

Copper-Phosphorus Brazing Alloys

Safety Data Sheet

1. Product and Company Identification

----- Suppliers and Manufacturers

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Issue Date: 05/03/2013

Product Name: Copper-Phosphorus Brazing Alloys

SDS Number: 78

Product Codes: 69-050; 69-060; 69-070; 69-080; 69-675

2. Composition/Information on Ingredients

Ingredient Name	CAS Number	%
Copper	7440-50-8	91-95
Phosphorus	7723-14-0	5-9

3. Hazards Identification

----- Primary Routes(s) of Entry

Ingestion; inhalation.

Eye Hazards

Eye contact with this product in finely-divided forms may cause irritation, conjunctivitis, and/or ulceration of the cornea.

Skin Hazards

Skin contact with this product, particularly in finely-divided forms, may cause irritation, discoloration, and/or contact dermatitis.

Ingestion Hazards

Ingestion of this product in finely-divided forms may cause nausea, vomiting, and gastrointestinal irritation.

Inhalation Hazards

Inhalation of the components of this product is not known to present a significant risk to health when used according to instructions and with appropriate protective measures (see Section #8). Inhalation of component elements has been reported to cause one or more of the following symptoms and effects upon excessively high or prolonged exposure:

COPPER: Acute exposure may cause respiratory tract irritation, fever, muscle ache, chills, cough, weakness, and a metallic taste. Chronic exposure may damage the liver, kidney, spleen, pancreas, and brain.

PHOSPHORUS: The red form of phosphorus is stable and relatively non-toxic at room temperature. When heated in the presence of air, it is converted to phosphorus pentoxide, which is corrosive and irritating to the eyes, nose, throat, and mucous membranes.

4. First Aid Measures

Eye

Flush affected areas with water for at least fifteen minutes. Seek medical assistance if necessary.

Skin

Remove contaminated clothing. Wash affected area with large quantities of water for at least five minutes. Seek medical attention if necessary. Launder or dry-clean clothing before reuse.

Ingestion

If subject is conscious, induce vomiting. If unconscious or convulsive, seek immediate medical assistance.

Inhalation

If signs and symptoms of toxicity are observed, remove subject from area, administer oxygen, and seek medical attention. Keep the subject warm and at rest. Perform artificial respiration if breathing has stopped.

Note to Physician

None of the components are acutely toxic by ingestion, nor are they absorbed through the skin. Extensive or prolonged skin contact may cause dermatitis.

5. Fire Fighting Measures

Flash Point: Not Applicable (N/Appl.)

Autoignition Point: N/Appl.

Flammability Class: N/Appl.

Lower Explosive Limit: N/Appl.

Upper Explosive Limit: N/Appl.

Fire and Explosion Hazards

In finely-divided form, these products may ignite when exposed to flame or by reaction with incompatible materials (see Section #10). If present in a fire or explosion, they may emit fumes of the constituent metals or metal oxides.

Extinguishing Media

Use dry chemical. Do not use water.

Fire Fighting Instructions

If fighting a fire in which these products are present, wear a self-contained breathing apparatus with full facepiece operated in pressure-demand or other

positive pressure mode.

6. Accidental Release Measures

If a finely-divided form of product is spilled, clean up spillage so as to minimize dispersion of dust. Wet sweeping or vacuuming using HEPA filtration are recommended.

7. Handling and Storage

Handling Precautions

No special handling precautions are required.

Storage Precautions

Do not store in proximity to incompatible materials (see Section #10).

Work/Hygienic Practices

To minimize ingestion, wash hands and face before eating, drinking, applying cosmetics, or using tobacco.

8. Exposure Controls/Personal Protection

Engineering Controls

Use appropriate ventilation (e.g., dilution, local exhaust) adequate to maintain concentrations of all components to within their applicable standards.

Eye/Face Protection

Wear eye protection adequate to prevent eye contact with finely-divided product and injury from the hazards of brazing. Plastic-frame spectacles with side shields and filter lenses (shade #3/#4) are recommended.

Skin Protection

Wear appropriate protective gloves and clothing to prevent skin injuries from the hazards of brazing and/or for prolonged or repeated contact with finely-divided forms of product. Avoid flammable fabrics.

Respiratory Protection

If an exposure level exceeds an applicable exposure standard, use a NIOSH-approved respirator having a configuration (type of facepiece, filter media, assigned protection factor, etc.) appropriate to the concentration of the contaminant(s) generated. For guidance on selection and use of respirators, consult American National Standard Z88.2 (ANSI, New York, NY 10036 USA).

Ingredient(s) - Exposure Limits

Copper

ACGIH TLVs: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dusts and mists)

OSHA PELs: 0.1 mg/m³ TWA (fume); 1 mg/m³ TWA (dusts and mists)

Phosphorus

No applicable ACGIH TLV(s)

No applicable OSHA PEL(s)

9. Physical and Chemical Properties

Appearance: copper-yellow alloys, various physical forms
Odor: No odor
Chemical Type: alloy
Physical State: solid
Melting Point: 1115-1225oF./600-665oC.
Specific Gravity: 9.0-9.9
Solubility: Insoluble

Other physical properties (odor threshold, evaporation rate, vapor pressure, vapor density, evaporation rate, boiling point, freezing point, pH, oil-water distribution coefficient, percent volatiles, percent VOCs) are not applicable to these products.

10. Stability and Reactivity

Stability: stable
Hazardous Polymerization: will not occur

Conditions to Avoid

Copper can form an unstable acetylide if in contact with acetylene gas.

Incompatible Materials

Strong oxidizers; ammonia; azides; bromates, chlorates, and iodates of alkali and alkali earth metals; halogens; alkaline hydroxides.

Hazardous Decomposition Products

Heating to elevated temperatures may copper and phosphorus oxide fumes.

11. Toxicological Information

Carcinogenicity

The products contain no chemicals classified as potential or demonstrated carcinogens by IARC, NTP, or OSHA.

Conditions Aggravated by Overexposure

Pre-existing pulmonary diseases (e.g., bronchitis, asthma) may be aggravated by inhalation exposure, particularly as fume. Chronic exposure by inhalation and/or ingestion may aggravate pre-existing diseases of the liver, kidneys, gastrointestinal system, and nervous system.

Ingredient(s) - Toxicological Data

Copper

LD50: No data available LC50: No data available

Phosphorus

LD50: >15,000 mg/kg (oral/rat) LC50: 4,300 mg/m3 for 1 hr (rat)

12. Ecological Information

In their intended manner of use, these products should not be released into the environment, and adverse effects on ecosystems are not anticipated under

recommended conditions of use, storage, and disposal.

13. Disposal Considerations

Dispose of unused or unusable product in accordance with applicable Federal, State/Provincial, and local regulations.

14. Transport Information

These products are not Hazardous Substances or Dangerous Goods per USDOT, TDG (Canada), IATA, or IMO regulations.

15. Regulatory Information

----- TSCA Information

All components of these products are listed on the EPA's TSCA registry.

SARA Hazard Classes

Acute Health Hazard; Chronic Health Hazard

Ingredient(s) - U.S. Regulatory Information

These products contain these components subject to the requirements of Section 313 of the Emergency Preparedness and Community Right-to-Know Act (EPCRA) of 1986 and of 40CFR, Part 372:

1. Copper (CASRN 7440-50-8)
2. Phosphorus (CASRN 7723-14-0)

Canadian Regulatory Information

All components of these products are on either the Domestic Substances List (DSL) or the Nondomestic Substances List (NDSL).

WHMIS Class(es) and Division(s): D2B

Components on Ingredients Disclosure List:

1. Copper, elemental (CASRN 7440-50-8)
2. Phosphorus (CASRN 7723-14-0)

16. Other/Revision Information

----- HMIS Ratings

Health - 2* Flammability - 1 Physical Hazard - 0 PPE - see Note

Note: Lucas-Milhaupt, Inc. and Lucas-Milhaupt Toronto recommend use of protective eyewear and gloves (Personal Protection Index "B") as standard PPE. HMIS recommends that its ratings be used only in conjunction with a fully implemented HMIS program, and that specific PPE codes be created by the user, who is familiar with the actual conditions under which the product is used. We cannot anticipate every condition of the product's use, and it is the user's responsibility to evaluate the hazards pertinent to its specific operations, and to determine the specific PPE required.

NFPA Ratings

Health - 2 Flammability - 1 Reactivity - 0

Revision Information

This SDS supersedes a previous SDS dated 05/03/2010.

Disclaimer

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Lucas Milhaupt, Inc.

Lucas-Milhaupt Toronto