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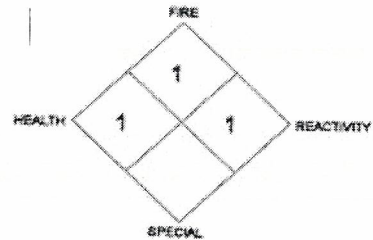
34600 Solon Road • Solon, Ohio 44139-2695  
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24 Hour Response  
Chem Tel (1-800-255-3924)

## MATERIAL SAFETY DATA SHEET

### NFPA HAZARD RATING

4 EXTREME  
3 HIGH  
2 MODERATE  
1 SLIGHT  
0 INSIGNIFICANT



PAGE: 1 OF 3

PRODUCT FAMILY: **CADWELD® ELECTRICAL WELDING MATERIAL**  
MATERIAL TYPES F20, F33, F76, F80, XF19 INCLUDING CA, SB, PB, XL, XF, ACB, ACC, PLUS

DATE PREPARED: 3/8/90

REVISED: 3/03/05

MSDS: 233N

### 1. INGREDIENTS

		EXPOSURE LIMITS (Mg/m <sup>3</sup> )			
INGREDIENTS	CAS #	OSHA PEL	ACGIH TLV	WEIGHT PERCENT	TSCA INV.
COPPER OXIDE	1317-39-1	DUST 1.0 FUME 0.1	DUST 1.0 FUME 0.2	NOT > 80%	YES
ALUMINUM COPPER ALLOY < 60 ALUMINUM < 60 COPPER	7429-90-5 7440-50-8	TOTAL DUST 15.0 RESPIRABLE FRACTION 5.0 DUST 1.0 FUME 0.1	DUST 10.0 FUME 5.0 DUST 1.0 FUME 0.2	NOT > 15%	NO
CALCIUM FLUORIDE	7789-75-5	2.5 AS FLUORIDE	2.5 AS FLUORIDE	NOT > 5%	YES
CALCIUM SILICON	12775-68-7	Ca 5.0 AS CaO Si 5.0	Ca 2 AS CaO Si 10.0	NOT > 5%	YES
TIN	7440-31-5	2.0	2.0	NOT > 10%	YES
ALUMINUM VANADIUM ALLOY* < 45 ALUMINUM < 75 VANADIUM	7429-90-5 7440-62-2	TOTAL DUST 15.0 RESPIRABLE FRACTION 5.0 V <sub>2</sub> O <sub>5</sub> DUST 0.5 FUME 0.1	DUST 10.0 FUME 5.0 V <sub>2</sub> O <sub>5</sub> 0.05	NOT > 5%	NO
COPPER	7440-50-8	DUST 1.0 FUME 0.1	DUST 1.0 FUME 0.2	NOT > 10%	YES

\* TYPE F-33 (CA) ONLY

### 2. PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: N/A  
VAPOR PRESSURE: N/A  
VAPOR DENSITY: N/A  
SOLUBILITY IN WATER: Insoluble, 0  
SPECIFIC GRAVITY (H<sub>2</sub>O=1): 5.5  
MELTING POINT: @ 2000°F (1093°C)  
EVAPORATION RATE (BUTYL ACETATE=1): N/A, V.O.C.=0  
APPEARANCE AND ODOR: Gray-Black Granular Particles; Odorless

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**3. FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT (METHOD USED): Self ignites above 1750°F (Indirect Heating) (954°C).

FLAMMABLE LIMITS: LEL - N/A UEL - N/A

EXTINGUISHING MEDIA: Dry sand or flooding with large amounts of water.

SPECIAL FIRE FIGHTING PROCEDURES: Water application should be at a reasonable distance. Use of hand water buckets or hand storage pumps is not recommended.

UNUSUAL FIRE AND EXPLOSION HAZARD: Self propagating high temperature reaction will occur if heated above ignition (flash point) temperature. Generates molten metal, slag, and dense, dusty smoke. Volatile, combustible decomposition products produced from plastic packaging.

**4. REACTIVITY DATA**

STABILITY: Stable

CONDITIONS TO AVOID: Temperatures above ignition (flash point).

INCOMPATIBILITY (MATERIALS TO AVOID): Typical of problems associated with molten metals.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: None

HAZARDOUS POLYMERIZATION: Will not occur.

**5. HEALTH HAZARD DATA**

ROUTES OF ENTRY: Primary route of entry - Inhalation.

HEALTH HAZARDS: Burns from contact with reaction or reaction products, or from hot equipment. Dust and fumes are irritant to eyes and upper respiratory tract. Inhalation of high concentrations of freshly formed oxide fumes and dusts in the respirable particle size range can cause influenza-like illness termed metal fume fever. Copper oxide dust may by repeated or prolonged inhalation occasionally cause ulceration and perforation of the nasal septum. Long term exposure to copper containing dusts may cause allergic dermatitis.

CARCINOGENICITY: NTP - No IARC MONOGRAPHS - No OSHA REGULATED - No

SIGNS/SYMPTOMS OF EXPOSURE: (See Health Hazards)

EMERGENCY AND FIRST AID PROCEDURES: Standard treatment for burns in event of contact with molten metal, slag, or hot equipment. For inhalation of dust, fume, remove from exposure, provide fresh air, flush eyes with water, consult physician.

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## 6. PRECAUTIONS FOR SAFE HANDLING AND USE

**ACTION TO TAKE FOR SPILLS/LEAKS:** All unused, spilled materials may be swept up for disposal, in accordance with methods outlined below, and Federal, State, and Local regulations.

**WASTE DISPOSAL METHOD:** Contact factory for assistance or dispose of in accordance with Federal, State, and Local regulations.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** Material should be kept dry and stored in "NO SMOKING OR OPEN FLAME" area. Restriction to authorized personnel is recommended.

**OTHER PRECAUTIONS:** For additional information, see American National Standard, Safety In Welding And Cutting, Z49.1 and instructions provided with molds.

## 7. CONTROL MEASURES

**RESPIRATORY PROTECTION:** Normal use precludes use of special protection as material is generally used out of doors, in small quantities and is of short duration.

**VENTILATION:** Local Exhaust - May be necessary if used in confined space. Special - Use of NIOSH approved respirator for dusts and metal fumes in lieu of local exhaust.

**PROTECTIVE GLOVES:** Recommended for handling hot equipment.

**EYE PROTECTION:** Safety glasses recommended and caution to user to avoid direct eye contact with "flash" of light from reaction.

## 8. ADDITIONAL INFORMATION

This product contains compounds which are subject to reporting requirements of Section 313 of Title III of SARA and 40 CFR 372.



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