

Copper-Phosphorus-Tin Alloys

Safety Data Sheet

1. Product and Company Identification

Manufacturer

Lucas Milhaupt, Inc.
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www.lucasmilhaupt.com

Emergency Phone Number

Chemtrec: 800-424-9300

SDS Number: 240

Product Codes: 69-014, 69-069, 70-867 (Blockade)

Product Use(s): Alloys for brazing and other metallurgical processes

2. Hazards Identification

Classification(s): none applicable

Label Symbol(s): none applicable

Label Signal Word(s): none applicable

Label Hazard Statement(s): none applicable

Label Precautionary Statement(s)

The acute toxicities of 93-94% of the product's ingredients are unknown.

3. Composition/Information on Ingredients

| Ingredient | CAS Number | % | Impurities |
|------------|------------|-------|------------|
| Copper | 7440-50-8 | 86-88 | None known |
| Phosphorus | 7723-14-0 | 6-7 | None known |
| Silver | 7440-31-5 | 6-8 | None known |

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. Do not give anything by mouth to an unconscious or convulsive person.

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 or Poison Control Center

None of the components are acutely toxic by ingestion, nor are they absorbed through the skin.

5. Fire Fighting Measures

Fire and Explosion Hazards

These products are non-flammable and non-explosive. If present in a fire or explosion, they may emit fumes of the constituent metals and/or phosphorus pentoxide.

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

Methods and Materials

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

Personal Precautions

Avoid contact with skin, eyes, and mucous membranes.

Environmental Precautions

Prevent spills from entering sewers or contaminating soil.

7. Handling and Storage

Handling Precautions

No special handling precautions are required.

Work and Hygiene Practices

To prevent ingestion following use of the product, wash hands and face before eating, drinking, applying cosmetics, or using tobacco. Remove contaminated clothing or protective equipment before entering eating/drinking areas.

Storage Precautions

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

8. Exposure Controls and Personal Protection

Ingredients - 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)

Tin

ACGIH TLV: 2 mg/m3 TWA

OSHA PEL: 2 mg/m3 TWA

Ingredients - Biological Limits

Copper

No ACGIH BEI(s) or other biological limit(s)

Phosphorus

No ACGIH BEI(s) or other biological limit(s)

Tin

No ACGIH BEI(s) or other biological limit(s)

Engineering Controls

Use dilution or local exhaust ventilation adequate to maintain concentrations of all components and their byproducts to within their applicable standards.

Eye/Face Protection

Wear eye protection adequate to prevent eye contact with the product and injury if the product is used with a flame. Plastic-frame spectacles with side shields and filter lenses (shade #3/#4) are recommended.

Skin Protection

Wear protective gloves and clothing to prevent skin injuries if the product is used with a flame and/or for prolonged or repeated contact with finely-divided forms of product. Avoid flammable fabrics.

Respiratory Protection

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

9. Physical and Chemical Properties

Appearance: Copper-colored alloys, various forms

Odor: none

Odor threshold: not applicable

pH: not applicable

Freezing point: not applicable

Melting Point: 1115-1225F./600-665C.
Boiling point/boiling range: not determined
Flash Point: not applicable
Evaporation Rate: not applicable
Flammability Class: not applicable
Lower Explosive Limit: not applicable
Upper Explosive Limit: not applicable
Vapor pressure: not applicable
Vapor density: not applicable
Relative density (H2O): 9.0-9.9
Solubility (H2O): insoluble
Oil-water partition coefficient: not applicable
Autoignition Point: not applicable
Decomposition temperature: not applicable
Viscosity: not applicable

10. Stability and Reactivity

Reactivity: none reasonably foreseeable
Stability: stable
Hazardous Polymerization: will not occur
Risk of Dangerous Reactions: Silver and copper can form unstable acetylides in contact with acetylene gas.

Incompatible Materials

Acetylene; ammonium nitrate; halogens; ethylene oxide; chlorine trifluoride; oxygen difluoride; hydrazine mononitrate; hydrazoic acid; hydrogen sulfide; peroxides; azides; bromates, chlorates, and iodates of alkali metals and alkali earth metals; bromine trifluoride; cupric nitrate; sulfur.

Hazardous Decomposition Products

Heating to elevated temperatures may liberate fumes of the constituent metals and/or phosphorus pentoxide.

11. Toxicological Information

This product has not been tested for toxicology by the manufacturer.

Ingredients - 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)

Tin

LD50: No data available

LC50: No data available

Primary Routes(s) of Entry

Ingestion; inhalation.

Eye Hazards

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

Skin Hazards

Skin contact with these products, particularly in finely-divided forms, may

cause irritation, discoloration, and/or contact dermatitis.

Ingestion Hazards

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

Inhalation Hazards

Inhalation of toxicologically-significant quantities of the components is unlikely when the product is used in accordance with instructions and specified protective measures (see Section #8). When phosphorus is overheated in air, it is converted to phosphorus pentoxide, which is corrosive and irritating to eyes, nose, throat, and mucous membranes.

Symptoms Related to Overexposure

Pre-existing pulmonary diseases (e.g., bronchitis, asthma) may be aggravated by inhalation overexposure, particularly as fume.

Delayed Effects from Long Term Overexposure

Chronic overexposure by inhalation and/or ingestion may aggravate pre-existing diseases of the liver, kidneys, and gastrointestinal system.

Carcinogenicity

The product contains no chemicals classified as potential or demonstrated carcinogens by IARC, NTP, or OSHA.

Germ Cell Mutagenicity

The product contains no chemicals determined to be germ cell mutagens.

Reproductive Effects

The product contains no chemicals determined to be damaging to fertility or the unborn child.

Acute Toxicity Estimates

LD50 (oral): >15,000 mg/kg
LD50 (dermal): no data available
LC50: >4,300 mg/m3

Interactive Effects of Components: no data available

12. Ecological Information

No ecological data is available for the product. Available ecological data for the components is as follows:

Copper

No data available for Aquatic Toxicity to Fish and Invertebrates, Aquatic Toxicity to Plants and Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, Mobility in Soil.

Phosphorus

No data available for Aquatic Toxicity to Fish and Invertebrates, Aquatic Toxicity to Plants and Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, Mobility in Soil.

Tin

No data available for Aquatic Toxicity to Fish and Invertebrates, Aquatic Toxicity to Plants and Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, Mobility in Soil.

Ozone Depletion Potential: This product contains no ingredients listed in the Annexes to the Montréal Protocol on Substances that Deplete the Ozone Layer.

13. Disposal Considerations

Do not discharge waste product into sanitary or storm sewers or allow it to contaminate soil. Consult applicable Federal, State/ Provincial, and local regulations.

14. Transport Information

Transport is not regulated by USDOT, TDG (Canada), IATA, or IMO.

15. Regulatory Information

United States Regulatory Information

All components of this product are listed on the EPA's TSCA inventory.

SARA Hazard Classes: Acute Health Hazard; Chronic Health Hazard

SARA Section 313 Notification: This product contains these ingredients in concentrations > 1% (for carcinogens 0.1%) regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372.

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

Canadian Regulatory Information

All components of these products are listed 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)
3. Tin, elemental (CASRN 7440-31-5)

This product has been classified according to the hazard criteria of the CPR and this SDS contains all of the information required by the CPR.

16. Other Information

HMIS Ratings

Health - 2* (moderate chronic hazard)
Flammability - 1 (slight hazard)
Physical Hazard - 0 (minimal hazard)

PPE - see Note

Note: Lucas-Milhaupt, Inc. recommends 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

Preparation Information

Date of Preparation: 7 July 2014

Date of Prior SDS: 30 July 2012

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Lucas-Milhaupt, Inc.