



SAFETY DATA SHEET (SDS)

For Welding Consumables and related products
 Conforms to OSHA Hazard communication standard 29CFR 1910.1200
 Standard Must Be Consulted specific requirements

SECTION I-IDENTIFICATION

Manufacturer/ Supplier: Weldcote Metals		Telephone No: 704-739-4115	
Address: 842 Oak Grove Road, Kings Mountains, NC 28086 USA		Emergency No: 800-424-9300 or 704-739-4115	
Alloys : E7018 LMn, E7018-H4R LMn		Acc. to AWS A5.1 standard	GROUP II
Alloys : E6011 LMn, E6010 LMn, E 6013 LMn		Acc. to AWS A5.1 standard	GROUP I

SECTION II- HAZARDOUS MATERIALS*

IMPORTANT: This section covers the materials from which product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered under section V.

*The term "HAZARDOUS MATERIALS" should be interpreted as a term required and defined on OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200 however the use of this term does not necessarily imply the existence of any hazard.

Flux or other ingredients	GROUP	CAS No.	Exposure Limit (mg/m3)	
			OSHA PEL	ACGIH TLV
Iron	III,II,I	7439-89-6	10	5
Manganese	III,II,I	7439-96-5	1,5,3.0**	0.1
Titanium Oxide	III,II,I	13463-67-7	15,5 (Resp)	10,20**
Fluorspar	III,II,I	7789-75-5	2.5 (as F)	2.5 (as F)
Potassium Silicate	III,II,I	1312-76-1	Nothing Found	Nothing Found
Sodium Silicate	III,II,I	1344-09-8	Nothing Found	Nothing Found
Calcium Carbonate	III,II,I	1317-65-3	15,5 (Resp)	10
Bauxite and Aluminum Oxide ⁽¹⁾	III,II,I	1344-28-1	15 (dust), 5 (Resp)	10
Zinc Oxide ⁽¹⁾ (as fume)	II,I	1314-13-2	5,10**	5,10**
Silicon	III,I	7440-21-3	15 (dust), 5 (Resp)	10,20**
Molybdenum	III	7439-98-7	15	10
Chromium	III	744047-3	1 (metal) 0.5 (Cr III) 0.005 (Cr VI)	0.5 (metal) 0.5 (Cr III) 0.05 (Cr VI)
Magnesium Oxide	I	1309-48-4	15	10 (as fume)
Nickel ⁽¹⁾	III	7440-02-0	1	1,1.5 (inhalable fraction)
Calcium Fluoride ⁽¹⁾	III	14542-23-5	2.5 (as F)	2.5(as F)
Potassium Titanate	III,I	12030-97-6	Nothing Found	10
Feldspar	III	68476-25-5	Nothing Found	2
Cryolite ⁽¹⁾	III,I	15096-92-3	2.5 (as F)	2.5(as F)
Magnesite	III,I	546-93-0	15 (as MgO)	10
Potassium Hydroxide ⁽¹⁾	III	1310-58-3	Nothing Found	2
Boric Acid	-	10043-35-3	5	2

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 ⁽¹⁾Subjected to reporting requirements of Section 302,304,311,312, and 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40CFR 370 and 372; ⁽²⁾TLV&PEL for water soluble Cr.III and Cr.VI, welding and cutting of products that contain chromium may produce hexavalent chromium and YOU should read and follow OSHA's final rules Fed Register #:71:10099-10385 dated 02-28-2006. (Resp)= Respiratory/Respiration.

SECTION III- PHYSICAL DATA

Solid rods with flux coating

SECTION IV- FIRE AND EXPLOSION HAZARD DATA

Non-flammable: Welding arc and sparks can ignite combustibles. See Z-49.1 referenced in section VI

SECTION V- REACTIVITY DATA

Hazardous Decomposition Products

Welding fumes and gases cannot be classified simply. The composition and quantity of these fumes and gases are dependent upon the metal being welded, the procedures followed and the electrodes used.

Workers should be aware that the composition and quantity of fumes and gases to which they may be exposed, are influenced by: coating which may be present on the metal being welded (such as paint, plating, or galvanizing), the number of welders in operation and the volume of the work area, the quality and amount of ventilation, the position of 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 procedure). When the electrode is consumed, the fumes and gas decomposition products generated are different in percent and form the ingredients listed in section II. The composition of these fumes and gases are the concerning matter and not the composition of the electrode itself. Decomposition products include those originating from volatilization, reaction, or oxidation of the ingredients shown in section II, plus those from the base metal, coating and the other factors noted above.

Reasonable expected fume constituents of this product would include: complex oxides of aluminum, iron, manganese, silicon, titanium, chromium, nickel, calcium, molybdenum, potassium and sodium. Fluorides will also be present. Fume limit for Cr (VI) may be reached before limit of 5 mg/m³ for general welding fumes is reached. Watch the (Cr VI) level.

Gaseous reaction products may include carbon monoxide and carbon dioxide.

Ozone and nitrogen oxides may be formed by the radiation from the arc.

One method of determining the composition and quantity of the fumes and gases to which the workers are exposed is to take an air sample from inside the welder's helmet while worn or within the worker's breathing zone. See ANSI/AWS F1.1 publication available from the American Welding Society 550N.W. LeJeune Road, Miami, Florida 33126.

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.

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) compound present in the fume may cause abdominal pain, diarrhea, muscular weakness and convulsions. Excessive inhalation could cause loss of consciousness and death. Chromium (VI) compounds may burn eyes. Chromium compounds may cause allergic reactions in some people. Nickel oxides present in the fume may cause tightness 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/ Repetitive overexposure to nickel oxides may lead to lung fibrosis or pneumoconiosis. Workers exposed to chromium (VI) compounds and/or nickel have higher incidence of lung and nasal cancers. Chromium and nickel compounds are on the IARC (International 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 potentially carcinogenic.

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

FUMES AND GASES can be hazardous to your health.

FOR MAXIMUM SAFETY secure proper certifications and wear a respirator at all time while welding and brazing.

ARC RAYS can injure eyes and burn skin.

ELECTRIC SHOCK can KILL.

PROTECT yourself and others by reading and understanding this information:

- Before use, read and understand the manufacturer's instructions, Safety Data Sheets (SDSs), and your employer's safety practices.
- Keep your head out of fumes.
- Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
- Wear correct eye, ear, and body protection.
- Do not touch live electrical parts.
- See latest American National Standard Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society



WARNING: This product can expose you to chemicals including Chromium (hexavalent compounds) which is known to the State of California to cause cancer, and Carbon Monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Supplemental Safety Guidance Documents

Please refer to the following supplemental safety guidance documents for additional information:

American National Standard, Safety in Welding, Cutting and Allied Processes Guidance (American National Standard Z49.1)

https://app.aws.org/technical/AWS_Z49.pdf?_ga=2.92930778.674520871.1541095810-1419732123.1541007130

American Welding Society, Safety and Health Fact Sheets (All topics)

<https://www.aws.org/standards/page/safety-health-fact-sheets>

American Welding Society, Safety and health fact sheet – Fumes and Gases

<https://www.aws.org/library/doclib/fs1-201410.pdf>

American Welding Society, Health effects from Welding Exposures

<https://www.aws.org/library/doclib/AWS-LiteratureUpdate-2016.pdf>

OSHA Technical Manual, Section III, Chapter 3, Ventilation Investigation

https://www.osha.gov/dts/osta/otm/otm_iii/otm_iii_3.html