AMERICAN FILLER METALS

MATERIAL SAFETY DATA SHEET (MSDS)

REVISED 10-2011

For Welding Consumables and Related Products
Conforms to OSHA Hazard Communication Standard 29 CFR 1910.1200
Standard Must Be Consulted for Specific Requirements

SECTION I – IDENTIFICATION

Manufacturer/Supplier Name: American Filler Metals Company	Telephone No.: 713-649-8785
Address: 6015 Murphy Street, Houston, TX 77033	Emergency No.: Chemtrec: 800-424-9300

Trade Name:	Classification:
AFM-60 (ERNiCu-7), AFM-61 (ERNi-1), AFM-62 (ERNiCrFe-5), AFM-65 (ERNiFeCr-1), AFM-82 (ERNiCr-3) AFM-625 (ERNiCrMo-3), AFM-718 (ERNiFeCr-2), AFM-C276 (ERNiCrMo-4), AFM-92 (ERNiCrFe-6), AFM-X (ERNiCrMo-2), AFM-W (ERNiMo-3), AFM-617 (ERNiCrCoMo-1), AFM-622 (ERNiCrMo-10), AFM-B2 (ERNiMo-7), AFM-69 (ERNiCrFe-8), AFM-59 (ERNiCrMo-13), AFM-601 (ERNiCrFe-11)	AWS A5.14 AMS5837, AMS5876, AMS5786 AMS5675, AMS5679, AMS5828
**AFM-67 (ERCuNi)	AWS A5.7

SECTION II – HAZARDOUS MATERIALS / Identity Information

IMPORTANT: This section covers the materials from which the product is manufactured.

Flux or other ingredients	Approx. %	CAS No.	Carcinogenicity	Exposure Limit (mg/m³)	
				OSHA PEL	ACGIH TLV
*Nickel	35-99	7440-02-0	Yes	1	1
*Chromium	0-26	7440-47-3	Yes	.05 (Chromium VI)	.05 (Chromium VI)
Iron	0-20	7439-89-6	Yes	5	10 (as Fe_2O_3)
*Manganese	.1-4.0	7439-96-5	No	5	1
Molybdenum	0-30	7439-98-7	No	15	10
Columbium	0-5	7440-03-1	No	5	5
Copper	0-30	7440-50-8	No	.1	.2
Silicon	.1-1.25	7440-21-3	No	5 (as SiO_2)	1
Titanium	0-3.5	7440-32-6	No	15 (as TiO_2)	10 (as TiO_2)
*Aluminum	0-2	7429-90-5	No	5 (as Al_2O_3)	10
*Vanadium	0-.6	7440-62-2	No	.1	.05 (as V_2O_5)
Tungsten	0-4.5	7440-33-7	No	Not Registered	1

*The ingredients marked with an asterisk are covered under the reporting requirements of Section 313 of The Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372.
**These products contain about 70% Copper and 30% Nickel.

SECTION III – PHYSICAL DATA

NOT APPLICABLE

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Welding arc and sparks can ignite combustibles and flammables. Refer to American National Standard Z-49.1 for fire prevention during the use of welding and allied procedures.

SECTION V – REACTIVITY DATA

"Electric arc-welding may create one or more of the following health hazards: Fumes and gases can be dangerous to your health. Arc Rays can injure eyes and burn skin. Electric shock can kill."

EFFECTS OF OVEREXPOSURE: "short-term over exposure to welding fumes may result in discomfort such as: dizziness, nausea, or dryness or irritation of nose, throat, or eyes, tightness in chest, fever and allergic reactions. (See Sections IV and VII)." "Long-term (chronic) over exposure to welding fumes may lead to siderosis (iron deposit in lungs) and is believed by some investigators to affect pulmonary function."

EMERGENCY & FIRST AID PROCEDURES: Remove to fresh air, obtain medical attention. Employ first aid techniques recommended by the American Red Cross.

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SECTION VI – REACTIVITY DATA

STABILITY	UNSTABLE: NO	CONDITIONS TO AVOID: NONE (UNLESS OTHERWISE SPECIFIED)
	STABLE: YES	CONDITIONS TO AVOID: NONE (UNLESS OTHERWISE SPECIFIED)
INCOMPATIBILITY (MATERIALS TO AVOID)	NONE	

HAZARDOUS DECOMPOSITION PRODUCTS: The composition and quality of welding fumes and gases are dependent upon the metal being welded, the process, procedure, and the electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings off the metal being welded (such as paint, plating or galvanizing), the number of welders and the volume of the work area, the quality and the amount of ventilation, the 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 percent and form from the ingredients listed in Section II. Fume and gas decomposition products, and not the ingredients in the electrode, are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration in the electrode. Also, new compounds not in the electrode may form. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product could include primarily oxides of nickel, secondarily complex oxides of iron, chromium, manganese, silicon, copper, titanium, aluminum, molybdenum and columbium. The present OSHA exposure limits for hexavalent chromium is .05mg/m³ and for nickel 1mg/m³ which will result in a significant reduction from the 5mg/m³ general fume level.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. In addition to the shielding gases like argon and helium, whenever they are employed.

One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample from the inside of the welder's helmet if worn or in the worker's breathing zone. See AWS F1.1 and AWS F1.21985, available from the American Welding Society.
SEE AWS PUBLICATION: "FUMES AND GASES IN THE WELDING ENVIRONMENT"
HAZARDOUS POLYMERIZATION: NOT APPLICABLE

SECTION VII – SPILL OR LEAK PROCEDURES

NOT APPLICABLE

SECTION VIII – SPECIAL PROTECTION INFORMATION

Read and understand the manufacturer's instructions and precautionary label on the product. See American Standard Z-49.1 Safety in Welding and Cutting published by the AMERICAN WELDING SOCIETY, 550 N.W. LeJeune Road, Miami, Florida 33126 and OSHA Publication 2206 (29 CFR 1910). U.S. Government Printing Office, Washington D.C. 20402 for more details on the following topics.
Ventilation: Use plenty of ventilation and/or local exhaust at the arc, to keep the fumes and gases below the threshold limit value within the worker's breathing zone and the general work area. Welders should be advised to keep their head out of the fumes.
Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in a confined space or general work area where local exhaust and/or ventilation does not keep exposure below the threshold limit value.
Eye Protection: Wear a helmet or face shield with a filter lens shade number 12-14 or darker. Shield other workers by providing screens and flash goggles.
Protective Clothing: Wear approved head, hand and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z-49.1. This would include wearing welder's gloves and a protective face shield and may include arm protectors, apron, hats, shoulder protection, as well as dark substantial clothing. Welders should be trained not to allow electrically live parts to contact the skin or wet clothing and gloves. The welders should insulate themselves from the work and ground.
Waste Disposal Method: Discard any product, residue, disposal container, or liner in an environmentally acceptable manner approved by Federal, State and Local regulations.