Liquid Gasflux®

Gasflux®

THE *Gasflux* COMPANY

www.gasfluxusa.com

Liquid Gasflux®

The Gasflux® Process makes use of a specially compounded liquid-type flux, also known as Gasflux®, which is introduced automatically into the fuel gas by means of a vapor. It is recommended for both manual and automatic applications and works with all fuel gases. Gasflux® is manufactured under rigid test requirements to guarantee its highest quality and performance. Gasflux® conforms to AWS/ANSI A5.31, American Welding Society "Specifications for Brazing Fluxes" and falls under flux type FB3-K.

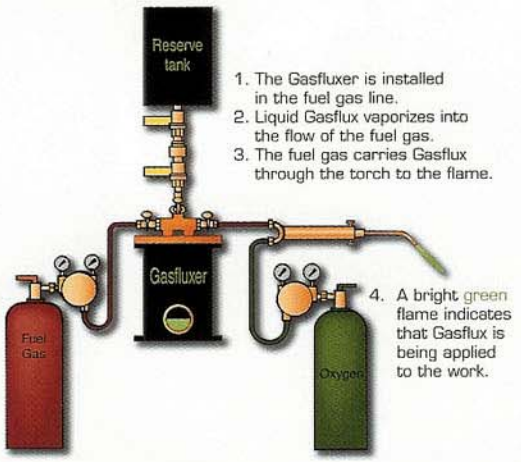
Type "W" Liquid Gasflux® is our universal liquid flux for both silver and bronze brazing. Type "W" is suitable with almost all applications for the brazing of copper, brass, steel, stainless steel, cast iron and carbide.

Type "CS" Liquid Gasflux® is our reduced concentrate liquid flux for both silver and bronze brazing. This reduced borate flux is utilized when "over-fluxing" is a concern, primarily with natural gas and alternative fuel gases such as LPG, Propylene and MAPP gas.

The Gasflux Company recognizes that each brazing application is unique. We suggest contacting The Gasflux Company to discuss your application and see which Liquid Gasflux® is best suited for your operation.

Custom blending of Liquid Gasflux® is available upon request.

The above fluxes are available from stock in standard packaging:
1 gal cans (3.79 liters),
5 gal pails (18.93 liters), and
53 gal drums (200.6 liters).



Gasflux® is a registered trade name for a liquid flux used for brazing and is manufactured by The Gasflux Company for exclusive use in the Gasfluxer®.

Gasflux®

THE Gasflux COMPANY

440-365-1941 www.gasflux.com

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Safety Data Sheet

Issue Date: 04-Feb-2009 **Revision Date:** 01-May-2015 **Version** 1

1. IDENTIFICATION

Product Identifier

Product Name Type BG-1 All Purpose Bronze Brazing Powder Flux

Other means of identification

SDS # GFM-015

Recommended use of the chemical and restrictions on use

Recommended Use For use with nickel silver and low fuming bronze alloys in the high temperature braze welding of brass, bronze, copper, nickel silver, cast iron, and steel.

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 crystalline solid **Physical State** Solid **Odor** Odorless

Classification

Reproductive toxicity	Category 2

Hazards Not Otherwise Classified (HNOC)
May be harmful if swallowed
May be harmful in contact with skin

Signal Word
Warning

Hazard Statements
May be harmful if inhaled
Suspected of damaging fertility or the unborn child
Causes serious eye irritation

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
Avoid breathing dust/fume/gas/mist/vapors/spray
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a poison center or doctor/physician if you feel unwell
If exposed or concerned: Get medical advice/attention

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Boric Acid	10043-35-3	>80
Sodium Tetraborate Decahydrate	1303-96-4	<20

4. FIRST-AID MEASURES

First Aid Measures

General Advice If exposed or concerned: Get medical advice/attention.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If irritation develops or persists seek medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Ingestion Induce vomiting, but only if victim is fully conscious. Get medical attention.

Most important symptoms and effects

Symptoms Irritating to eyes, respiratory system & skin. Ingestion may cause weakness, abdominal pain, vomiting, and diarrhea.

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

Product is not flammable.

Hazardous Combustion Products Oxides of boron.

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 Use personal protective equipment as required.

Environmental Precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

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 Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.

Conditions for safe storage, including any incompatibilities

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

Incompatible Materials Elemental zirconium. Potassium acetic anhydride.

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/m^3 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
Boric Acid 10043-35-3	STEL: 6 mg/m^3 inhalable fraction TWA: 2 mg/m^3 inhalable fraction	-	-
Sodium Tetraborate Decahydrate 1303-96-4	STEL: 6 mg/m^3 inhalable fraction TWA: 2 mg/m^3 inhalable fraction	(vacated) TWA: 10 mg/m^3	TWA: 5 mg/m^3

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas. 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		
Appearance	White crystalline solid	**Odor**	Odorless
Color	White	**Odor Threshold**	Not determined

Property	Values	Remarks • Method
pH	6.1 (0.1% Solution)	@ 20°C
Melting Point/Freezing Point	170.9 °C / 340 °F	
Boiling Point/Boiling Range	Not determined	
Flash Point	Non-Flammable Material	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	Not Applicable	
Lower Flammability Limit	Not Applicable	
Vapor Pressure	Not Applicable	
Vapor Density	Not Applicable	
Specific Gravity	1.51 (approx.)	
Water Solubility	4.7% @ 20°C; 27.5% @100°C	
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

Reactivity Not reactive under normal conditions.

Chemical Stability Stable under recommended storage conditions.

Possibility of Hazardous Reactions None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid Keep separated from incompatible substances. Keep out of reach of children.

Incompatible Materials Elemental zirconium. Potassium acetic anhydride.

Hazardous Decomposition Products

Brazing fumes and gases cannot be classified simply. The composition and quality of both are dependent upon the metal being brazed, the process, procedures, and filler metals being used. Other conditions which also influence the composition and quality of the fumes and gases to which workers may be exposed include: coatings on the metal being brazed (such as paint, plating, or galvanizing), the number of operators and the volume of the work area, the type of brazing alloy being used, the quality and amount of ventilation, the position of the operator's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities). When the flux and filler metal are consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients in Section 3. Fume and gas decomposition products from the brazing alloy and base metal, not just the ingredients of the flux are important. The concentration of a given fume or gas component may decrease many times the original concentration during brazing. Also, new compounds may form. Decomposition products of normal operation include those originating from the volatilization reaction, or oxidation of the wire or rods and flux plus those from the base metal and coating. Reasonably expected by-products include hazardous and corrosive fumes containing oxides of boron (TWA 10mg/m^3).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Avoid contact with eyes.

Skin Contact May be harmful in contact with skin.

Inhalation Harmful if inhaled.

Ingestion May be 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
Sodium Tetraborate Decahydrate 1303-96-4	= 2660 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 This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity* May damage 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

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

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

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
Sodium Tetraborate Decahydrate 1303-96-4	Toxic

14. TRANSPORT INFORMATION

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

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION

International Inventories

Not determined

US Federal Regulations

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

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium Tetraborate Decahydrate 1303-96-4	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	1	0	0	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	Not determined	Not determined	Not determined	Not determined

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Revision Note: New format

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