Handy Dry Flux 6040 and 6040-1

Safety Data Sheet

1. Product and Company Identification

Manufacturer

Lucas Milhaupt, Inc.
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Emergency Phone Number

Chemtrec: 800-424-9300

SDS Number: 13

Product Code: 73-204 (1 Lb Handy Flux 6040), 82-049 (Handy Flux 6040)

Product Use(s): Flux for metal brazing

2. Hazards Identification

Classification(s)

Acute Toxicity, Oral: Hazard Category 3
Skin Corrosion: Hazard Category 1C
Severe Eye Damage: Hazard Category 1

Label Symbol(s): Skull and Crossbones, Corrosive

Label Signal Word(s): Danger

Label Hazard Statement(s)

Toxic if swallowed.
Causes severe skin burns and eye damage.

Label Precautionary Statement(s)

Do not handle until all safety precautions have been read and understood.
Do not breathe dust or mists.
Wear protective gloves and eye/face protection.
Wash hands thoroughly after handling. Store locked up.
Do not eat, drink, or smoke when using this product.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting unless so instructed by medical personnel. Immediately call a doctor or Poison Control Center.

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.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Dispose of contents/container in accordance with applicable regulations.

The acute toxicities of 50-70% of the products' ingredients are unknown.

3. Composition/Information on Ingredients

Ingredient	CAS Number	%	Impurities
Potassium hydrogen difluoride	7789-29-9	50-70	None known
Potassium tetraborate	12045-78-2	30-50	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 personnel. If the subject is conscious, give 2-4 cups of milk, calcium lactate, or calcium gluconate. 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 potassium hydrogen difluoride may be toxic. Its concentration in the product is <700 gm/kg. Treat fluoride intoxication symptomatically. No components are readily absorbed through the skin, although skin burns may occur from 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 dry location away from incompatible materials (see Section #10).

8. Exposure Controls and Personal Protection

Ingredients - Exposure Limits

Potassium hydrogen difluoride
ACGIH TLV: 2.5 mg/m3 TWA (as F-) OSHA PEL: 2.5 mg/m3 TWA (as F-)
Potassium tetraborate
No ACGIH TLV(s) No OSHA PEL(s)

Ingredients – Biological Limits

Potassium hydrogen difluoride
ACGIH BEIs for fluoride in urine: 2 mg/l. prior to shift
3 mg/l. end of shift
Potassium tetraborate
No ACGIH BEI(s) or other biological limits

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 10036, USA).

9. Physical and Chemical Properties

Appearance: white powder
Odor: no odor
Odor threshold: not applicable
pH: not determined
Melting point: approx. 1,100F./600C.
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): not determined
Solubility (H2O): soluble
Oil-water partition coefficient: not determined
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
Risk of Dangerous 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, potassium oxide, and/or fluorides.

11. Toxicological Information

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

Ingredients - Toxicological Data

Potassium hydrogen difluoride

	LD50: no data available	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.

Ingestion Hazards

The product is toxic by ingestion, and ingestion of large quantities may be fatal. Ingestion of quantities below the lethal dose may cause one or more of the following symptoms and effects: nausea, vomiting, cramps, 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 hydrogen difluoride have been established.

Reproductive Effects

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

Acute Toxicity Estimates

LD50 (oral): >200 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:

Potassium hydrogen difluoride

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

Potassium 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

UN Number: 1811
Proper Shipping Name: Potassium hydrogen difluoride, solid mixture
Hazard Class(es): 8, 6.1
Packing Group: II
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 >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. 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 - 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

Health - 3 Flammability - 0 Reactivity – 0

Preparation Information

Date of Preparation: 2 July 2014
Date of Prior SDS: 3 July 2012

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Lucas-Milhaupt, Inc.