

Safety Data Sheet

1. Product and Company Identification

Manufacturer

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

Emergency Phone Number

Chemtrec: 800-424-9300

SDS Number: 473
Product Codes: 83-610; 83-611
Product Use(s): Alloy-flux binder brazing paste

2. Hazards Identification

Classifications

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)

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

Label Precautionary Statement(s)

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 66-88% 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	64-74	None known
Hydrotreated heavy naphtha	64742-48-9	6-10	None known
Nickel	7440-02-0	1-10	None known
Phosphorus	7723-14-0	4-8	None known
Potassium fluoborate	14075-53-7	1-2	None known
Tin	7440-31-5	2-14	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, fluorides, and carbon monoxide.

Extinguishing Media

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

Fire Fighting Instructions

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

Methods and Materials

Clean up spillage so as to minimize dispersion of product.

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

Store in a cool place away from sources of ignition and 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)

Hydrotreated heavy naphtha

No specific ACGIH TLV(s) OSHA PEL: 500 ppm TWA

Manufacturer's Recommended OEL: 1,200 mg/m³ TWA

Nickel

ACGIH TLV: 1.5 mg/m³ TWA OSHA PEL: 1 mg/m³ TWA

Phosphorus

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

Potassium fluoborate

ACGIH TLV: 2.5 mg/m³ TWA (as F-) OSHA PEL: 2.5 mg/m³ TWA (as F-)

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)

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)

Potassium fluoborate

ACGIH BEIs for fluoride in urine: 2 mg/l. prior to shift
3 mg/l. end of shift

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 are recommended.

Skin Protection

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

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: gray slurry

Odor: mineral spirits

Odor threshold: not determined

pH: not applicable

Melting Point: not determined

Freezing point: not applicable

Boiling point: >311F./155C.

Boiling range: not determined

Flash Point: >104F./40C.

Autoignition Point: approx. 689F./365C.

Flammability Class: II

Lower/Upper Explosive Limits: approx. 0.7%/5.6%

Vapor pressure: <3 mm. Hg @ 20C.

Vapor density: not determined

Evaporation Rate: <0.3 (n-butyl acetate = 1.0)

Relative density (H2O): not determined

Solubility (H2O): insoluble

Oil-water partition coefficient: not determined

Decomposition temperature: not determined

Viscosity: not determined

10. Stability and Reactivity

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

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

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

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

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

Potassium fluoborate

LD50: >5,000 mg/kg (oral/rat)

LC50: No data available

Tin

LD50: No data available

LC50: No data available

Primary Routes(s) of Entry

Inhalation; ingestion.

Eye Hazards

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

Skin Hazards

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

Ingestion Hazards

Ingestion of this product may cause nausea 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). 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

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

Delayed Effects from Long Term Overexposure

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

Carcinogenicity

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

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 to the unborn child.

Acute Toxicity Estimates

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

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, Invertebrates, Plants, or Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, or Mobility in Soil.

Hydrotreated Heavy Naphtha

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

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

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.

Potassium Fluoborate

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

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

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

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

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; Fire Hazard

SARA Section 313 Notification

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

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

Canadian Regulatory Information

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. Fluoride compounds, inorganic, n.o.s.
3. Nickel, elemental (CASRN 7440-02-0)
4. Phosphorus (CASRN 7723-14-0)
5. 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 (Legend)

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

Health - 2 Flammability - 2 Reactivity - 0

Preparation Information

Date of Preparation: 21 November 2014

Date of Prior SDS: 23 August 2013

Disclaimer

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Lucas-Milhaupt, Inc.