SAFETY DATA SHEET

Section 1: Product and Company Identification

Product Identifier:	**High Temperature Silver Brazing Paste Flux**
Product Use:	High temperature brazing of all ferrous, nickel and non-ferrous alloys except aluminum and magnesium.
Item Code:	HT12, HT1, HT5
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:	19 September 2016

Section 2: Hazard Identification

Classification:	Acute toxicity	Category 4
	Serious eye damage/eye irritation	Category 1
Label Elements:	Danger	

Hazard Phrases

H302 Harmful if swallowed.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.

Precautionary Phrases

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash face, hands and any exposed skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P281 Use personal protective equipment as required.
P308+ If exposed or concerned:
P313 Get medical advice/attention.
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.
P301+ IF SWALLOWED:
P330+ Rinse mouth.
P310 Immediately call a POISON CENTER or doctor/physician.

P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal facility.

Section 3: Composition/Information on Hazardous Ingredients

HAZARDOUS INGREDIENTS	CAS NUMBER	APPROXIMATE CONCENTRATION (%)
Potassium Fluoroborate	14075-53-7	35 – 50
Potassium Pentaborate	11128-29-3	20 – 35
Water and Wetting Agent	*Proprietary*	Balance
Potassium Bifluoride	7789-29-9	10 – 30
Boron	7440-42-8	< 1
Boric Acid	10043-35-3	< 1

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: Rinse mouth. 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. Immediately 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: May cause irritation and burns to the respiratory tract, symptoms may include coughing, sore throat, and laboured breathing. May cause eye burns and permanent eye damage. Symptoms may be delayed. May cause brain and kidney damage. May cause nausea, vomiting, stomach ache, and diarrhea. 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: 1050-1700°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.

Storage Requirements: Keep containers tightly closed in a dry, cool 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)
Potassium Fluoroborate	14075-53-7	TWA: 2.5(fume)	TWA: 2.5(fume) TWA: 2.5(dust) (Vacated) TWA: 2.5
Potassium Pentaborate	11128-29-3	STEL: 6(inhalable) TWA: 2(inhalable)	-
Potassium Bifluoride	7789-29-9	TWA: 2.5(fume)	TWA: 2.5(fume) TWA: 2.5(dust) (Vacated) TWA: 2.5
Boric Acid	10043-35-3	STEL: 6(inhalable) TWA: 2(inhalable)	-

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 black paste
Odour Threshold (ppm):	Not determined
pH:	7.2
Melting Point:	566°C / 1100°F
Freezing Point:	Not applicable
Boiling Point:	Not determined
Flashpoint:	Not applicable
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:	Exposure to air may dry flux.
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:	Avoid contact with skin.
Skin Absorption:	See above
Eye Contact:	Causes serious eye damage.
Inhalation:	Avoid breathing vapours or mists.
Ingestion:	Harmful if swallowed.
Effects of Acute Exposure:	No additional information available.
Effects of Chronic Exposure:	May cause irritation and burns to the respiratory tract, symptoms may include coughing, sore throat, and laboured breathing. May cause eye burns and permanent eye damage. Symptoms may be delayed. May cause brain and kidney damage. May cause nausea, vomiting, stomach ache, and diarrhea. 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:	Not classified as a human carcinogen.
Reproductive Effects:	Not applicable
Respiratory Sensitization:	See above
Toxicological Data:	Potassium fluoroborate Oral, rat – 5854 mg/kg (LD50) Boron Oral, rat – 650 mg/kg (LD50) Boric Acid Oral, rat – 2660 mg/kg (LD50) Dermal, rabbit - >2000 mg/kg (LD50) Inhalation, rat – 0.16 mg/L,4 hr (LC50)

Section 12: Ecological Information

Aquatic and Terrestrial Toxicity:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and Degradability:	Not determined
Bio accumulative Potential:	Not determined
Soil Mobility:	Not determined

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

This product is not considered a dangerous good per current transportation regulations.

Section 15: Regulatory Information

California Proposition 65:	This product does not contain any Proposition 65 chemicals.
U.S. State Right to Know:	Potassium Fluoroborate

New Jersey, Pennsylvania

Potassium Bifluoride

New Jersey, Pennsylvania

Boron

New Jersey

Section 16: Other Information

Preparation Date:	19 September 2016
Date of Last Revision:	19 September 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.