

SAFETY DATA SHEET – #0410A

1. IDENTIFICATION

Product Name: Pathfinder Farrier Products Company Flux
Manufacturer: Pathfinder Farrier Products Company – pathfinderfarrier.com
Address: PO Box 11586, College Station, TX 77842
Phone number: 866.285.9931 – Monday-Friday 8AM-5PM US Central Time
Synonyms: Brazing Flux, Welding Flux
Chemical Family: Inorganic Borates

2. HAZARD IDENTIFICATION

Symbol(s):

Signal Word: Warning

Hazard Statement: May be harmful in contact with eyes or skin, if inhaled, or swallowed.



Emergency Overview: The product consists of light powder. There are no immediate health hazards associated with these products. These products are not flammable nor reactive. If involved in a fire, these products may generate irritating fumes. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

Hazard Summary: Overexposure to this material in the form of powder may be hazardous to health. May cause eye, skin, and mucous membrane irritation. May cause temporary or permanent respiratory disease. Certain pulmonary and skin conditions may be aggravated by exposure.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%W/W	CAS	ACGIH TLV mg/m ³	ACGIH STEL mg/m ³
Borax	35-65	1330.43-4	1	Not Established
Boric Acid	35-65	10043-35-3	Not Established	Not Established

Note: This is not a specification

4: FIRST AID MEASURES

Eye Contact: Immediately flush eyes for 15 to 20 minutes. If irritation persists, seek medical attention.

Skin Contact: Thoroughly wash affected area with soap and water. If irritation persists, seek medical attention.

Inhalation: If this product is inhaled, remove victim to fresh air. If symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: Unlikely. If the flux is swallowed, call a physician or Poison Control center for most current information. Do not induce vomiting, unless directed by medical personnel. Rise mouth



with water, if conscious. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow

Target Organs: Respiratory system, skin, and eyes.

Primary Routes of Entry: Skin contact, eye contact, inhalation, ingestion.

5. FIRE-FIGHTING MEASURES

When involved in a fire, this material may decompose and produce irritating vapors and gases containing boron and sodium compounds.

Flash Point: None

Auto-Ignition: Not applicable

Flammable Limits: Not applicable

Extinguishing Media: Dry chemical, foam, or carbon dioxide

Specific Hazards Arising from Chemicals: May generate fumes when heated.

Special Protective Actions for Fire-Fighters: Fire-fighters should use a positive-pressure, self-contained breathing apparatus and protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Spill and Leak Response: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel.

Minimum Personal Protective Equipment should be Level C: triple gloves (rubber gloves and nitrile gloves, over latex gloves), chemically resistant suit and boots, hard-hat, and Air-Purifying Respirator with a high efficiency particulate filter. Level B: triple-gloves (rubber gloves and nitrile gloves, over latex gloves), and a Self-Contained Breathing Apparatus should be worn when oxygen levels are below 19.5% or are unknown.

Pick-up, sweep-up, or vacuum solid material carefully. Decontaminate the area thoroughly. Place all spilled residues in a suitable container and seal. Dispose of in accordance with applicable regulations.

7. HANDLING AND STORAGE

Work Practices and Hygiene Practices: As with all chemicals, avoid getting this product on or in you. Wash hands after handling this product. Do not eat or drink while handling this material. Use ventilation and other engineering controls to minimize potential exposure to dusts or powders of this product.

Storage and Handling Practices: All employees who handle this material should be trained to handle it safely. Use in a well ventilated location. Open containers on a stable surface. Containers of this product must be properly labeled.

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Empty containers may contain residual powders; therefore, empty containers should be handled with care.



If this product is used during welding operations, follow the requirements of the Federal Occupational Safety and Health Welding and Cutting Standard (29 CFR 1910 Subpart Q) and the safety standards of the American National Standards Institute for welding and cutting (ANSI Z49.1).

Protective Practices During Maintenance Of Contaminated Equipment: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment using soapy water before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients). Prudent practice is to ensure eyewash/safety shower stations are available near areas where this product is used.

Respiratory Protection: Maintain airborne contaminant concentrations below guidelines listed in Section 2 (Composition and Information on Ingredients). If respiratory protection is use only protection authorized in 29 CFR 1910.134, or applicable State regulations. Use supplied air respiration protection if oxygen levels are below 19.5% or are unknown.

Eye Protection: Safety glasses. When this product is used in conjunction with brazing, wear safety glasses, goggles or face-shield with filter lens of appropriate shade number (per ANSI Z49.1-1988, "Safety in Welding and Cutting").

Hand Protection: Wear neoprene gloves for routine industrial use. Use triple gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this MSDS. When this product is used in conjunction with brazing, wear gloves that protect from sparks and flame (per ANSI Z49.1-1988, "Safety in Welding and Cutting").

Body Protection: Use body protection appropriate for task.

9. PHYSICAL AND CHEMICAL PROPERTIES

Relative Vapor Density (air = 1): Not applicable.

Evaporation Rate (nBuAc = 1): Not applicable.

Specific Gravity (water = 1): 1.55

Freezing/Melting Point: Not available.

Solubility In Water: Moderately soluble.

pH: Not applicable.

Vapor Pressure, mm Hg @ 20°C: Not available.

Boiling Point: Not available.

Odor Threshold: Not applicable.

Coefficient of Oil/Water Distribution (Partition Coefficient): Not available.

Appearance and Color: This product consists of an odorless powder.

How to Detect Substance: The appearance is a distinctive characteristic of this product.

10. STABILITY AND REACTIVITY

Reactivity: Not applicable.

Chemical Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of Hazardous Reactions: Will not occur under normal conditions.

Conditions to Avoid: Avoid uncontrolled exposure to extreme temperatures and incompatible materials.

Hazardous Decomposition Products: Boron and sodium compounds.

11. TOXICOLOGICAL INFORMATION

Toxicity Data: Presented below are human toxicological data available for the components of this product. Other data for animals are available for the components of this product, but are not presented in this Safety Data Sheet.

Boric Acid:

Skin-(Human) = 15 mg/3D-I Mild irritation effects

TDLo (Oral-Child) = 500 mg/kg; Gastrointestinal tract effects

LDLo (Oral-Man) = 429 mg/kg; Cardiovascular effects, Systemic effects

BORIC ACID (Continued):

TDLo (Oral-Child) = 500 mg/kg; Gastrointestinal tract effects

LDLo (Oral-Woman) = 200 mg/kg

TDLo (Oral-Infant) = 800 mg/kg/4W-I

LDLo (Oral-Infant) = 934 mg/kg

LDLo (Skin-Infant) = 1200 mg/kg

BORIC ACID (Continued):

LDLo (Skin-Child) = 4 g/kg/4 days

LDLo (Skin-Man) = 2430 mg/kg

LDLo (Skin-Child) = 1500 mg/kg

LDLo (Subcutaneous-Infant) = 1100 mg/kg TDLo (Unreported-Man) = 170 mg/kg;

Gastrointestinal tract effects

LDLo (Unreported-Man) = 147 mg/kg

Suspected Cancer Agent: The components of this product are not found on the following lists: FEDERAL, OSHA Z LIST, NTP, IARC and CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

Irritancy of Product: This product can be irritating to contaminated skin and eyes.

Sensitization to The Product: The components of this product are not known to be sensitizers with repeated or prolonged use.

Reproductive Toxicity Information: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans. Studies on test animals exposed to relatively high doses of Boric Acid (a component of this product) indicate mutagenic effects.

Embryotoxicity This product is not reported to produce embryotoxic effects in humans.



Teratogenicity: This product is not reported to cause teratogenic effects in humans.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans. Studies on test animals exposed to relatively high doses of Boric Acid and Borax (components of this product) indicate adverse reproductive effects.

Biological Exposure Indices: Currently, there are no Biological Exposure Indices (BEIs) associated with the components of this product.

Medical Conditions Aggravated by Exposure: Skin and respiratory disorders may be aggravated by prolonged over-exposures to this product.

Recommendations to Physicians: Treat symptoms and eliminate overexposure.

12. ECOLOGICAL INFORMATION

All work practices must be aimed at eliminating environmental contamination.

ENVIRONMENTAL STABILITY: The components of this product will slowly react with water, oxygen, and other compounds to form a variety of boron and sodium compounds. The following environmental data are available for the components of the product:

Boric Acid: Log KOW = 0.7570. Water Solubility = 4.7% Boric Acid is leachable through normal soil.

Effect of Material on Plants or Animals: This product is harmful to animal life in very low concentrations. Specific data on test animals are available, but are not presented in this Safety Data Sheet. Boric Acid is toxic to plants at the following levels: alfalfa and vegetables tolerate 2-4 mg/L; potatoes, corn, tomatoes, peas and grain 1-2 mg/L, citrus fruit no more than 0.5-1 mg/L.

Effect of Chemical on Aquatic Life: This product will cause adverse effects on aquatic life. The following aquatic toxicity data are available for the components of this product.

Boric Acid:

LC50 (trout) = 100 ppm/ soft water 4 days

LC50 (trout) = 79 ppm/ hard water 4 days

LC50 (catfish) = 155 ppm/ soft water 4 days

LC50 (catfish) = 22 ppm/ hard water 4 days

LC50 (goldfish) = 46 ppm/ soft water 4 days

LC50 (goldfish) = 75 ppm/ hard water 4 days

13. DISPOSAL CONSIDERATIONS

This material must be disposed of in a safe manner in accordance with any and all applicable federal, state and local regulations.

14. TRANSPORT INFORMATION

Basic Shipping Information:

U.S. Department of Transportation (49 CFR 171 to 180) Hazardous Classification: Not applicable

Proper Shipping Name: Not applicable

Packing Group: Not applicable

Labeling Requirement: Not applicable



SECTION 15: REGULATORY INFORMATION

U.S. Federal regulations:

Comprehensive Environmental Response Compensation and Liability Act of 1980

(CERLA): There is no reportable quantity for this material.

OSHA 29 CFR 1910.1200: Covered under the OSHA "Hazard Communication" standard.

Toxic Substance Control Act (TSCA): All components of this product are listed on the TSCA inventory.

Clean Water Act (CWA): Components are listed under various sections of the Clean Water act. Contact your local/state authorities to determine if substance is regulated under their jurisdiction.

Clean Air Act (CAA): Components are listed under various sections of the Clean Air Act. Contact your local/state authorities to determine if substance is regulated under their jurisdiction.

Superfund Amendments and Reauthorization Act (SARA) Title III Information: The components of this product are not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act,

SECTION 16: OTHER INFORMATION

Pathfinder Farrier Products Company makes no representations regarding the accuracy or completeness of the information contained herein, and assumes no liability or responsibility in connection with the information contained herein or for any loss, damage, injury of any kind including death which may result from or arise out of the use of or reliance on this information or any products or materials. The buyer assumes all risk in connection with the use and handling of the products and materials.

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