health hazards. Welding, cutting, grinding or any process creating dust, fume or oxide may cause hazardous levels of certain elements, as addressed in Section 3.

Section 12: Ecological Information

In solid form this material poses no special environmental problems. Metal powder or dust may have significant impact on air and water quality. Emissions, spills and releases to the environment should be controlled immediately.
Section 13: Disposal Considerations

Because of its high intrinsic value this material should be reclaimed. Dispose of in accordance with all applicable Federal, State and Local Regulations.

Section 14: Transportation Information

GROUND TRANSPORTATION:
D.O.T. SHIPPING NAME: Not regulated  TECHNICAL SHIPPING NAME: Metal Alloy
D.O.T. HAZARD CLASS: None  UN/NA NUMBER: None
PRODUCT RQ: None

AIR TRANSPORT:
ICAO-TI and IATA-DGR: Not regulated in solid form

Section 15: Regulatory Information

<table>
<thead>
<tr>
<th>HMIS Rating</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
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<tr>
<td>Silver</td>
<td>1 *</td>
<td>0</td>
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HMIS Rating uses an asterisk (*) to convey the presence of chronic hazard

OSHA STATUS:

TSCA STATUS:
All components of this product are listed in the US Environmental Protection Agency on the TSCA Chemical Substance Inventory

SARA TITLE III:
The constituents of this alloy contain hazardous substances, above one (1) percent, and are subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know act of 1986 and 40CFR372.

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INTERNATIONAL REGULATIONS:

CANADA – WHMIS Disclosure List: SOR/ORDER/88-66
Nickel falls into - Subdivision A of Division 2 of Class D, as defined by Section 54,

EUROPEAN UNION
Risk Phrase: Nickel R-42/43, R-49

Section 16: Other Information

DATE OF REVISION: March 2011
This MSDS has been revised following the guidelines outlined in the American National Standard for Hazardous Materials Z400.1.1393 “Material Safety Data Sheets – Preparation”

"The information herein is given in good faith, but no warranty, express or implied, is made."