

Safety Data Sheet

1. Supplier and Manufacturer

Aufhauser Corporation
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 Plainview NY 11803 USA
 Telephone: 516-694-8696 www.brazing.com
 Emergency Phone Number: 516-694-8696 or 212-246-0205
 24-hour Emergency Response: 212-246-9420 or 911
 SDS Number: UFLUX 201802
 Product Codes: **Black SilverFlux, White SilverFlux, UltraFlux, UltraFlux Black**
 Product Use(s): Flux for metal brazing



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2. Hazards identification

Classification(s)

GHS Classified: Acute Tox (Oral) 4; Skin Corrosion 1C; Severe Eye Damage 1; Reproductive Tox 2.

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



GHS Label Signal Word(s): Danger

GHS Label Hazard Statement(s): Harmful if swallowed. Causes severe skin burns and eye damage. Suspected of damaging fertility or the fetus.

GHS Label Precautionary Statement(s): Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. 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

<i>Ingredient</i>	<i>CAS Number</i>	<i>%wt.</i>	<i>Impurities</i>
Boric acid	10043-35-3	15-30	None known
Boron	7440-42-8	0-5	None known
Potassium bifluoride	7789-29-9	15-30	None known
Potassium pentaborate	12229-13-9	1-5	None known
Potassium tetraborate	1332-77-0	15-40	None known

4. First aid measures

Eyes: 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. If subject is conscious, give 2-4 cups of milk or water. 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: Depending upon the dose, ingestion of the component potassium fluoride or 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 contact may cause skin irritation, and/or skin injury may occur from prolonged contact.

5. Firefighting measures

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.

Extinguishing Media: Not applicable.

Fire Fighting Instructions: If fighting a fire in which this product is present, wear a self-contained breathing apparatus with full face piece 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/personal protection

Ingredients – Exposure Limits

Boric acid	ACGIH TLVs: 2 mg/m ³ TWA; 6 mg/m ³ STEL	No OSHA PEL(s)
Boron	No ACGIH TLV(s)	No OSHA PEL(s)
Potassium fluoride	ACGIH TLV: 2.5 mg/m ³ TWA (as F-)	OSHA PEL: 2.5 mg/m ³ TWA (as F-)
Potassium bifluoride	ACGIH TLV: 2.5 mg/m ³ TWA (as F-)	OSHA PEL: 2.5 mg/m ³ 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 (face piece, 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: black paste, white paste	Odor: no odor
Odor threshold: n/a	pH: 8.0 - 9.1
Melting point: approx. 792 F/422 C	Freezing point: n/a
Boiling point/boiling range: n/a	Flash Point: n/a
Evaporation Rate: n/a	Flammability Class: n/a
Lower Explosive Limit: n/a	Upper Explosive Limit: n/a
Vapor pressure: n/a	Vapor density: n/a
Relative density (H ₂ O): approx. 1.5 - 1.7	Solubility (H ₂ O): soluble
Oil-water partition coefficient: not determined	Auto ignition Point: n/a
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: some components may decompose at elevated temperatures.

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 fluoride	LD50: 245 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: 2,660 mg/kg (oral/rat)	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, particularly on abraded skin. Prolonged exposure can cause dermatitis.

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 fluoride or 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: LD50 (oral): >400 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, 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 Fluoride	Aquatic Toxicity to Fish: LC50 = 64 mg/liter for 240 h. (Trout) Aquatic Toxicity to Fish: LC50 = 9.3 mg/liter for 96 h. (Grass Carp) Aquatic Toxicity to Invertebrates: EC50 = 270 mg/liter (Daphnia) Aquatic Toxicity to Plants: EC50 = 95 mg/liter for 96 h. (Algae) Aquatic Toxicity to Microorganisms: EC50 = 101 mg/liter (Protozoa) No data available for Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, or Mobility in Soil.
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.

Proposition 65 (California):

- Chemicals known to cause cancer: none
- Chemicals known to cause reproductive toxicity for females: none
- Chemicals known to cause reproductive toxicity for males: none
- Chemicals known to cause developmental toxicity: none

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 including information on preparation and revision of the SDS

<u>NFPA Ratings for Product</u>	<u>HMIS Ratings for Product (Legend)</u>
Health - 3	Health - 3 (serious, chronic hazard)
Flammability - 0	Flammability - 0 (minimal hazard)
Reactivity - 0	Physical Hazard - 0 (minimal hazard)

Date of Preparation: 2018-Feb

Disclaimer

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Aufhauser Corporation