Black Flux

Safety Data Sheet

1. Product and Company Identification

Supplier and 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: 803

Product Code: 73-515 (5 Lb Black Ultra Flux)

Product Use(s): Flux for metal brazing

2. Hazards Identification

Classification(s)

Acute Toxicity, Oral: Hazard Category 4
Skin Corrosion: Hazard Category 1C
Severe Eye Damage: Hazard Category 1
Reproductive Toxicity: Hazard Category 2

Label Symbol(s): Health Hazard, Exclamation Point, Corrosive

Label Signal Word(s): Danger

Label Hazard Statement(s)

Harmful if swallowed.
Causes severe skin burns and eye damage.
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.
Wear protective gloves, protective clothing, and eye/face protection.
Wash hands thoroughly after handling. Store locked up.
Do not eat, drink, or smoke when using this product.
If exposed or concerned, get medical advice or attention.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
Call a doctor or Poison Control Center if you feel unwell.

IF ON SKIN: Take off immediately all contaminated clothing.
Rinse skin with water. Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for at least 15 minutes.
Remove contact lenses, if easy to do. Continue rinsing. Immediately call a doctor or Poison Control Center.

Dispose of contents/container in accordance with applicable regulations.

3. Composition/Information on Ingredients

Ingredient Name	CAS Number(s)	%	Impurities
Boric acid	10043-35-3	20-30	None known
Boron	7440-42-8	1-5	None known
Potassium bifluoride	7789-29-9	20-30	None known
Potassium pentaborate	12229-13-9	1-5	None known
Potassium tetraborate	1332-77-0	30-40	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. 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

Depending upon the dose, ingestion of the component potassium bifluoride may be harmful or toxic. Its concentration in the product is <300 gm/kg. Treat fluoride intoxication symptomatically. No components are readily absorbed through the skin, although skin injury may occur from prolonged contact.

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, potassium 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 in a cool location 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)
Boron		
	No ACGIH TLV(s)	No OSHA PEL(s)
Potassium bifluoride		
	ACGIH TLV: 2.5 mg/m3 TWA (as F-)	OSHA PEL: 2.5 mg/m3 TWA (as F-)
Potassium pentaborate		
	No ACGIH TLV(s)	No OSHA PEL(s)
Potassium tetraborate		
	No ACGIH TLV(s)	No OSHA PEL(s)

Ingredients – Biological Limits

Boric acid
    No ACGIH BEI(s) or other biological limit(s)
Boron
    No ACGIH BEI(s) or other biological limit(s)
Potassium fluoride
    ACGIH BEIs for fluoride in urine: 2 mg/l. prior to shift
                                      3 mg/l. end of shift
Potassium pentaborate

No ACGIH BEI(s) or other biological limit(s)
Potassium 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 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 1003, USA).

9. Physical and Chemical Properties

Appearance: black paste
Odor: no odor
Odor threshold: not applicable
pH: 8-9
Melting point: approx. 792F./422C.
Freezing point: not applicable
Boiling point/boiling range: not applicable
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. 1.5
Solubility (H2O): soluble
Oil-water partition coefficient: not determined
Autoignition Point: not applicable
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: none reasonably foreseeable

Possible Hazardous Reactions

Some components of the product may decompose at elevated temperatures.

Incompatible Materials

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

Potential Hazardous Decomposition Products

Boron oxide, potassium oxide, and/or fluorides.

11. Toxicological Information

Toxicological testing has not been performed by the manufacturer/supplier. 60-78% of the product consists of ingredient(s) of unknown acute toxicity.

Ingredients - Toxicological Data

Boric acid
    LD50: 2,660 mg/kg (oral/rat) LC50: No data available
Boron
    LD50: 650 mg/kg (oral/rat) LC50: No data available
Potassium bifluoride
    LD50: no data available LC50: No data available
Potassium pentaborate
    LD50: 2,800 mg/kg (oral/rat) LC50: No data available
Potassium tetraborate
    LD50: No data available LC50: No data available

Primary Routes(s) of Entry

Ingestion; inhalation.

Eye Hazards

This product may cause serious eye damage.

Skin Hazards

This product may cause skin corrosion or irritation.

Ingestion Hazards

Ingestion of the product may cause one or more of the following symptoms and effects: nausea, vomiting, cramps, gastrointestinal irritation, abdominal pain, convulsions, and tachycardia. Chronic ingestion may cause fluorosis (a disease characterized by mottled teeth, osteosclerosis, and pain and loss of mobility in joints).

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, impaired pulmonary function, fluorosis, and/or aggravation of pre-existing diseases of the liver, kidneys, and the skeletal, nervous, and gastrointestinal systems.

Carcinogenicity

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

Germ Cell Mutagenicity

Some inorganic fluorides have been demonstrated to induce mutagenic changes in mammalian cells in culture. No genetic effects in humans from occupational exposure to potassium bifluoride have been established.

Reproductive Effects

In experimental studies, boric acid and other inorganic borates have 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 borates have been established.

Acute Toxicity Estimates: 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, Aquatic Toxicity to Fish and Invertebrates

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)

Boric Acid, Aquatic Toxicity to Plants and Microorganisms

Depressed growth rate: 290 mg/liter, exposure period not reported (Algae)

Boric Acid, Other Ecological Effects

Toxicity to Terrestrial Organisms: no data available
Persistence and Degradability: no data available
Bioaccumulation Potential: no data available
Mobility in Soil: no data available

Boron

Aquatic Toxicity to Fish and Invertebrates: no data available
Aquatic Toxicity to Plants and Microorganisms: no data available
Toxicity to Terrestrial Organisms: no data available
Persistence and Degradability: no data available
Bioaccumulation Potential: no data available
Mobility in Soil: no data available

Potassium Bifluoride

Aquatic Toxicity to Fish and Invertebrates: no data available

Aquatic Toxicity to Plants and Microorganisms: no data available
Toxicity to Terrestrial Organisms: no data available
Persistence and Degradability: no data available
Bioaccumulation Potential: no data available
Mobility in Soil: no data available

Potassium Pentaborate

Aquatic Toxicity to Fish and Invertebrates: no data available
Aquatic Toxicity to Plants and Microorganisms: no data available
Toxicity to Terrestrial Organisms: no data available
Persistence and Degradability: no data available
Bioaccumulation Potential: no data available
Mobility in Soil: no data available

Potassium Tetraborate

Aquatic Toxicity to Fish and Invertebrates: no data available
Aquatic Toxicity to Plants and Microorganisms: no data available
Toxicity to Terrestrial Organisms: no data available
Persistence and Degradability: no data available
Bioaccumulation Potential: no data available
Mobility in Soil: no data available

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

UN Number: 3266
Proper Shipping Name: Corrosive liquid, basic, inorganic, n.o.s.
(contains potassium bifluoride and boric acid)
Hazard Class(es): 8
Packing Group: III
Environmental Hazards: not applicable
Transport in Bulk: not applicable
Special Precautions: not applicable

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 greater than 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, E
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 for Product (Legend)

Health - 3* (serious, 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 for Product

Health - 3 Flammability - 0 Reactivity – 0

Preparation Information

Date of Preparation: 10 September 2014
Date of Prior SDS: 3 April 2014

Disclaimer

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Lucas-Milhaupt, Inc.