

**MATERIAL SAFETY DATA SHEET****PLEASE CAREFULLY READ AND UNDERSTAND THIS MATERIAL SAFETY DATA SHEET BEFORE USING THIS PRODUCT**

For Welding Consumables and Related Products

May be used to comply with OSHA's Hazards Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

**SECTION I (IDENTIFICATION)**

Manufacturer/Supplier Name: UNIWELD PRODUCTS, INC. Emergency Phone No.: (954) 584-2000  
 2850 Ravenswood Road  
 Fort Lauderdale, FL 33312

Product Name(s): **UNI-1000 BLACK**  
 Product Classification: **SILVER BRAZING PASTE FLUX**

**SECTION II (HAZARDOUS INGREDIENTS/IDENTITY INFORMATION)**

**Important:** This section covers the materials from which these products are manufactured. The fumes and gases produced during normal use of these products are covered by Section V. The term "Hazardous Materials" should be interpreted as a term required and defined in OSHA Hazard Communication Standard 26 CFR 1910.1200 and it does not necessarily imply the existence of hazard.

INGREDIENT	% WEIGHT	CAS NO.	EXPOSURE LIMIT (mg/m <sup>3</sup> )	
			OSHA PEL	ACGIH TLV
POTASSIUM FLUOROHYDROBORATE	20-40	12228-71-6	2.5 PPM	N/A
POTASSIUM TETRABORATE	15-25	1332-77-0	5.0 PPM	N/A
BORIC ACID	30-45	10043-35-3	10 PPM	N/A
POTASSIUM TETRA FLUOROBORATE	7-15	14075-53-7	2.5 PPM	N/A

**SECTION III (PHYSICAL DATA)**

Boiling point:	N/A	Specific Gravity (Water = 1):	1.6
Vapor Pressure (mm Hg):	N/A	Percent volatile by volume:	30%
Vapor density (Air = 1):	N/A	Evaporation rate (Butyl Acetate = 1):	0.3
Melting point:	500°C	Solubility in water:	moderate
Reactivity in water	None	Appearance and Odor:	Black odorless paste

**SECTION IV (FIRE AND EXPLOSION HAZARD DATA)**

Flash point:	None
Extinguishing media:	Not needed
Unusual fire and explosion hazard:	Fluorides
Special fire fighting procedures:	Normal caution when dealing with chemicals
Auto ignition temperature:	None
Flammable limits:	Lower-N/A, Upper-N/A

**SECTION V (REACTIVITY DATA)**

Stability:	Product is stable
Incompatibility (materials to avoid):	Glass or porcelain
Conditions to avoid:	Excess heat
Hazardous decomposition products:	Fluorides with high heat
Hazardous Polymerization:	Will not occur
Conditions to avoid:	N/A

Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedures, and electrodes 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 welded (such as paint, plating or galvanizing), the number of welds and volume of the work area, quality and amount of ventilation, 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 cleaning and degreasing activities).

When the electrode is consumed, the fume and gas decomposition products generated are different in percentage and composition from the ingredients listed in Section II. Fume and gas decomposition products, not the ingredients in the electrode, are important. Decomposition products generated in normal operations include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II plus those from the base metal, coating, etc., as noted above.

It is understood, however, that the elements and/or oxides to be mentioned are virtually always present as complex oxides and not as metals (Characterization of Arc Welding Fume: American Welding Society). The elements or oxides listed below correspond to the ACGIH categories located in "TLV Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment."

Reasonably expected constituents of the fume would include: fluorides and complex oxides of iron, chromium, nickel, manganese and silicon. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

One recommended way to determine the composition and quantity of fumes to which workers are exposed is to take an air sample inside the welder's helmet. If worn, or in the worker's breathing zone. (See ANSI/AWS F1.1, available from the American Welding Society, P.O. Box 351040, Miami, FL 33135. Also from AWS is F1.3, "Evaluating Contaminants in the Welding Environment - A Sampling Strategy Guide," which gives additional advice on sampling.) At a minimum, materials listed in this section should be analyzed for the following:

**SECTION VI (HEALTH HAZARD DATA)**

**Primary Routes of Entry to Body:** Fume inhalation, ingestion, skin, and eyes.

▽ **WARNING: DO NOT BREATHE FUMES!**

**Signs and Symptoms of Exposure:** Salvation, Coughing, Choking, Chills, May cause weight loss, Brittle Bones, Anemia and Stiff Joints.

**Medical Conditions Generally Aggravated by Exposure:** Any weakness of the lungs, kidneys or liver will be aggravated.

**Chemical Listed as Carcinogen or Potential Carcinogen:** None

**(Health and Hazards) Threshold Limit Value:** The ACGIH recommended general limit for welding fume NOC (Not Otherwise Classified) is 5 mg/m<sup>2</sup>. 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

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specific fume constituents which may modify this TLV.

**Emergency and First Aid procedures:** Inhalation: Remove victim to fresh air. Eyes: Flush with water for 10 minutes. Call a physician. Skin: Wash thoroughly with water. Ingestion: If patient is fully conscious, give large amounts of water. Obtain medical attention immediately.

**AVOID CONTACT WITH SKIN AND CLOTHING.**

▽ **WARNING: CALIFORNIA PROPOSITION 65:** This product, when used for welding, soldering, brazing, cutting and other metal working or flame processes, produces fumes, particulates, residues and other by-products which contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. ▽ **WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**SECTION VII (PRECAUTIONS FOR SAFE HANDLING AND USE/APPLICABLE CONTROL MEASURES)**

Read and understand the manufacturer's instructions and the precautionary label on the product. (See American National Standard Z-49.1, "Safety in Welding and Cutting," published by the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA Publication 2206 (29 CFR 1910), US Government Printing Office, Washington, DC 20402 for more details on the following):

**PRECAUTION TO BE TAKEN IN HANDLING AND STORAGE:** Store in plastic containers in cool area. Do not store in glass or porcelain container. Wash thoroughly after use.

**WORK/HYGIENIC PRACTICES:** Avoid contact with skin, eyes and clothing.

**VENTILATION:** Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLV's in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.

▽ **WARNING: DO NOT BREATHE FUMES!**

**RESPIRATORY PROTECTION:** Use NIOSH approved or equivalent respirable fume respirator or air supplies respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below TLV.

**EYE PROTECTION:** Wear helmet or use face shield with filter lens. As a rule of thumb, begin with shade #14. Adjust if needed by selecting the next lighter or darker shade number.

**PROTECTIVE CLOTHING:** Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z-49.1. At a minimum, this includes welder's gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

**PROCEDURE FOR CLEANUP OR SPILLS OR LEAKS:** Clean up paste and flush remaining material with lots of water.

**WASTE DISPOSAL:** Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container or liner in an environmentally acceptable manner and in full compliance with federal, state and local regulations.

**SPECIAL PRECAUTIONS:** IMPORTANT. MAINTAIN EXPOSURE BELOW PEL/TLV. USE INDUSTRIAL HYGIENE MONITORING TO ENSURE THAT YOUR USE OF THIS MATERIAL DOES NOT CREATE EXPOSURES WHICH EXCEED PEL/TLV. Always use exhaust ventilation. Refer to the following sources for important additional information: ANSI Z-49.1. The American Welding Society, P.O. Box 351040, Miami FL 33135; OSHA (29 CFR 1910), US Dept. of Labor, Washington, DC 20210.

**OTHER PRECAUTIONS:** Keep container away from excessive heat.

Uniweld Products, Inc. believes this data to be accurate and to reflect qualified expert opinion regarding current research. Uniweld Products, Inc. cannot make any expressed or implied warranty as to this information.