



## MATERIAL SAFETY DATA SHEET

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 SHOULD BE CONSULTED FOR SPECIFIC REQUIREMENTS.

### SECTION I (IDENTIFICATION)

#### Amtec Welding Products, Inc.

**MANUFACTURER/  
SUPPLIERS NAME:** 2800Capital Street  
Wylie, TX 75098

**EMERGENCY  
PHONE:**  
(800) 223-5712

**PRODUCT NAME:** AMTEC 1005FC and 1006FC

**PRODUCT CLASSIFICATION:** Silver Brazing Alloy

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

**IMPORTANT:** This section covers the materials of which the products are manufactured. The fumes and gases produced during normal *use* of this product is covered in Section V. The term "Hazardous" in "Hazardous Ingredients" should not be interpreted as a term required and defined in OSHA Hazard Communication Standard (29 CFR 1910.1200). The chemicals or compounds subject to reporting under Title III in 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.)

<u>INGREDIENTS</u>	<u>CAS NUMBER</u>	<u>PERCENT INGREDIENTS BY WEIGHT)</u>	<u>EXPOSURE LIMIT</u>	
			<u>OSHA PEL</u>	<u>ACGIH-TLV</u> (ng/ma)
Copper #	7440-50-8	10 - 30	0.1	0.2
Silver #	7440-22-4	30 - 60	0.01	0.01
Zinc #	7440-66-6	10 - 30	5	5
Tin	7440-31-5	1 - 7	2	2
Boric Acid	10043-35-3	7 -13	N/A	10
Potassium Bifluoride	7789-29-9	7-13	N/A	2.5
Potassium Tetraborate	1332-77-0	7 -13	N/A	1
Potassium Fluoborate	14075-53-7	0.5 - 1.5	2.5 (as F)	2.5 (as F)
Potassium Fluoride	7789-23-3	7 13	2.5 (as F)	2.5 (as F)

**SECTION III (PHYSICAL DATA) -- Silver wire with flux coating.**

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

Nonflammable: Brazing flames can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during brazing/welding. Rating under National Fire Protection 704: Health - 3; Flammability - 0; Reactivity - 0.

Special fire fighting procedures: Use NIOSH approved positive pressure self-contained breathing apparatus and protective clothing. Toxic metal fumes may be released in fire situation.

### SECTION V (REACTIVITY DATA)

**Stability: Stable** **Conditions to avoid:** Temperatures above 225 C (435 F). **INCOMPATIBILITY** (conditions to avoid): Strong acids and bases, oxidizing agents, acetylene, ammonia, hydrogen peroxide, magnesium metal, ammonium nitrate, hydrogen sulfide, chlorinated rubber. **HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:** Toxic oxides are emitted when heated above the melting point. Emits toxic and corrosive fluoride compounds and may also emit oxides of boron and potassium when heated to decomposition. Toxic and corrosive fluoride compounds are also emitted. **HAZARDOUS POLYMERIZATION:** Will not occur. Welding fumes cannot be classified simply. The composition and quantity are dependent upon the metal being brazed, the process, procedure, and 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 brazed (such as paint, plating or galvanizing), the number of workers and volume of the work area, the quality and amount of ventilation, position of 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 rod is consumed, the fume and gas decomposition products are different in percent and form from the ingredients listed in Section II. Fume and gas decomposition products, not the ingredients in the flux, are important. Decomposition products include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II plus those from the base metal and coating,

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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 would include fluorides (in flux coated brazing rods) and complex oxides of zinc and boron oxide, which is hazardous. Gaseous reaction products may include carbon monoxide and carbon dioxide.

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 face shield, if worn, or in the worker's breathing zone (see ANSUAWS F1.1 available from the American Welding Society, P.O. Box 351040, Miami, FL 33135).

#### **SECTION VI (HEALTH HAZARD DATA)**

**Threshold Limit Value:** 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.

**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. Individuals with Wilson's Disease are at increased risk of COPPER poisoning. **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, coughing, sore throat and labored breathing. Severe exposure may cause bronchospasm and pulmonary edema. Absorption may cause systemic poisoning similar to that which occurs with ingestion. Inhalations of fumes may cause a flu-like illness called 'metal fume fever'. Typically metal fume fever begins four to twelve hours after sufficient exposure to freshly formed fumes. First symptoms are a metallic taste, dryness, and irritation of the throat. Cough and shortness of breath may occur along with a headache, fatigue, nausea, vomiting, diarrhea, and painful spasms of the limbs. Copper poisoning can result in hemolytic anemia and kidney, liver, and spleen damage. Ingestion of large amounts may be fatal. **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). Excessive ZINC intake has been associated with copper deficiency anemia. Prolonged or excessive exposures may result in argyria, a permanent localized blue-grey discoloration of the eye, skin, or mucous membranes. 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. **WELDING FUMES** - Welding fumes (not otherwise classified) are considered to be carcinogenic defined with no further categorization by NIOSH.

**ARC RAYS** can injure eyes and burn skin. **ELECTRIC SHOCK** can kill. See Section VII.

**Emergency & First Aid Procedures:** Call for medical aid. Employ first aid techniques recommended by The American Red Cross. In case of electrical shock, turn off power prior to removal from exposure area and administration of first aid.

**INHALATION:** Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, begin artificial respiration. If no detectable pulse, begin external heart massage.

**SKIN:** Wash affected area with soap and water.

**EYES:** Flush with large amounts of fresh water for at least 15 minutes. Get medical attention immediately. Corneal damage is possible.

**INGESTION:** Seek medical attention.

**Carcinogenicity**  
When Present

**NTP**

**NIOSH**  
Welding Fumes (n.o.c.)

**IARC Monographs**

**OSHA Regulated**

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

Read and understand the manufacturer's instructions and the precautionary label on this 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 (29CFR 1910), U.S. Government Printing Office, Washington, D.C. 20402, for more details 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 airflow 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 brazing in confined space or where local exhaust or ventilation does not keep exposure below TLV.

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