

MATERIAL SAFETY DATA SHEET

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

For Manufactured Welding Consumables and Related Products. May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200 and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499. 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-1850, UNI-1850FC
Product Classification: COPPER BASE WELDING AND BRAZING WIRE AND ROD

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. The chemicals or compounds reportable by Section 313 of SARA are marked by the symbol #.

INGREDIENT	CAS NO.	EXPOSURE LIMIT (mg/m ³)	
		OSHA PEL	ACGIH TLV
COPPER#	7440-50-8	N/A	0.05 (fume)
ZINC#	7440-66-6	N/A	5 (fume)
NICKEL#	7440-02-0	N/A	1
SILICON	7440-21-3	N/A	10
BORIC ACID	10043-35-3	N/A	5
BORAX GLASS	1303-96-4	N/A	1
IRON	7439-89-6	N/A	10
MANGANESE#	7469-96-5	N/A	0.2
TIN	7440-31-5	N/A	2
SILVER#	7440-22-4	N/A	0.01
LEAD	7439-29-1	N/A	0.15

SECTION III (PHYSICAL DATA)

Boiling Point: N/A
Melting Point: 1600-1900
Vapor Pressure: N/A
Vapor Density (AIR=1): N/A
Solubility in Water: N/A
Specific Gravity: 8.3-8.5 G/CC
Evaporation Rate: N/A
Appearance and Odor: Bare or coated bronze rod. No Odor

SECTION IV (FIRE AND EXPLOSION HAZARD DATA)

Nonflammable. Welding arc and sparks can ignite combustibles. Refer to American National Standard Z-49.1 for fire prevention during welding.

SECTION V (REACTIVITY DATA)

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."

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:

HAZARDOUS DECOMPOSITION PRODUCTS

SECTION VI (HEALTH HAZARD DATA)

Threshold Limit Value: The ACGIH recommended general limit for welding fume NOC (Not Otherwise Classified) is 5 mg/m³. 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 this TLV.

Effects of Overexposure:

FUMES AND GASES can be dangerous to your health. Primary route of exposure is inhalation of fumes. Preexisting respiratory or allergic conditions may be aggravated in some individuals.

▽ **WARNING: DO NOT BREATHE FUMES!**

SHORT-TERM (ACUTE) OVEREXPOSURE to welding fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of the nose, throat or eyes. A short term dose of lead can lead to acute encephalopathy. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

LONG-TERM (CHRONIC) OVEREXPOSURE may lead to siderosis (iron deposits in the lungs) and is believed by some investigators to affect pulmonary functions. Chronic exposure to manganese, copper and zinc may cause metal fume fever. Symptoms include fever, fatigue, head and body ache, dryness of the throat, and chills. Chronic exposures may affect the central nervous system leading to emotional disturbance, gait and balance difficulties, and paralysis. Copper overexposure may cause skin and hair discoloration. Nickel, nickel compounds: lung fibrosis or pneumoconiosis. Studies of nickel refinery workers indicated a higher incidence of lung and nasal cancers. Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. Chronic overexposure to lead also results in kidney disease with few, if any symptoms appearing until extensive and most likely permanent kidney damage has occurred. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. There is evidence of miscarriage and stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility, and abnormal menstrual cycles in women. Overexposure to lead also disrupts the blood-forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigability as a result of decreased oxygen carrying capacity in the blood.

ARC RAYS can injure eyes and burn skin.

ELECTRIC SHOCK can kill. See Section VII.

Emergency and First Aid procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross. Eyes and skin: if irritation or burns develop after exposure, consult a physician.

CARCINOGENICITY: Lead, nickel and its compounds should be considered as possible carcinogens.

▽ **WARNING: DO NOT BREATHE FUMES!**

▽ **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 Z49.1; 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), U.S. Government Printing Office, Washington, DC 20402 for more details on any of the following:

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

RESPIRATORY PROTECTION: Use NIOSH approved or equivalent fume respirator or air supplied respirator when welding in a confined space or where local exhaust or ventilation does not keep exposure below PEL/TLVs.

▽ **WARNING: DO NOT BREATHE FUMES!**

EYE PROTECTION: Wear helmet or use face shield with filter lens. As a rule of thumb, begin with Shade Number 14. Adjust if needed by selecting the next lighter and/or darker shade number. Provide protective screens and flash goggles, if necessary, to shield others.

PROTECTIVE CLOTHING: Wear hand, head and body protection which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z49.1. 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 dark non-synthetic clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

Protective gloves are recommended, especially for high temperature applications to prevent burns.

Other: Standard protective equipment used in soldering or (applicable) operations. Conform with all local, state, and federal regulations.

PROCEDURE FOR CLEANUP OF SPILLS OR LEAKS: Not applicable.

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

SPECIAL PRECAUTIONS (IMPORTANT): Maintain exposure below the PEL/TLVs. Use industrial hygiene monitoring to ensure that your use of this material does not create exposures which exceed PEL/TLVs. Always use exhaust ventilation. Refer to the following sources for important additional information: ANSI Z49.1 from the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA (29 CFR 1910) from the U.S. Department of Labor, Washington, DC 20210.

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.