



## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

### Product identifier

**Product name:** AMCO 3922 Blue

### Other means of identification

**Product code:** 453

### Recommended use of the chemical and restrictions on use

**Recommended use:** General purpose silver solder/braze flux

### Details of the supplier of the safety data sheet

**Manufacturer:** Force Industries Division.  
28 Industrial Blvd. Paoli, PA 19301.

### Emergency Telephone number

For hazardous materials incidents only, call CHEMTREC Emergency Response  
Number:

1-800-424-9300.

For all other inquiries about this product, call Force Industries Division at 610-  
647-3575.

**Revision Date:** July 20, 2016

**Supersedes Date:** April 5, 2016

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### **GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Skin Corrosion (Category 1B), H314  
Serious Eye Damage (Category 1), H318  
Acute toxicity, oral (Category 3), H301  
Reproductive toxicity (Category 2), H361


### **Hazard statement(s)**

H301: Toxic if swallowed  
H314: Causes severe skin burns and eye damage  
H318: Causes serious eye damage  
H361: Suspected of damaging fertility or the unborn child



## 2.2 GHS Label elements, including precautionary statements

### Emergency overview

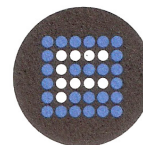
|  |              |
|--|--------------|
| <b>Appearance:</b>   | Light Blue   |
| <b>Physical state:</b>   | Smooth Paste |
| <b>Odor:</b>   | None         |
| <b>Signal Word:</b>  | Danger       |
|  |              |

### Precautionary statement(s)

P260: Do not breathe dust/fumes/gas/mist/vapors/spray.  
P264: Wash skin thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P310+P330+P331: IF SWALLOWED: Immediately call a POISON CENTER or physician, rinse mouth and DO NOT induce vomiting.  
P303+P361+P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304+P340+P311+P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Contact a physician if you feel unwell.  
P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Contact a physician  
P405: Store locked up.  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

| <u>Component</u>      | <u>CAS No.</u> | <u>EINECS No.</u> | <u>Weight %</u> |
|-----------------------|----------------|-------------------|-----------------|
| Potassium Bifluoride  | 7789-29-9      | 232-156-2         | 200-45          |
| Boric Acid            | 10043-35-3     | 233-139-2         | 10-25           |
| Potassium tetraborate | 1332-77-0      | 215-575-5         | 5-20            |

Others, if any, are non-hazardous and claimed as trade secret.

**SECTION 4: FIRST AID MEASURES****4.1 Description of first aid measures****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**Eyes:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician immediately. Continue rinsing eyes during transport to hospital.

**Skin:** Wash off with plenty of water. Consult a doctor if a rash or burn develops.

**Ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center. Give large quantities of water, milk, or 5% sodium bicarbonate solution.

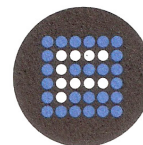
**Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available



## **SECTION 5: FIRE-FIGHTING MEASURES**

### **5.1 Extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### **5.2 Special hazards arising from the substance or mixture**

May release potassium oxides, hydrogen bromide gas and hydrogen fluoride fumes. Dense smoke may be generated.

### **5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary. Full protective equipment required.

### **5.4 Further information**

No data available.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

### **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

### **6.3 Methods and materials for containment and cleaning up**

Soak up material with inert absorbent material. Squeegee, scrape or shovel material into a suitable container. Clean spill area thoroughly.

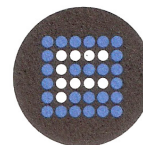
### **6.4 Reference to other sections**

For disposal see section 13.

## **SECTION 7: HANDLING AND STORAGE**

### **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of vapor or mist. Provide appropriate exhaust ventilation. Professionally wash contaminated clothes before re-use. For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Store flux at ambient conditions, keep containers tightly closed and away from foodstuffs. Wash thoroughly after handling to remove all residues. No eating or smoking in work area.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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|---|
| <b>SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION</b> |
|---|

**8.1 Control parameters****Components with workplace control parameters**

| Components                                 | OSHA PEL              | OSHA TWA | ACGIH TLV             | ACGIH TWA |
|--|-----------------------|----------|-----------------------|-----------|
| Potassium bifluoride                       | 2.5 mg/m <sup>3</sup> | NA       | 2.5 mg/m <sup>3</sup> | NA        |
| Boron Oxide* B <sub>2</sub> O <sub>3</sub> | 15 mg/m <sup>3</sup>  | NA       | 10 mg/m <sup>3</sup>  | NA        |

**8.2 Exposure controls****Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment****Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

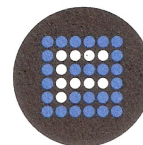
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body Protection**

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of



protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

APPEARANCE: Light Blue Paste

ODOR: None

pH: 8-9

BOILING POINT: ~ 100 C

SOLUBILITY IN WATER: Moderate

SPECIFIC GRAVITY (H<sub>2</sub>O = 1): 1.64

EVAPORATION RATE: NA

% VOLATILE: NA

### **9.2 Other safety information**

None

## **SECTION 10: STABILITY AND REACTIVITY**

### **10.1 Reactivity**

No data available

### **10.2 Chemical stability**

Stable under recommended storage conditions

### **10.3 Possibility of hazardous reactions**

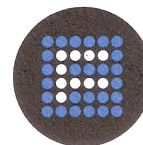
No data available

### **10.4 Conditions to avoid**

No data available

### **10.5 Incompatible materials**

Acids, alkalis

**10.6 Hazardous decomposition products**

Hydrogen fluoride and caustic potash are expected.

|  |
|--|
| <b>SECTION 11: TOXICOLOGICAL INFORMATION</b> |
|--|

**11.1 Component toxicity**

| Components | LC50/Inhalation/6h/Rat | LC50/Dermal | LD50/Oral/Rat |
|------------|------------------------|-------------|---------------|
| Boric Acid | Not known              | Not Known   | 2660 mg/kg    |

**11.2 Effects of Acute Overexposure:**

- a. Inhalation: No data available.
- b. Eyes: Rabbit – Result: Eye irritation
- c. Skin Contact: no data available
- d. Ingestion: No data available.

**11.3 Primary Route of Exposure:**

Skin, eyes, and inhalation

**11.4 Effects of Chronic Exposure:**

**Coughing, erythema, nausea. Osseous fluorosis due to fluoride. Chronic fluoride absorption can result in osseous fluorosis, increased radiographic density of the bones and mottling of the teeth. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.**

**11.5 Target Organs:**

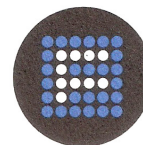
Skin, nasal, respiratory irritant and kidney

**11.6 Reproductive Effects**

Reproductive toxicity: Boric Acid is a presumed human reproductive toxicant, Teratogenicity: Boric Acid - fetotoxicity

**11.7 Carcinogenicity:**

No data available



## SECTION 12: ECOLOGICAL INFORMATION

### 12. ECOLOGICAL INFORMATION

#### 12.1 Toxicity

##### Toxicity to fish

| Components | LC50 - <i>Ptychocheilus lucius</i> | LC0 - <i>Lepomis macrochirus</i> (Bluegill) |
|------------|------------------------------------|---|
| Boric Acid | 279 mg/l - 96 h                    | > 1,021 mg/l - 96 h                         |

##### Toxicity to daphnia and other aquatic invertebrates.

| Components | LC50 - <i>Daphnia magna</i> (Water flea) | EC50 - <i>Daphnia magna</i> (Water flea) |
|------------|--|--|
| Boric Acid | 53.2 mg/l - 21 d                         | 133 mg/l - 48 h                          |

#### 12.2 Persistence and degradability

No data available

#### 12.3 Bioaccumulative potential

No data available

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

## SECTION 13: DISPOSAL CONSIDERATIONS

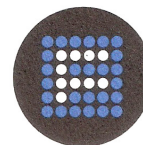
#### 13.1 Waste treatment methods

Product: offer surplus and non-recyclable solutions to a licensed disposal company. Dispose of in accordance with all federal, state, and local regulations.

##### **Contaminated packaging**

Dispose of as unused product.





## SECTION 14: TRANSPORT INFORMATION

**DOT (US)**

Not Regulated

**IMDG**

Not Regulated

**IATA**

Not Regulated

## SECTION 15: REGULATORY INFORMATION

**International Inventories**

**USA (TSCA):** Complies

**Federal Regulations**

**SARA Title III 313 Reportable Substances**

This product does not contain chemicals which are subject to the reporting requirements of the Act and of Title 40 of the Code of Federal Regulations, Part 372

**SARA Title III Section 311/312 Hazard Categories:**

Acute Health Hazard  
Chronic Health Hazard

**Toxic Substance Control Act (TSCA)**

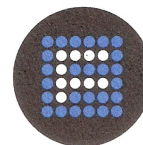
If listed below, non-proprietary substances are subject to export notification Section 12 (b) of TSCA:  
None

**State Regulations (RTK)**

**Pennsylvania Right to Know Components**

| Component                     | CAS No.   |
|-------------------------------|-----------|
| Potassium hydrogen difluoride | 7789-29-9 |

# SAFETY DATA SHEET



FORCE  
INDUSTRIES  
DIVISION

## New Jersey Right to Know Components

| Component                     | CAS No.   |
|-------------------------------|-----------|
| Potassium hydrogen difluoride | 7789-29-9 |

**WHIMS HAZARD CLASS:** Class E Corrosive Material  
Class D-2B: Material causing other toxic effects (Toxic).

## California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## SECTION 16: OTHER INFORMATION

### HMIS:

Health: 3

Flammability: 0

Reactivity: 0

**PREPARATION INFORMATION:** Technical Service Department, Force Industries Division

**DISCLAIMER:** The data set forth in these sheets are based on information provided by the suppliers of the raw materials and chemicals used in the manufacture of the aforementioned product. Force Industries makes no warranty with respect to the accuracy of the information provided by their suppliers, and disclaims all liability of reliance thereon. Force Industries warrants only that its products conform to their published specifications and no other express warranty is made with regards thereof. We do not guarantee favorable results, and we assume no liability in connection with the use of the products. They are intended for use by persons having technical skill and knowledge, at their own discretion and risk.