MATERIAL SAFETY DATA SHEET

MAY BE USED TO COMPLY WITH OSHA'S HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200 AND AND SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) OF 1986 PUBLIC LAW 99-499. STANDARD SHOULD BE CONSULTED FOR SPECIFIC REQUIREMENTS.

SECTION I (IDENTIFICATION)

MANUFACTURER/ SUPPLIERS NAME: **HIGH PERFORMANCE PRODUCTS**
1220 SHAPPERT DRIVE
MACHESNEY PARK, IL 61115

EMERGENCY PHONE: 815-985-0441

PRODUCT NAME: **HPP 500**

PRODUCT CLASSIFICATION: **Silver Brazing Flux**

SECTION II (HAZARDOUS INGREDIENTS/IDENTITY INFORMATION)

IMPORTANT: This section covers materials from which this product is manufactured. The fumes and gases produced during normal use of this product is covered in Section V. The term "Hazardous Materials" should not be interpreted as a term required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200). The chemicals and compounds reportable by Section 313 of SARA are marked by the symbol #.

WARNING: This product contains or produces a chemical known to the State of California to cause birth defects (or other reproductive harm) and cancer. (California Health & Safety Code 25249.5 et seq.)

		Percent	EXPOSURE LIMIT (mg/m³)	
INGREDIENTS	**CAS NUMBER**	**RANGE**	**OSHA PEL**	**ACGIH TLV**
Water	7732-18-5	balance	n .a.	n.a.
Boric Acid	10043-35-3	30 - 45	n.a.	15
Potassium Bifluoride	7789-29-9	10 - 20	2.5 (as F)	1
Potassium Pentaborate	11128-29-3	5 - 10	5	10
Sodium Dodecyl Sulfate	151-21-3	1 - 4	2.5	2.5
Potassium Tetra borate	1332-77-0	20 - 35	2.5	1

NOTE: When used as intended, fumes of boron oxide (B2O3) are given off which are hazardous.

SECTION III (PHYSICAL DATA)

Smooth paste, no characteristic odor. SHIPPING CLASSIFICATION: POTASSIUM BIFLUORIDE SOLUTION - NA 1811

SECTION IV (FIRE AND EXPLOSION DATA)

Nonflammable. Brazing flames can ignite combustibles. Refer to American National Standard Z49.1 for fire protection during welding/brazing. Rating under Fire Protection 704: Health, 3: Flammability, 0: Reactivity, 0.
Special firefighting procedures: Use NIOSH approved equipment.

SECTION V (REACTIVITY DATA)

STABILITY: Stable **CONDITIONS TO AVOID**: None
INCOMPATIBILITY (conditions to avoid): Acetic anhydride, elemental potassium.
HAZARDOUS POLYMERIZATION: Will not occur.

Brazing fumes cannot be classified simply. The composition and quantity of both are dependent upon the metal being brazed, the process, procedure, and the filler material used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being soldered (such as paint, plating, or galvanizing), the number of welders and the volume of the work area, the quality and the amount of ventilation, position of the worker'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 material is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Fume and decomposition products, not the ingredients in the flux, are important. Decomposition products include those originating Section II, plus those from the base metal and coating, etc., as noted above. These components are virtually always present as complex oxides and not as metals (Characterization of Arc Welding Fume: American Welding Society). Reasonably expected fume constituents of the fume could include complex oxides of boron (boron oxide), which are hazardous.
Monitor fume levels. One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample inside the worker's helmet, if worn, or in the worker's breathing zone. ANSI/AWS F1.1 available from the American Welding Society. P.O. Box 351040, Miami, FL 33135.

SECTION VI (HEALTH HAZARD DATA)

Threshold Limit Value: OSHA PEL has not been established for this mixture (15 mg/m³ for B2O3) and 1.8 mg fluoride fumes per cu/m when heated. The limit for general welding fumes not otherwise classified is 5 mg/m³. The **ACGIH 1984-85** preface states: "The **TLV-TWA** should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section V for specific fume constituents which may modify the TLV. TARGET ORGAN STATEMENT: Causes skin and eye burns. Harmful if inhaled or absorbed through the skin.

Effects of Overexposure: **FUMES AND GASES** can be dangerous to your health. Primary routes of entry are the respiratory system, eyes, ingestion, and/or skin. Preexisting respiratory or allergic conditions may be aggravated in some individuals. **SHORT-TERM (ACUTE) OVEREXPOSURE** to fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes. EYE CONTACT causes irritation and may cause burns. **SKIN CONTACT** may cause irritation and possibly fluoride burns which may not be immediately painful or evident, especially on prolonged contact. This material may be absorbed through the skin resulting in systemic poisoning. Symptoms of poisoning are similar to those that occur with ingestion. INHALATION may cause respiratory tract and mucous membrane irritation. Symptoms include nasal discharge and nosebleeds, soughing, sore throat and labored breathing. Severe exposure may cause bronchospasm and pulmonary edema. **LONG-TERM (CHRONIC) OVEREXPOSURE** to FLUORIDES over years may produce mottling of teeth, embrittlement, and decalcification of bones, and increased calcification of ligaments and vertebrae resulting in spinal stiffness (fluorosis). Prolonged absorption of BORON COMPOUNDS may cause mild gastrointestinal irritation, loss of appetite, nausea, and erythematous rash. Dryness of skin and mucous membranes, loss of hair, conjunctivitis, and kidney injury have also been observed. Reproductive effects have been observed in laboratory animals. Primary route of entry is the respiratory system. ARC RAYS can injure eyes and burn skin. **WELDING FUMES** - Welding fumes (not otherwise classified) are considered to be carcinogenic defined with no further categorization by NIOSH.

Emergency & First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by The American Red Cross. **SWALLOWING:** Call a physician or your poison control center at once. Advise of Section II. **SKIN:** Wash thoroughly with water to remove all residue. If a rash develops, call a physician. **INHALATION:** Remove to fresh air. **EYES:** flush with water for at least 15 minutes to remove all residue. **Get medical attention immediately. Corneal damage is very possible!**

Carcinogenicity when present	NTP	NIOSH Welding fumes (n.o.c.)	IARC MONOGRAPHS	OSHA regulated

SECTION VII (STORAGE, HANDLING AND SPECIAL PRECAUTIONS)

Read and understand the manufacturer's instructions and precautionary label on this product. See American National Standard Z49.1, Safety in Welding and Cutting, published by the American Welding Society, P.O. Box 351040, Miami, FL 33135 and **OSHA** Publication 2206 (29CFR 1910), U.S. Government Printing Office, Washington, D.C. 20402 for more detail on the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the **TLV's** in the workers breathing zone and the general area. Train the worker to keep his head out of the fumes. Maintain air flow away from user to exhaust all dusts and fumes, so that the TLV is never exceeded.

Respiratory Protection: Use respirable fume respirator or air supplied respirator when soldering in confined space or where local exhaust or ventilation does not keep exposure below the TLV.

Eye Protection: Wear helmet or face shield and chemical safety goggles.

Protective Clothing: Wear head, hand, and body protection which help to prevent injury from the flux. See ANSI Z49.1. At a minimum, this includes chemical impervious gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, and any other equipment used in soldering operations to avoid any contact.

Waste: Dispose of any grinding dust and waste residues in accordance with all federal, state and local regulations. If material is spilled or released, contain spillage, absorb, sweep up, dispose. Flush area with water to a chemical sewer.

EPA waste DOO2. CORROSIVE.

Storage: Keep material sealed before use. Store at ambient temperature

Wash thoroughly after handling to remove all residue. Remove and professionally wash contaminated clothing before reuse.
