

1. Product and Company Identification

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Manufacturer

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Lucas-Milhaupt, Inc.  
5656 South Pennsylvania Avenue  
Cudahy, WI 53110 USA  
Telephone: 414-769-6000  
www.lucasmilhaupt.com

Emergency Phone Number

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Chemtrec: 800-424-9300

SDS Number: 471  
Product Code: 43-620  
Product Use(s): Alloy-flux binder brazing paste

2. Hazards Identification

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Classifications

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Flammable Liquids: Hazard Category 3  
Skin Sensitization: Hazard Category 1B  
Carcinogenicity: Hazard Category 2

Label Symbol(s): Flame; Health Hazard, Exclamation Point

Label Signal Word(s): Warning

Label Hazard Statement(s)

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Flammable liquid and vapor.  
May cause an allergic skin reaction.  
Suspected of causing cancer by inhalation.

Label Precautionary Statement(s)

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Do not handle until all safety precautions have been read and understood.  
Obtain special instructions before use.  
Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Take precautionary measures against static discharge.  
Use only non-sparking tools.  
Avoid breathing dust or fumes.  
Wear protective gloves and eye/face protection.  
If skin irritation or rash occurs, get medical advice or attention.  
If exposed or concerned, get medical advice/attention.

IF ON SKIN: Take off immediately all contaminated clothing. Wash skin with plenty of water. Wash contaminated clothing before reuse. Contaminated work clothing must not be allowed out of the workplace.

IN CASE OF FIRE: Use foam, dry chemical, or carbon dioxide to extinguish.



Store locked up in a well-ventilated place. Keep cool.  
Dispose of contents/container in accordance with applicable regulations.  
The acute toxicities of 68-91% of the product's ingredients are unknown.

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

### 3. Composition/Information on Ingredients

Ingredient	CAS Number	%	Impurities
Copper	7440-50-8	65-76	None known
Hydrotreated heavy naphtha	64742-48-9	1-2	None known
Nickel	7440-02-0	1-11	None known
Phosphorus	7723-14-0	4-9	None known
Tin	7440-31-5	3-15	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

Do not induce vomiting unless so instructed by medical authority. If subject is 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. Ingestion of the product is unlikely, but may cause nausea and gastrointestinal pain. Do not induce vomiting, as this may aspirate the hydrocarbon component into the lungs.

### 5. Fire Fighting Measures

#### Fire and Explosion Hazards

This product may ignite if exposed to a source of ignition at temperatures above its flash point or to temperatures above its autoignition point. If present in a fire or explosion, it may emit fumes of the constituent metals or their oxides, phosphorus pentoxide, smoke, and carbon monoxide.

#### Extinguishing Media

Use foam, dry chemical, or carbon dioxide. Do not use water.

#### Fire Fighting Instructions

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If fighting a fire in which this product is 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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##### Methods and Materials

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Clean up spillage so as to minimize dispersion of product.

##### Personal Precautions

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Avoid contact with skin, eyes, and mucous membranes.

##### Environmental Precautions

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Prevent spills from entering sewers or contaminating soil.

#### 7. Handling and Storage

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##### Handling Precautions

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No special handling precautions are required.

##### Work and Hygiene Practices

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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

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Store in a cool place away from sources of ignition and incompatible materials (see Section #10).

#### 8. Exposure Controls and Personal Protection

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##### Ingredients - 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)

###### Hydrotreated heavy naphtha

No specific ACGIH TLV(s) OSHA PEL: 500 ppm TWA  
Manufacturer's Recommended OEL: 1,200 mg/m<sup>3</sup> TWA

###### Nickel

ACGIH TLV: 1.5 mg/m<sup>3</sup> TWA OSHA PEL: 1 mg/m<sup>3</sup> TWA

###### Phosphorus

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

###### Tin

ACGIH TLV: 2 mg/m<sup>3</sup> TWA OSHA PEL: 2 mg/m<sup>3</sup> TWA

##### Ingredients - Biological Limits

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###### Copper

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

Hydrotreated heavy naphtha

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

Nickel

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

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

#### Eye/Face Protection

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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 are recommended.

#### Skin Protection

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Wear protective gloves and clothing to prevent skin injuries if the products are used with a flame and/or for prolonged or repeated contact with the product. Avoid flammable fabrics.

#### Respiratory Protection

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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

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Appearance: gray slurry

Odor: mineral spirits

Odor threshold: not determined

pH: not applicable

Melting Point: not determined

Freezing point: not applicable

Boiling point: >354F./179C.

Boiling range: not determined

Flash Point: >129F./54C.

Autoignition Point: approx. 635F./335C.

Flammability Class: II

Lower/Upper Explosive Limits: approx. 0.7%/5.4%

Vapor pressure: <1 mm. Hg @ 20C.

Vapor density: not determined

Evaporation Rate: <0.1 (n-butyl acetate = 1.0)

Relative density (H<sub>2</sub>O): not determined

Solubility (H<sub>2</sub>O): insoluble

Oil-water partition coefficient: not determined

Decomposition temperature: not determined

Viscosity: not determined

### 10. Stability and Reactivity

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Reactivity: none reasonably foreseeable

Stability: stable

Hazardous Polymerization: will not occur

Risk of Dangerous Reactions: copper can form an unstable acetylde if in contact with acetylene gas.

#### Incompatible Materials

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Acetylene; strong oxidizing agents; 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; hydrazine; dioxane; performic acid; phosphorus; sulfur; selenium; titanium plus potassium perchlorate; bromine trifluoride; cupric nitrate.

#### Hazardous Decomposition Products

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Heating to elevated temperatures may liberate metal/metal oxide fumes, phosphorus pentoxide, smoke, carbon monoxide, and irritant decomposition byproducts.

#### 11. Toxicological Information

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

#### Ingredients - Toxicological Data

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##### Copper

LD50: No data available LC50: No data available

##### Hydrotreated heavy naphtha

LD50: 10,000 mg/kg (oral/rat) LC50: No data available

##### Nickel

LD50: 5,000 mg/kg (oral/rat) LC50: No data available

##### Phosphorus

LD50: No data available LC50: No data available

##### Tin

LD50: No data available LC50: No data available

#### Primary Routes(s) of Entry

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Inhalation; ingestion.

#### Eye Hazards

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Eye contact with this product may cause irritation, conjunctivitis, and/or ulceration of the cornea.

#### Skin Hazards

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Skin contact with this product may cause irritation, discoloration, and contact and/or allergic dermatitis.

#### Ingestion Hazards

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Ingestion of this product may cause nausea and gastrointestinal irritation.

#### Inhalation Hazards

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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). If the product is heated to elevated temperatures, vapors of the hydrotreated heavy naphtha may irritate the eyes, nose, throat, and upper respiratory tract.

#### Symptoms Related to Overexposure

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

#### Delayed Effects from Long Term Overexposure

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Ingestion may aggravate pre-existing diseases of the liver and kidneys.

#### Carcinogenicity

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Nickel is classified as a potential human carcinogen by IARC ("2b", possibly carcinogenic to humans) and NTP ("K", known to be a human carcinogen). Exposure to some compounds of nickel has been shown to increase the risk of various cancers, although these effects have not been demonstrated among individuals occupationally exposed only to nickel metal. ACGIH classifies nickel metal as "A5" (not suspected as a human carcinogen).

#### Germ Cell Mutagenicity

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

#### Reproductive Effects

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

#### Acute Toxicity Estimates

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LD50 (oral): no data available  
LD50 (dermal): no data available  
LC50: no data available

Interactive Effects of Components: no data available

#### 12. Ecological Information

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

##### Copper

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

##### Hydrotreated Heavy Naphtha

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

##### Nickel

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Aquatic Toxicity to Fish: LC50 >100 mg/l. for 4 d. (Freshwater fish)  
Aquatic Toxicity to Invertebrates: EC50 >100 mg/l. for 48 h. (Daphnia)  
Aquatic Toxicity to Plants: EC50 = 0.18 mg/l. for 3 d. (Algae)  
No data available for Aquatic Toxicity to Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, or Mobility in Soil.

##### Phosphorus

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

Tin

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No data available for Aquatic Toxicity to Fish, Invertebrates, Plants, or Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, or 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

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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

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UN Number: 1268  
Proper Shipping Name: Petroleum Distillates, n.o.s., mixture  
Hazard Class(es): 3  
Packing Group: III  
Environmental Hazards: not applicable  
Transport in Bulk: not applicable  
Special Precautions: not applicable

When transported solely by land within or to/from the United States and Canada, this product is classified as a Combustible Liquid.

### 15. Regulatory Information

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United States Regulatory Information

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

SARA Hazard Classes: Acute Health Hazard; Chronic Health Hazard; Fire Hazard

SARA Section 313 Notification

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This product contains these components at concentrations >1% (>0.1% for carcinogens) subject to 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. Nickel (CASRN 7440-02-0)
3. Phosphorus (CASRN 7723-14-0)

Ingredients - State Regulation

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Nickel (CASRN 7440-02-0) - California Proposition 65 listed chemical

Canadian Regulatory Information

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All components of this product are listed on either the Domestic Substances List (DSL) or the Nondomestic Substances List (NDSL).

WHMIS Class(es) and Division(s): B3, D2A, D2B

Component(s) on Ingredients Disclosure List:

1. Copper, elemental (CASRN 7440-50-8)
2. Nickel, elemental (CASRN 7440-02-0)
3. Phosphorus (CASRN 7723-14-0)
4. 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

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HMIS Ratings (Legend)

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Health - 2\* (moderate chronic hazard)  
Flammability - 2 (moderate 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

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Health - 2      Flammability - 2      Reactivity - 0

Preparation Information

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Date of Preparation: 21 November 2014  
Date of Prior SDS: 23 August 2013

Disclaimer

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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.