SAFETY DATA SHEET

Section 1: Product and Company Identification

Product Identifier:	**Aluminum Brazing Powder Flux**
Product Use:	Industrial Aluminum Fluxing Agent
Item Code:	3101
Supplier Name:	PowerWeld Inc.
Supplier Address:	2501 Beech Street Valparaiso, IN 46383
Supplier Web Address:	www.powerweldinc.com
Supplier Phone:	219-462-8700 1-800-826-9073
Manufacturer:	The Gasflux Company
Manufacturer Address:	32 Hawthorne Street Elyria, OH 44036
Manufacturer Web Address:	www.gasflux.com
Manufacturer Phone:	1-440-365-1941
Emergency Phone:	CHEMTREC (24-hour) 1-800-424-9300
Prepared By:	PowerWeld Inc.
Preparation Date:	25 August 2016

Section 2: Hazard Identification

Classification:

Acute toxicity – oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritating	Category 2
Aquatic chronic	Category 3

Label Elements: Danger:

Other Hazards:

Hazard Phrases:

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H362 May cause harm to breast-fed children.
- H3xx May cause damage to brain through prolonged or repeated exposure if inhaled.
- H412 Harmful to aquatic life with long-lasting effects.

Precautionary Phrases:

- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash face, hands and any exposed skin thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P301+ IF SWALLOWED:

P310+ Immediately call a POISON CENTER or doctor/physician.
P330 Rinse mouth.
P303+ IF ON SKIN (or hair):
P361+ Remove/Take off immediately all contaminated clothing.
P353 Rinse skin with water/shower.
P304+ IF INHALED:
P340+ Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor/physician.
P305+ IF IN EYES:
P351+ Rinse cautiously with water for several minutes.
P338+ Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P308+ If exposed or concerned:
P313 Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P403+ Store in a well-ventilated place.
P233 Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal plant.

Section 3: Composition/Information on Hazardous Ingredients

HAZARDOUS INGREDIENTS	CAS NUMBER	APPROXIMATE CONCENTRATION (%)
Lithium Chloride	7447-41-8	10 – 30
Zinc Fluoride	7783-49-5	1 – 5
Aluminum Potassium Fluoride	7789-23-3	1 – 5
Potassium Fluoride	7789-23-3	5 – 15
Tripotassium Hexafluoroaluminate	13775-52-5	1 – 5
Zinc Chloride	7646-85-7	1 – 5
Lithium Fluoride	7789-24-4	1 – 5
Cryolite	13775-53-6	0.5 – 1
Sodium Fluoride	7681-49-4	0.15 – 1
Zinc Oxide	1314-13-2	< 0.50

Section 4: First-aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist or if unconscious.

Ingestion: Induce vomiting ONLY if the victim is fully conscious. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Eye Contact: Immediately flush with plenty of clean water for at least 15 minutes. Make sure to flush under the eyelids. Consult a physician for definitive treatment.

Skin Contact: Remove with soap and water. Continue flushing with water for several minutes. Use skin cream to counter resulting dryness. Consult a physician if irritation continues or if large skin area is affected.

Symptoms: No data available

NOTE: In all severe cases, contact physician immediately. Local telephone operators can provide number of regional poison control centre.

Section 5: Fire-fighting Measures

Flammable:	No
Means of Extinction:	None – product is inherent retardant
Auto-ignition Temperature:	Not applicable
Hazardous Combustion Products:	Not applicable
Explosion Data Sensitivity to Mechanical Impact:	Not applicable
Explosion Data Sensitivity to Static Discharge:	Not applicable
Special Equipment:	See below
Precautions for Fire Fighters:	Metal halide and toxic fumes produced. Use self-contained breathing apparatus.

Section 6: Accidental Release Measures

Protective Equipment:	See Section 8
Emergency Procedures:	Avoid contact with eyes and skin. Avoid dust formations.
Leak or Spill Procedure:	Prevent further leakage or spillage if safe to do so. Sweep up and shovel into suitable containers for disposal. Dilute and wash remaining with water and dispose of in accordance with local, regional and federal regulations.

Section 7: Handling and Storage

Handling Procedures and Equipment:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protection recommended in Section 8. Wash thoroughly after handling. Use only in well-ventilated areas. Do not eat or smoke when using this product. Do not breathe dust/fume/gas/mist/vapour/spray. Protect container from physical damage.
Storage Requirements:	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.
Incompatibilities:	Strong acids and concentrated oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Exposure Limits:

HAZARDOUS INGREDIENTS	CAS NUMBER	ACGIH TLV (mg/m^3)
Zinc Fluoride	7783-49-5	TWA: 2.5
Potassium Fluoride	7789-23-3	TWA: 2.5
Tripotassium Hexafluoroaluminate	13775-52-5	TWA: 2.5
Lithium Fluoride	7789-24-4	TWA: 2.5
Cryolite	13775-53-6	TWA: 2.5
Sodium Fluoride	7681-49-4	TWA: 2.5
Zinc Oxide	1314-13-2	TWA: 5.0 STEL: 10

Engineering Controls: Use enough ventilation and local exhaust at the flame site to keep the fumes below the exposure limits listed above. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Showers and/or eyewash stations are recommended.

Personal Protective Equipment:	Eyes – Chemical goggles or full face shield. Where eye contact could occur, chemical splash proof goggles are recommended. Use appropriate shaded eye protection when brazing. Skin - Wear impervious protective clothing, including boots, rubber gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. 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 - Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes and clothing. Wash hands and face before breaks and immediately after handling the product. Avoid breathing vapours, mist or gas.

Section 9: Physical and Chemical Properties

Physical State:	Solid
Odour and Appearance:	Odourless grey/white powder
Odour Threshold (ppm):	Not determined
pH:	3 – 5
Melting Point:	515 – 630°C
Freezing Point:	Not applicable
Boiling Point:	Not determined
Flashpoint:	Not determined
Upper Flammable Limit (% by volume):	Not applicable
Lower Flammable Limit (% by volume):	Not applicable
Solubility in Water:	10 g/l @ 20°C

Section 10: Stability and Reactivity

Chemical Stability:	Not determined
Possible Hazardous Reactions:	Release of hydrogen fluoride and hydrogen chloride upon contact with strong acids.
Conditions to Avoid:	None if handled according to directions.
Materials to Avoid (Incompatibilities):	Strong acids and concentrated oxidizing agents.
Conditions of Reactivity:	Exothermic reaction with water.
Hazardous Decomposition By-Products:	Pyrolysis (cleavage of hydrogen fluoride and hydrogen chloride at temperatures > 700°C). Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and welding consumables used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coating on the metal being welded (i.e. paint, painting, galvanizing), the number of welders, the volume of the work area, the quality and the amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from the cleaning and degreasing activities). When an electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Fume and gas decomposition, and not the ingredients in the electrode, are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration. Also, new

	compounds not in the electrodes may form. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in Section 3, plus those from the base metal coating, etc., as noted above. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.
Hazardous Polymerization:	Not applicable

Section 11: Toxicological Information

Skin Contact:	Causes skin irritation.
Skin Absorption:	Not known as a skin absorbent.
Eye Contact:	Causes serious eye irritation.
Inhalation:	May cause damage to the brain through prolonged or repeated inhalation.
Ingestion:	Harmful if swallowed.
Effects of Acute Exposure:	May lead to nausea and vomiting if ingested. Can cause chemical burn to digestive system and toxic effects due to lithium ion. Irritant to respiratory system. Lithium dust and fumes absorbed through the lungs may cause lung damage. Pre-existing lung disorders will be aggravated. Can cause dermatitis. Possibility of chemical burns to the skin. Existing skin disorders may be aggravated. May burn eye surface if in contact with eyes.
Effects of Chronic Exposure:	Coughing, CNS effects, erythema, nausea, kidney effects. Chronic fluoride absorption can result in osseous fluorosis, increased radiographic density of the bones and mottling of the teeth. Read OSHA CFR 1910.1000, July 1,1980 (Standard for Fluorides). Exposure to lithium ions is relatively non-hazardous per two NIOSH studies (HHE 80-036-422 and HHE 77-59-496) Chronic exposure to lithium may result in neuromuscular effects, hyperactive reflexes, and weight loss.
Irritancy of Product:	See above
Sensitization to Product:	See above
Carcinogenicity:	This product does not contain any known carcinogens.
Reproductive Effects:	May cause harm to breast-fed children.
Respiratory Sensitization:	See above
Toxicological Data:	Not available

Section 12: Ecological Information

Aquatic and Terrestrial Toxicity:	Do not let this product enter into drains or waterways and do not store on public depositories. This product is harmful to aquatic life with lasting effects.

Section 13: Disposal Considerations

NOTE: Always dispose of waste in accordance with local, provincial and federal regulations.

Safe Handling:	See Section 8
Methods of Disposal:	Dispose of waste in accordance with all federal, regional and local regulations.

Section 14: Transportation Information

UN Identification Number:	UN2331
Proper Shipping Name:	Corrosive solid, nos(Zinc fluoride and potassium bifluoride)
Hazardous Class or Division:	8
Packing Group:	III

Section 15: Regulatory Information

There are no relevant regulatory notes available for this product.

Section 16: Other Information

Preparation Date:	25 August 2016
Date of Last Revision:	25 August 2016

This SDS format is in accordance with GHS. PowerWeld Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Product use and conditions of use are beyond the control of PowerWeld. Warranty of materials is limited to test results of product performance as detailed in certificates of compliance. Interpretation of test results is the responsibility of end-user. No other warranties, expressed or implied, are made.