

Handy Liquid Flux

Safety Data Sheet

1. Product and Company Identification

Manufacturer

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

Emergency Phone Number

Chemtrec: 800-424-9300

SDS Number: 20

Product Codes: 36-600 (1 Gallon Handy Liquid Flux), 36-700 (1 Quart Handy Liquid Flux), 36-800 (1 Pint Handy Liquid Flux)

Product Use(s): Flux for metal brazing

2. Hazards Identification

Classification(s)

Reproductive Toxicity: Hazard Category 2

Label Symbol(s): Health Hazard

Label Signal Word(s): Warning

Label Hazard Statement(s)

Suspected of damaging fertility or the unborn child.

Label Precautionary Statement(s)

Do not handle until all safety precautions have been read and understood.
Obtain special instructions before using. Store locked up.
Wear protective gloves and eye/face protection.
If exposed or concerned, get medical advice or attention.
Dispose of contents/container in accordance with applicable regulations.
The acute toxicities of 75-95% of the product's ingredients are unknown.



3. Composition/Information on Ingredients

Ingredient	CAS Number	%	Impurities
Boric acid	10043-35-3	2-10	None known
Sodium fluoborate	13755-29-8	2-10	None known
Sodium tetraborate	1303-96-4	1-5	None known

4. First Aid Measures

Eyes

Flush affected areas with water for at least 15 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 the subject is conscious, give 2-4 cups of milk or water. Seek immediate medical assistance. Do not attempt to 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

Depending upon the dose, ingestion of the component sodium fluoborate may be harmful. Its concentration in the product is <100 gm/kg. Treat fluoride intoxication symptomatically. No components are readily absorbed through the skin, although contact may cause skin irritation.

5. Fire Fighting Measures

Extinguishing Media

Not applicable.

Fire and Explosion Hazards

This product is non-flammable and non-explosive. If it is present in a fire or explosion, potential decomposition byproducts may include boron oxide, Sodium oxide, and/or fluorides.

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

Isolate spilled product and transfer to impervious containers.

Personal Precautions

Avoid contact with skin, eyes, and mucous membranes. Wear appropriate protective equipment (e.g., gloves, chemical goggles) during cleanup.

Environmental Precautions

Prevent spills from entering sewers or contaminating soil.

7. Handling and Storage

Handling Precautions

Avoid contact with skin and clothing, using protective equipment as needed.

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 away from incompatible materials (see Section #10).

8. Exposure Controls and Personal Protection

Ingredients - Exposure Limits

Boric acid

ACGIH TLVs: 2 mg/m³ TWA; 6 mg/m³ STEL No OSHA PEL(s)

Sodium fluoborate

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

Sodium tetraborate

ACGIH TLVs: 2 mg/m³ TWA; 6 mg/m³ STEL No OSHA PEL(s)

Ingredients - Biological Limits

Boric acid

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

Sodium fluoborate

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

Sodium tetraborate

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 from the hazards of brazing. 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 from the hazards of brazing and/or for prolonged contact with the product. Avoid flammable fabrics.

Respiratory Protection

If an exposure level 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: light blue liquid
Odor: no odor
Odor threshold: not applicable
pH: approx. 6.5
Melting point: not applicable
Freezing point: not applicable
Boiling point/boiling range: >212F./100C.
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): approx. 1.05
Solubility (H2O): soluble
Oil-water partition coefficient: not applicable
Autoignition Point: not applicable
Decomposition temperature: not determined
Viscosity: not applicable

10. Stability and Reactivity

Reactivity: none reasonably foreseeable
Stability: stable
Hazardous Polymerization: will not occur
Possible Hazardous Reactions: Some components may decompose at elevated temperatures.

Incompatible Materials

Acetic anhydride; alkali and alkali earth metals; zirconium; platinum; bromine trifluoride.

Potential Hazardous Decomposition Products

Boron oxide, sodium hydroxide, and/or fluorides.

11. Toxicological Information

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

Ingredients - Toxicological Data

Boric acid
LD50: 2,660 mg/kg (oral/rat) LC50: No data available
Sodium fluoborate
LD50: No data available LC50: No data available
Sodium tetraborate
LD50: 2,660 mg/kg (oral/rat) LC50: No data available

Primary Routes(s) of Entry

Ingestion; inhalation.

Eye Hazards

This product may cause eye irritation.

Skin Hazards

This product can produce irritation, particularly on abraded skin.
Prolonged exposure can cause dermatitis.

Ingestion Hazards

Ingestion of this product may cause one or more of the following symptoms and effects: nausea, vomiting, cramps, gastrointestinal irritation, abdominal pain, convulsions, and tachycardia.

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).

Symptoms Related to Overexposure

Irritation to the nose, throat, and respiratory tract; cough, nose bleeds, nausea, vomiting, chest tightness, chills, fever, pneumonitis, tearing, and pulmonary edema.

Delayed Effects from Long Term Overexposure

Liver and kidney damage, and/or aggravation of pre-existing diseases of the liver, kidneys, and nervous and gastrointestinal systems.

Carcinogenicity

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

Germ Cell Mutagenicity

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

Reproductive Effects

In experimental studies, boric acid has been found to cause decreased sperm production and testicular effects in male rats, and developmental effects in fetuses of exposed female mice. No reproductive effects in humans from occupational exposure to boric acid have been established.

Acute Toxicity Estimates

LD50 (oral): >3,500 mg/kg
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. Ecological data for the components is as follows:

Boric Acid

Prolonged toxicity to fish: 1,020 mg/liter for 3 d. (Freshwater fish)
Prolonged toxicity to fish: 1,260 mg/liter for 5 d. (Freshwater fish)
Prolonged toxicity to fish: 890 mg/liter for 9 d. (Freshwater fish)
EC50: 658-875 mg/liter for 48 hrs. (Daphnia)
Depressed growth rate: 290 mg/liter (Algae)
No data available for Toxicity to Terrestrial Organisms, Persistence and
Degradability, Bioaccumulation Potential, or Mobility in Soil.

Sodium Fluoborate

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

Sodium Tetraborate

No data available for Aquatic Toxicity to Fish, Invertebrates, Plants,
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. Disposal of products containing fluorides and/or borates
may be subject to restrictions. 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 no 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.

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): D2A, D2B

Components on Ingredients Disclosure List:

1. Boric acid (CASRN 10043-35-3)
2. Fluoride compounds, inorganic, n.o.s.

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 - 0 (minimal 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 - 0 Reactivity - 0

Preparation Information -----

Date of Preparation: 2 July 2014
Date of Prior SDS: 25 April 2012

Disclaimer -----

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Lucas-Milhaupt, Inc.