



Safety Data Sheet

Issue Date: 01-Mar-2013

Revision Date: 01-May-2015

Version 1

1. IDENTIFICATION

Product Identifier

Product Name Type "W" Liquid Gasflux

Other means of identification

SDS # GFM-006

UN/ID No UN1993

Recommended use of the chemical and restrictions on use

Recommended Use Liquid gasflux for brazing.

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

Important ! This section covers the materials from which the product is manufactured. Reasonably expected fumes and gases during the brazing process are covered in Section 8 – Exposure Controls / Personal Protection (when brazing).

Appearance Clear, colorless liquid

Physical State Liquid

Odor Characteristic

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 1
Flammable Liquids	Category 2

Signal Word

Danger

Hazard Statements

Harmful if swallowed
Harmful in contact with skin
Harmful if inhaled
Causes serious eye irritation
Causes damage to organs
Highly flammable liquid and vapor



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Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response

IF exposed: Call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
Wash contaminated clothing before reuse.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a poison center or doctor/physician if you feel unwell.
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 SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.
IN CASE OF FIRE: Use CO2, dry chemical, or foam for extinction.

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Harmful to aquatic life with long lasting effects

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Trimethyl borate	121-43-7	55
Acetone	67-64-1	25
Methanol	67-56-1	20

4. FIRST-AID MEASURES

General Advice	Provide this SDS to medical personnel for treatment. Always contact physician or poison control center in case of medical emergency. Treatment may vary with condition of victim and specifics of the incident.
Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical attention
Skin Contact	Copiously flush skin with plenty of water for several minutes. Get medical attention if symptoms occur.
Inhalation	Remove victim to fresh air. Administer oxygen or artificial respiration only on physician's recommendation. Seek medical attention.
Ingestion	If swallowed, do not induce vomiting, immediately give several glasses of warm water. Do not give liquids if victim is unconscious or very drowsy. Seek medical attention immediately.

Most important symptoms and effects when handling (see Section 8 for symptoms and effects while brazing)

Symptoms	Inhalation: High vapor concentrations may cause irritation of eyes, nose and throat. Prolonged inhalation may cause headaches, nausea and drowsiness. Eye contact: Contact may cause irritation to the eyes and mucus membranes. Skin contact: Prolonged contact causes dryness and irritation. Ingestion: Ingestion may cause headache, fatigue, nausea, circulatory and/or respiratory failure and death. Chronic: Repeated and/or prolonged exposure by inhalation/absorption may cause systematic poisoning.
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Indication of any immediate medical attention and special treatment needed if ingested

Notes to Physician Provide general supportive measures and treat symptomatically. Symptoms may be delayed. Ethanol and fomepizole are effective antidotes for methanol poisoning, although fomepizole is preferred. Target organs for methanol: Kidneys, heart, central nervous system, liver, eyes.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Dry Chemical, CO2, Water Spray or Foam

Unsuitable Extinguishing Media Not determined

Specific Hazards Arising from the Chemical

This product burns with a clear flame which is virtually invisible in daylight. Evacuate nonessential personnel from the fire area. Prevent human exposure to fire, smoke, fumes or products of combustion. Keep containers, which are exposed, to heat or fire cool with water spray to prevent rupture or build-up of pressure. Do not use welding or cutting torch on or near any shipping/storage container of this material, full or empty.

Sensitivity to Static Discharge Take precautionary measures against static discharge.

Protective Equipment and Precautions for firefighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Extinguish all sources of ignition within 35 feet (11m) of spill or vapor release. Provide adequate ventilation. If spill is of significant or unknown quantity, use self-contained breathing apparatus during clean-up. Always wear proper protective clothing to prevent skin or eye contact.

Methods and material for containment and cleaning up

Methods for Containment Absorb and contain small spills with sand or fullers earth.

Methods for Clean-Up Use clean non-sparking tools to collect absorbed material. Sweep up absorbed material and shovel into suitable containers for disposal.
Large spills should be diluted and pumped into approved containers for disposal in accordance with all local, state, and federal laws and regulations.

Prevention of Secondary Hazards Released product which has evaporated forms smooth, slippery surface on floors, posing an accident risk.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling

Always wear proper protective clothing when handling. Do not breath vapors. Avoid eye, skin and clothing contact when transferring from container. Flammable liquid - keep away from heat, sparks and flame. Never transfer liquid within 35 feet (11m) of an open flame. To reduce potential of sudden release of pressure, loosen closures slowly and cautiously before opening. To reduce potential of static discharge, effectively bond and ground containers when transferring material. Protect containers from physical damage or punctures resulting in leakage. Keep containers tightly closed when not in use. Do not reuse shipping containers. Empty containers retain vapors and must be treated as having the same hazards as containers full of liquid. Many plastics are attacked by this product. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only with adequate ventilation. Use spark-proof tools and explosion-proof equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Store in accordance with 29 CFR §1910.106 Flammable and Combustible Liquids, BOCA National Fire Prevention Code, NFPA 30 Flammable and Combustible Liquids Code and all local codes and regulations. Store in a cool, well-ventilated area at least 35 feet (11m) from open flames or other sources of ignition. Always store product in the original shipping container. Tightly close storage containers after transfer. Vapors can travel to a source of ignition and flash back. Moisture, in any form will contaminate this product, rendering it unusable. Retain all original labels. Store away from foodstuffs or animal feed. Prevent container damage. Store locked up.

Incompatible Materials

Avoid strong oxidizing agents, such as peroxides, nitrates and hypochlorites; aluminum and zinc. Deteriorates many plastics. Will hydrolyze in the presence of water, liberating boric acid.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Acetone 67-64-1	STEL: 750 ppm TWA: 500 ppm	TWA: 1000 ppm TWA: 2400 mg/m ³ (vacated) TWA: 750 ppm (vacated) TWA: 1800 mg/m ³ (vacated) STEL: 2400 mg/m ³ The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors (vacated) STEL: 1000 ppm	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m ³
Methanol 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m ³ (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m ³ (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m ³ (vacated) S*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³

Other Information

When Brazing : Use enough ventilation and local exhaust at the flame site to keep the fumes and gases below the TLV-TWA (Threshold Limit Value - Time Weighted Average) for welding fumes in the brazer's breathing zone and in the general air. Use an approved air-purifying or air supplied respirator when brazing in a confined space or where local exhaust or ventilation does not keep exposure below the TLV-TWA. Refer to the current American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents for the most updated exposure limits.

As outlined by the ANSI/AWS A5.31-92 (A4.1), Specifications For Fluxes For Brazing And Braze Welding, there are five predominant variables, which contribute to the quality and quantity of fumes in the affected area which brazing operators and bystanders are exposed to during the brazing process. These include (but are not limited to):

- 1) Dimension of the brazing area - with attention to ceiling height.
- 2) The total number of brazers working in the given space.
- 3) Depending on the material and process utilized, the rate of formation of fumes, gases or dusts from the process.
- 4) The location of the brazer in relation to the fumes in the affected area.
- 5) Exhaust and/or ventilation available in the brazing area.

Important ! : Read and understand the manufacturer's instructions and precautionary labels on the product. The installation, operation, and maintenance of welding equipment should conform to ANSI Standard Z49.1 Safety in Welding and Cutting, ANSI Standard Z87.1 Occupational and Educational Eye and Face Protection, and OSHA Standard, 29 CFR 1910.

Appropriate engineering controls

Engineering Controls

Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment when handling

Eye/Face Protection

When Transferring / Handling : Due to the possibility of eye contact during material transfer, chemical safety goggles, full face shield, or safety glasses with side shields should be worn

When Brazing : Always wear protective glasses, goggles or full face shield with shade 4 or 5 lenses when brazing. Protective eyewear and eye safety programs should comply with ANSI Standard Z87.1 Occupational and Educational Eye and Face Protection.

Skin and Body Protection

To prevent contact with skin, wear impervious clothing such as gloves, apron, boots, or full-body suits made from neoprene, as appropriate.

Respiratory Protection

When Transferring / Handling : Ventilation may be required when handling or using this product to keep exposure to airborne contaminants below permissible exposure limits. If adequate ventilation is not available during handling or transfer of this product, use NIOSH approved organic vapor respirators with dust, mist and fume filters to reduce the potential of inhalation exposure. Protection provided by air-purifying respirators is limited. Use a positive pressure, air supplied respirator if there is any potential for uncontrolled release, unknown exposure levels, or any other circumstances where air-purifying respirators may not provide adequate protection. Respiratory protection programs must follow OSHA's 29 CFR 1910.134 And ANSI Z88.2 requirements where there may be the potential for airborne exposure.

General Hygiene Considerations

Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Characteristic
Appearance	Clear, colorless liquid	Odor Threshold	Not determined
Color	Colorless		

Property

The physical data listed above are typical values and should not be read as a product specification

Remarks • Method

pH	Not determined	
Melting Point/Freezing Point	-32 °C / -26 °F	
Boiling Point/Boiling Range	58 °C / 137 °F	
Flash Point	-7.7 °C / 18 °F	COC
Evaporation Rate	16	(butyl acetate = 1)
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	6.0%	
Lower Flammability Limit	36.5%	
Vapor Pressure	161 mm Hg	
Vapor Density	1.6	(Air=1)
Specific Gravity	0.850-0.865	
Water Solubility	Decomposes @ 10%	
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

Water, moist air or aqueous liquids will liberate borates from the mixture, rendering it unusable. Keep containers tightly closed when not in use. This product is not sensitive to physical impact.

Incompatible Materials

Avoid strong oxidizing agents, such as peroxides, nitrates and hypochlorites; aluminum and zinc. Deteriorates many plastics. Will hydrolyze in the presence of water.

Hazardous Decomposition Products

Hazardous Decomposition By-products (During Brazing)

Brazing fumes and gases cannot be classified simply. The composition and quantity of the fumes and gases are dependent upon the base metal, the flux 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 maybe 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 2 - Composition Information on Ingredients. Fume ingredients of normal operation include those originating from volatilization, reaction, or oxidation of the materials noted in the above paragraph. Reasonably expected fume constituents include oxides of boron (OSHA PEL of 10 mg/m³ and ACGIH (TLV) of 2 mg/m³) and oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Causes serious eye irritation.
Skin Contact	Harmful in contact with skin.
Inhalation	Harmful if inhaled.
Ingestion	Harmful if swallowed. May cause blindness if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Trimethyl borate 121-43-7	= 6140 mg/kg (Rat)	= 1980 µL/kg (Rabbit)	-
Acetone 67-64-1	= 5800 mg/kg (Rat)	-	-
Methanol 67-56-1	= 5628 mg/kg (Rat)	= 15800 mg/kg (Rabbit)	= 83.2 mg/L (Rat) 4 h = 64000 ppm (Rat) 4 h

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.
STOT - single exposure	Causes damage to organs.
Chronic toxicity	Repeated and/or prolonged exposure by inhalation / absorption may cause systemic poisoning, blindness and death.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Acetone 67-64-1		4.74 - 6.33: 96 h Oncorhynchus mykiss mL/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	EC50 = 14500 mg/L 15 min	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50

Methanol 67-56-1		28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through		
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Persistence/Degradability Not determined.

Bioaccumulation Not determined.

Mobility

Chemical Name	Partition Coefficient
Acetone 67-64-1	-0.24
Methanol 67-56-1	-0.77

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.

US EPA Waste Number

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Acetone 67-64-1		Included in waste stream: F039		U002
Methanol 67-56-1		Included in waste stream: F039		U154

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Acetone 67-64-1	Ignitable
Methanol 67-56-1	Toxic Ignitable

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 UN1993
Proper Shipping Name Flammable liquids, n.o.s. (Contains Trimethylborate, Acetone and Methanol)
Hazard Class 3
Packing Group II
Reportable Quantity (RQ) 5000 lbs for Methanol and Acetone

IATA

UN/ID No UN1993
Proper Shipping Name Flammable liquids, n.o.s. (Contains Trimethylborate, Acetone and Methanol)
Hazard Class 3
Packing Group II

IMDG

UN/ID No UN1993
 Proper Shipping Name Flammable liquids, n.o.s. (Contains Trimethylborate, Acetone and Methanol)
 Hazard Class 3
 Packing Group II
 Marine Pollutant This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION

International Inventories Not determined

US Federal RegulationsCERCLA

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Acetone 67-64-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Methanol 67-56-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

SARA 311/312 Hazard Categories

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

SARA 313

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Methanol - 67-56-1	67-56-1	20	1.0

US State Regulations

California Proposition 65 This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Methanol - 67-56-1	Developmental

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Trimethyl borate 121-43-7	X	X	X
Acetone 67-64-1	X	X	X
Methanol 67-56-1	X	X	X

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards Not determined
	1	3	0	Personal
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Protection Not determined
	1	3	0	

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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