



MATERIAL SAFETY DATA SHEET (MSDS)

REVISED 02-08

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:	1-Coated (ECoCr-C), 6-Coated (ECoCr-A), 12-Coated (ECoCr-B), 21-Coated (ECoCr-E) 1-Bare (ERCoCr-C), 6-Bare (ERCoCr-A), 12-Bare (ERCoCr-B), 21-Bare (ERCoCr-E), 1M (ERCCoCr-C), 6M (ERCCoCr-A), 12M (ERCCoCr-B), 21M (ERCCoCr-E)	Classification: AWS A5.13 AWS A5.21

SECTION II – HAZARDOUS MATERIALS / Identity Information

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

Flux or other ingredients	CAS No.	Exposure Limit (mg/m ³)	
		OSHA PEL	ACGIH TLV
Cobalt	7440-48-4	0.1	0.05
Chromium	7440-47-3	1	0.5
Tungsten	7440-37-1	Nothing Found	1.3**
Iron	1309-37-1	5	N/A
Nickel	7440-02-0	1	1
Carbon	7440-44-0	3.5	3, 7, 17**
Silicon	7440-21-3	Nothing Found	10, 20**
Manganese	7439-96-5	15	10, 20**
Molybdenum	7439-98-7	5*	5*
Calcium Fluoride	7789-75-5	2.5 (as F)	2.5 (as F)
Titanium Dioxide	13463-67-7	15	10, 20**
Potassium Titanate	12030-97-6	Nothing Found	5 ND
Magnesium Oxide	1309-48-4	15	10

Occupational Safety and Health Administration 29 CFR 1910.1000 Permissible Exposure Limit (PEL). American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV[R]). *Ceiling Limit **Short Term Exposure Limit ND=Nuisance Dust Chromium and Nickel have been recognized as a suspect carcinogen by NTC and IARC.

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

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.

Rod and electrodes are stable at ordinary temperatures, however, caution should be taken with acids, bases, and oxidizers. Molten metal will react violently with water.

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 550 NW LeJeune Road, Miami, Florida 33126.

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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-1985 preface states: “The TLC-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations.” See section V for specific fume constituents, which may modify this TLV.

Common Entry is by Inhalation.

Effects of Overexposure: Inhalation of welding fumes and gases can be dangerous to your health. Short-term (acute) overexposure to welding fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes. Chromium (VI) compounds present in the fume may cause abdominal pain, diarrhea, muscular weakness and convulsions. Continued inhalation could cause loss of consciousness and death. Chromium (VI) around the chest, fever and allergic reactions in some people. Long-term (chronic) over-exposure to welding fumes can lead to siderosis (iron deposits in lung) and is believed to affect pulmonary function. Repetitive exposure to fluoride fumes and/or gases may cause excessive calcification of the bones and ligaments of the ribs, pelvis and spinal column. Constant inhalation of chromium (VI) compounds may cause an ulceration and perforation of the nasal septum as well as liver and kidney damage. Workers exposed to chromium (VI) compounds have a higher incidence of lung and nasal cancers. Chromium and nickel compounds are on the IARC (Internal Agency for Research of Cancer) list as posing a carcinogenic risk to humans.

Arc Rays can injure eyes and burn skin.
Electric shock can kill.
See Section VII.

Emergency and First Aid Procedures: Call for medical assistance. Use first aid procedures recommended by the American Red Cross. If breathing is difficult – give oxygen. If not breathing – use CPR (Cardiopulmonary Resuscitation).

Carcinogenicity: OSHA (29 CFR 1910.1200) lists Nickel and Chromium as possible carcinogens.

SECTION VII – CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

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.

American Filler Metals Co. believes that the information contained in this (MSDS) Material Safety Data Sheet is accurate. However, American Filler Metals Co. cannot make any express or implied warranty as to this information.