

# Copper-Phosphorus Brazing Alloys

## Material Safety Data Sheet

### 1. Product And Company Identification

#### Supplier

Lucas Milhaupt, Inc. Handy & Harman of Canada, Ltd.  
5656 South Pennsylvania Avenue 290 Carlingview Drive  
Cudahy, WI 53110 USA Rexdale, ON M9W5G1, Canada

#### Supplier Emergency Contacts

Lucas-Milhaupt, Inc.: 414-769-6000  
Handy & Harman of Canada, Limited: 416-675-1860  
Chemtrec: 1-800-424-9300

#### Manufacturer

Lucas-Milhaupt, Inc.  
5656 South Pennsylvania Avenue  
Cudahy, WI 53110 USA  
Telephone: 414-769-6000; Fax: 414-769-1093

#### Manufacturer Emergency Contacts & Phone Number

Chemtrec: 800-424-9300

Issue Date: 05/03/2010  
Product Name: Copper-Phosphorus Brazing Alloys  
MSDS Number: 78

#### Product Codes

This MSDS is applicable to the following products: Fos-Flo 5 (69-050);  
Fos-Flo 6 (69-060); Fos-Flo 7 (69-070); 69-080; and 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

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

#### Ingestion Hazards

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

#### Inhalation Hazards

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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

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

##### Skin

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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

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

##### Inhalation

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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

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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

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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

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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

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Use dry chemical. Do not use water.

#### Fire Fighting Instructions

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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

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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

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#### Handling Precautions

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No special handling precautions are required.

#### Storage Precautions

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

#### Work/Hygienic Practices

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

### 8. Exposure Controls/Personal Protection

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#### Engineering Controls

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

#### Eye/Face Protection

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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

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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

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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

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##### Copper

ACGIH TLVs: 0.2 mg/m<sup>3</sup> TWA (fume); 1 mg/m<sup>3</sup> TWA (dusts and mists)  
OSHA PELs: 0.1 mg/m<sup>3</sup> TWA (fume); 1 mg/m<sup>3</sup> TWA (dusts and mists)

##### Phosphorus

No applicable ACGIH TLV(s)                      No applicable OSHA PEL(s)

#### 9. Physical And Chemical Properties

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Appearance: Copper-yellow alloys in various physical forms

Chemical Type: alloy

Physical State: solid

Melting Point: 1115-1225F./600-665C.

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

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Stability: stable

Hazardous Polymerization: will not occur

##### Conditions To Avoid (Stability)

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

##### Incompatible Materials

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

##### Hazardous Decomposition Products

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Heating to elevated temperatures may copper and phosphorus oxide fumes.

## 11. Toxicological Information

### ----- Chronic/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

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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

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

## 14. Transport Information

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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 -----

#### Copper

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

#### Phosphorus

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

Canadian Regulatory Information

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All components of these products are on the Domestic Substances List

WHMIS Class(es) and Division(s): none applicable

Components on Ingredients Disclosure List:

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

16. Other/Revision Information

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HMIS Ratings

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

Note: Lucas-Milhaupt, Inc. and Handy & Harman of Canada, Ltd. recommend use of safety glasses and protective 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

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Health - 2      Flammability - 1      Reactivity - 0

This MSDS supersedes a previous MSDS dated 05/01/2007.

Disclaimer

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