SAFETY DATA SHEET

Section 1: Product and Company Identification

Product Identifier:	**Low Temperature Silver Brazing Paste Flux**
Product Use:	All-purpose white paste flux for brazing with silver alloys
Item Code:	LT14, LT12, LT1, LT5, LT35
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
Emergency Phone:	CHEMTREC (24-hour) 1-800-424-9300
Prepared By:	PowerWeld Inc.
Preparation Date:	9 September 2016

Section 2: Hazard Identification

Classification:

Acute toxicity – oral	Category 4
Acute toxicity – dermal	Category 4
Acute toxicity – inhalation (vapours)	Category 2
Skin corrosion/irritation	Category 1C
Serious eye damage/eye irritation	Category 1
Reproductive toxicity	Category 2

Label Elements: Danger:

Hazard Phrases

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H331 Toxic if inhaled.
- H361 Suspected of damaging fertility or the unborn child.
- H412 Harmful to aquatic life with long-lasting effects.

Precautionary Statements

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P281 Use personal protective equipment as required.
- P261 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash face, hands and any exposed skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P284 Wear respiratory protection.
- P308+ If exposed or concerned:

P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P313 Get medical advice/attention.
P301+ IF SWALLOWED:
P310+ Immediately call a POISON CENTER or doctor/physician.
P330 Rinse mouth.
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.
P302+ IF ON SKIN:
P361+ Remove/Take off immediately all contaminated clothing.
P353 Rinse skin with water/shower.
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 (%)
Boric Acid	10043-35-3	40 – 50
Potassium Fluoride	7789-23-3	15 – 25
Potassium Bifluoride	7789-29-9	10 – 20
Water or wetting agent	Proprietary	Balance

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: 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. Symptoms may be delayed. May cause

mottling of teeth, damage to bone and fluorosis. Exposure may aggravate pre-existing respiratory or skin problems.

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:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Auto-ignition Temperature:	Not available
Hazardous Combustion Products:	Not available
Explosion Data Sensitivity to Mechanical Impact:	Not available
Explosion Data Sensitivity to Static Discharge:	Not available
Special Equipment:	See below
Precautions for Fire Fighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

Protective Equipment:	See Section 8
Emergency Procedures:	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
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 federal, state, and local regulations.

Section 7: Handling and Storage

Handling Procedures and Equipment:	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. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Activity Temperature Range: 1050-1600°F / 565-870°C Recommended Base Metals: All brazeable ferrous and non-ferrous metals, except those with aluminum or magnesium as a constituent. Also used to braze carbides.
Storage Requirements:	Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up.
Incompatibilities:	Strong acids; alkalis; elemental potassium; concentrated oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Exposure Limits:

HAZARDOUS INGREDIENTS	CAS NUMBER	ACGIH TLV (mg/m^3)	OSHA PEL (mg/m^3)
Boric Acid	10043-35-3	STEL: 6(inhal) TWA: 2(inhal)	-

Potassium Fluoride	7789-23-3	TWA: 2.5(fume)	TWA: 2.5(fume) TWA: 2.5(dust) (vacated) TWA: 2.5
Potassium Bifluoride	7789-29-9	TWA: 2.5(fume)	TWA: 2.5(fume) TWA: 2.5(dust) (vacated) TWA: 2.5

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 white paste
Odour Threshold (ppm):	Not determined
pH:	7.2
Melting Point:	565°C (1050°F)
Freezing Point:	Not applicable
Boiling Point:	Not determined
Flashpoint:	Non-flammable
Upper Flammable Limit (% by volume):	Not applicable
Lower Flammable Limit (% by volume):	Not applicable

Section 10: Stability and Reactivity

Chemical Stability: Stable under recommended storage conditions.

Possible Hazardous Reactions: None under normal processing.

Conditions to Avoid: Water, moist air, or aqueous liquids will liberate boric acid from the mixture, rendering it unusable.

Materials to Avoid (Incompatibilities): Strong acids; alkalis; elemental potassium; concentrated oxidizing agents.

Conditions of Reactivity: Not applicable

Hazardous Decomposition By-Products: 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 severe skin burns. Harmful in contact with skin.
Skin Absorption:	See above
Eye Contact:	Causes severe eye damage.
Inhalation:	Toxic if inhaled.
Ingestion:	Harmful if swallowed.
Effects of Acute Exposure:	No additional information available.
Effects of Chronic Exposure:	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. Symptoms may be delayed. May cause mottling of teeth, damage to bone and fluorosis. Exposure may aggravate pre-existing respiratory or skin problems.
Irritancy of Product:	See above
Sensitization to Product:	See above
Carcinogenicity:	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive Effects:	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.
Respiratory Sensitization:	See above
Toxicological Data:	<u>Boric Acid</u> Oral, rat – 2660 mg/kg (LD50) Dermal, rabbit – > 2000 mg/kg (LD50) Inhalation, rat – 0.16 mg/L, 4hr (LC50)

Potassium Fluoride

Oral, rat – 245 mg/kg (LD50)

Section 12: Ecological Information

Aquatic and Terrestrial Toxicity:	Harmful to aquatic life with long lasting effects.
Persistence and Degradability:	Not determined
Bio accumulative Potential:	Not determined.
Soil Mobility:	Boric acid: -0.757 (partition coefficient)

Section 13: Disposal Considerations

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

Safe Handling:	See Section 7
Methods of Disposal:	Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: Transportation Information

UN Identification Number:	UN1759
Proper Shipping Name:	Corrosive solid, n.o.s. (Potassium fluoride, Potassium bifluoride)
Hazardous Class or Division:	8
Packing Group:	III

Section 15: Regulatory Information

California Proposition 65:	This product does not contain any Proposition 65 chemicals.
U.S. State Right to Know:	Potassium Fluoride New Jersey, Pennsylvania Potassium Bifluoride New Jersey, Pennsylvania

Section 16: Other Information

Preparation Date:	9 September 2016
Date of Last Revision:	9 September 2016

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