



Safety Data Sheet

Issue Date: 28-Feb-2011

Revision Date: 01-May-2018

Version 3

1. IDENTIFICATION

Product Identifier

Product Name Type "G" Silver Brazing Paste Flux

Other means of identification

SDS # GFM-001

UN/ID No UN1759

Recommended use of the chemical and restrictions on use

Recommended Use All temperature, all purpose paste flux for brazing with silver alloys. Use for brazing all ferrous, nickel, and non-ferrous alloys except aluminum and magnesium.

Details of the supplier of the safety data sheet

Manufacturer Address

The Gasflux Company
32 Hawthorne Street
P.O. Box 1170
Elyria, Ohio 44036 U.S.A.

Emergency Telephone Number

Company Phone Number (440) 365-1941 (8am - 4:30pm EST M-F)

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International) 1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance White paste

Physical State Solid

Odor No odor

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Vapors)	Category 3
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1B
Reproductive toxicity	Category 2

Signal Word

Danger

Hazard Statements

Harmful if swallowed
Causes respiratory irritation
Causes severe skin burns and eye damage
Suspected of damaging fertility or the unborn child



Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

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Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a poison center or doctor/physician

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Immediately call a poison center or doctor/physician

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician Rinse mouth

Precautionary Statements - Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Potassium Tetraborate	12045-78-2	45-60
Potassium bifluoride	7789-29-9	20-35
Boric Acid	10043-35-3	10-20
Potassium fluoroborate	14075-53-7	5-15
Water and Wetting Agent	Proprietary	Remainder

4. FIRST-AID MEASURES

First Aid Measures

General Advice

If exposed or concerned: Get medical advice/attention. Always contact physician or poison center in case of medical emergency. Treatment may vary with condition of victim and specifics of incident.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.

Skin Contact

Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse.

Inhalation

Remove to fresh air. Administer oxygen or artificial respiration only on a physician's recommendation. Seek immediate medical attention/advice.

Ingestion

Rinse mouth. Induce vomiting, but only if victim is fully conscious. Seek medical attention immediately.

Most important symptoms and effects

Symptoms

Irritation and corrosive burns to mouth, throat, and stomach. Prolonged contact may even cause severe skin irritation or mild burn. May cause eye burns and permanent eye damage. May cause irritation and burns to the respiratory tract, symptoms may include coughing, sore throat, and labored breathing. May cause nausea, vomiting, stomach ache, and diarrhea. May cause brain and kidney damage. May cause mottling of teeth, damage to bone and fluorosis. Symptoms may be delayed.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Exposure may aggravate pre-existing respiratory or skin problems.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

Not determined.

Specific Hazards Arising from the Chemical

Non-flammable.

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Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes and skin.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Sweep up and shovel into suitable containers for disposal. Dilute and wash remaining with water and dispose of in accordance with federal, state, and local regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Use personal protection recommended in Section 8. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Use only in well-ventilated areas. Protect container from physical damage. Since empty container retains residue, follow all label warnings even after container is empty. American Welding Society (AWS) Specification Class: FB3-A Form: Paste Filler Metal: Bag and BCuP Typical Ingredients: Borates and Fluorides Application: General purpose flux for most ferrous and non-ferrous alloys. Has extended heat cycle. Activity Temp. Range: 1050-1700 °F/ 565-925 °C Recommended base metals: All brazeable ferrous and non-ferrous metal except those with aluminum or magnesium as a constituent. Also used to braze carbides.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

Incompatible Materials Strong acids. Alkalis. Elemental potassium. Concentrated oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Use enough ventilation and local exhaust at the flame site to keep the fumes below the threshold limit value-time weighted average (TLV-TWA) for welding fumes of 5 mg/m³ in the brazer's breathing zone and in the general air. Train the employee to keep his/her head out of the fumes

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Potassium Tetraborate 12045-78-2	STEL: 6 mg/m ³ inhalable fraction TWA: 2 mg/m ³ inhalable fraction	-	-
Potassium bifluoride 7789-29-9	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 2.5 mg/m ³	-
Boric Acid 10043-35-3	STEL: 6 mg/m ³ inhalable fraction TWA: 2 mg/m ³ inhalable fraction	-	-
Potassium fluoroborate 14075-53-7	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³ F

Appropriate engineering controls

Engineering Controls Ventilation systems. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Chemical goggles or full face shield. Use appropriate shaded eye protection when brazing.

Skin and Body Protection Rubber gloves.

Respiratory Protection Use approved fume respirator or air-supplied respirator when brazing in a confined space or where local exhaust or ventilation does not keep exposure below the applicable TLV- TWA.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Solid	Odor	No odor
Appearance	White paste	Odor Threshold	Not determined
Color	White		

<u>Property</u>	<u>The physical data listed below are typical values and should not be read as a product specification</u>	<u>Remarks • Method</u>
pH	7.2	
Melting Point/Freezing Point	566 °C / 1050 °F	
Boiling Point/Boiling Range	Not determined	
Flash Point	Non-flammable	
Evaporation Rate	Not applicable	
Flammability (Solid, Gas)	Non-flammable	
Upper Flammability Limits	Not applicable	
Lower Flammability Limit	Not applicable	
Vapor Pressure	Not applicable	
Vapor Density	Not applicable	
Specific Gravity	~1.992	(1=Water)
Water Solubility	Moderately soluble	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

10. STABILITY AND REACTIVITY

<u>Reactivity</u>	Not reactive under normal conditions.
<u>Chemical Stability</u>	Stable under recommended storage conditions.
<u>Possibility of Hazardous Reactions</u>	None under normal processing.
<u>Hazardous Polymerization</u>	Hazardous polymerization does not occur.
<u>Conditions to Avoid</u>	Exposure to air may dry flux.
<u>Incompatible Materials</u>	Strong acids. Alkalis. Elemental potassium. Concentrated oxidizing agents.

Hazardous Decomposition Products

Brazing fumes and gases cannot be classified simply. The composition and quantity of the fumes and gases are dependent upon the base metal, the process, procedures, and filler metal being used. Coatings or residue on the base metal such as cleaning or degreasing agents, paint, galvanizing or plating will produce fumes as well. Other conditions which influence the composition and quality of the fumes and gases to which workers may be exposed are: the number of operators relative to the volume of the work area, the quality and amount of ventilation, the position of the brazer's head in respect to the fume plume, as well as the presence of contaminants in the atmosphere such as halogenated hydrocarbon vapors from cleaning and degreasing activities. When brazing, the composition of the fumes and gases are usually different from the composition of the ingredients mentioned in Section

3. Fume ingredients of normal operation include those originating from volatilization, reaction, or oxidation of the materials noted in the above paragraph. Reasonably expected by-products include hazardous and corrosive fumes including oxides of boron with OSHA PEL of 10mg/m³, and fluorides with OSHA PEL of 2.5 mg/m³.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye Contact	Causes severe eye damage.
Skin Contact	Causes severe skin burns.
Inhalation	Toxic if inhaled.
Ingestion	Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Boric Acid 10043-35-3	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h
Potassium fluoroborate 14075-53-7	= 5854 mg/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Not classifiable as a human carcinogen.

Reproductive toxicity Suspected of damaging fertility or the unborn child.
A human study of occupationally exposed borate worker population showed no adverse reproductive effects. Animal studies indicate that boric acid reduces or halts sperm production, causes testicular atrophy, and when given to pregnant animals during gestation may cause developmental changes. These feed studies were conducted under chronic exposure conditions leading to doses many times in excess of those that could occur through inhalation of dust in the occupational setting.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Boric Acid 10043-35-3		1020: 72 h Carassius auratus mg/L LC50 flow-through		115 - 153: 48 h Daphnia magna mg/L EC50
Potassium fluoroborate 14075-53-7	95: 96 h Desmodesmus subspicatus mg/L EC50			

Persistence/Degradability Not determined.

Bioaccumulation Not determined.

Mobility

Chemical Name	Partition Coefficient
Boric Acid 10043-35-3	-0.757

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Boric Acid 10043-35-3	Toxic

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No UN1759
Proper Shipping Name Corrosive solid, n.o.s. (Potassium bifluoride)
Hazard Class 8
Packing Group III

IATA

UN/ID No UN1759
Proper Shipping Name Corrosive solid, n.o.s. (Potassium bifluoride)
Hazard Class 8
Packing Group III

IMDG

UN/ID No UN1759
Proper Shipping Name Corrosive solid, n.o.s. (Potassium bifluoride)
Hazard Class 8
Packing Group III

15. REGULATORY INFORMATION

International Inventories Not determined

US Federal Regulations

SARA 311/312 Hazard Categories

Acute Health Hazard Yes
Chronic Health Hazard Yes
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Potassium bifluoride 7789-29-9	X		X
Potassium fluoroborate 14075-53-7	X		X

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	3	0	0	Not determined
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Personal Protection
	3	0	0	Not determined

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet