

MATERIAL SAFETY DATA SHEET

Effective Date: 12/01/2012

Revision Date: 12/1/2017

Code: WLD Gas Metal Arc Welding (GMAW) Solid Wire Page: 1

Section 1 – IDENTIFICATION

PRODUCT NAME: Gas Metal Arc Welding (GMAW) Solid Wire

Bossweld ER70S 6

MANUFACTURER'S NAME
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Section 2 - HAZARDOUS MATERIALS IMPORTANT

This section covers the material from which this product is manufactured. The fumes and gases produced during welding with normal use of this product are covered by Section 5. This term "hazardous" in "Hazardous Materials" should be interpreted as a term required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200). The Chemicals which are reportable by Section 313 of SARA are marked by the symbol §.

EXPOSURE LIMIT(mg/m3)

HAZARDOUS COMP.WEIGHT CAS NO. OSHA PEL ACGIH TLV

Iron	96-99	7439-89-5	Not Reported	Not Reported
§Manganese	<2	7439-96-5	5CL*	5
Silicon	<1.5	7440-21-3	5	10
§Copper	< 5	7440-50-8	1	1
§**Molybdenum	< 1	7439-98-7	5	10

Section 3 - Physical/Chemical Characteristics

Not Applicable

Section 4 - FIRE AND EXPLOSION HAZARD DATA

Not Flammable: Welding arc and sparks can ignite combustibles. See Z49.1 reference in Section 7.

Section 5 - REACTIVITY DATA

Hazardous Decomposition Products

Welding fumes and gasses cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedures, and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to workers may be exposed include: coatings on the metal being welded (such as paint, plating or galvanizing), the number of welders and the volume of the work areas, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence for 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 2. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in Section 2, plus those from the base metals and coating, etc. as noted above.

It is understood, however, that the elements and or oxides to be mentioned are virtually always present as complex oxides and not as metals. (Characterization of Arc Welding Fume: American Welding Society). The elements or oxides listed below correspond to the ACGIH categories located in (TLV Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment).

Reasonably expected constituents of the fume would include: complex oxides of iron, manganese, silicon, copper and molybdenum.

EXPOSURE LIMIT (mg/m3)

HAZARDOUS COMP. CAS NO. OSHA PEL ACGIH TLV

Iron Oxide	1309-37-1	10 (As Fe)	5(As Fe)
Manganese	7439-96-5	1,3 STEL "(Fume)	1,3 STEL"(Fume)
Silica	7631-96-9	6	10
Copper	7440-50-87	0,1(Fume)	0,2(Fume)
***Molybdenum	7439-96-7	5	10

*CL-Ceiling Limit **STEL -Short Term Exposure Limit***Present in ER80S

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. One recommended way to determine the decomposition and quantity of fumes and gasses to which workers are exposed is to take an air sample inside the welder's helmet, if worn or in the worker's breathing zone. (See ANSI/ASWSF1.1, available from the American Welding Society P.O. BOX 351040, Miami, FL 33135. Also from AWS in F1.3 "Evaluating Contaminants in the Welding Environment.A sampling Strategy Guide, " which contains additional advice on sampling). At a minimum, materials listed in this section should be analyzed.



SECTION 6-HEALTH HAZARD DATA

The exposure level for welding fume has been established at 5mg/m³ with OSHA's PEL and ACGIH's TLV. See Section 5 for specific fume constituents which may modify this TLV.

Effects of Overexposure

Electric arc welding may create one or more of the following health hazards: FUMES AND GASSES can be dangerous to your health. SHORT TERM (CHRONIC) OVEREXPOSURE may lead to siderosis (iron deposits in lungs) and is believed by some investigators to affect pulmonary functions. PRIMARY ROUTES OF ENTRY are the respiratory system, eyes and/or skin. IRON, IRON OXIDE, MANGANESE - remove from overexposure and apply artificial respiration needed. Wash eyes or skin with water to remove dusts. LONG TERM (CHRONIC) EXPOSURE may lead to siderosis (iron deposits in lungs) and is believed by some investigators to affect pulmonary functions. PRIMARY ROUTE OF ENTRY is the respiratory system. IRON, IRON OXIDE - Long Term overexposure of iron fumes can cause deposits of iron in the lung. This condition is called "siderosis". Lungs will weaken over time when exposure to iron and its compound ceases. Iron and Manganese (Fe 304) are not regarded as fibrogenic materials. MANGANESE - Long term overexposure of manganese compounds may affect the central nervous system. Symptoms included muscular weakness, tremors similar to Parkinson's disease. Behavioral changes in handwriting may also appear. Employees overexposed to manganese compounds should get quarterly medical examinations for early detection of manganism. ARC RAYS can injure eyes and burn skin. ELECTRIC SHOCK can kill. See

Section 7. EMERGENCY AND FIRST AID PROCEDURES

Call for medical aid. Employ first aid techniques recommended by the American Red Cross. Eyes and Skin: if irritation of flash burns develop after exposure, consult a physician.

CARCINOGENICITY

These products do not contain ingredients that are defined as carcinogenic per 29CFR 1910, 1200 - Hazard Communication Standard.

SECTION 7-PRECAUTIONS FOR SAFE HANDLING & USE/APPLICABLE

CONTROL MEASURES

Read and understand the manufacturer's instructions and the precautionary label on the product. See American National Standard Z49.1. Safety in Welding and Cutting published by the American Welding Society, P.O. BOX 351040 Miami, FL 33135 and OSHA Publication 2205 (29CFR1910). VENTILATION: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gasses below TLV's in the worker's breathing zone and the general areas. Train the welder to keep his head out of the fumes. RESPIRATORY PROTECTION: Use NIOSH approved or equivalent fume, respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below TLV. EYE PROTECTION: Wear helmet or use face shield with filter lens. As a rule of thumb begin with Shade Number 14. Adjust if needed by selecting the next lighter and/or darker shade number. Provide protective screens and flash goggles. If necessary, to shield others. PROTECTIVE CLOTHING: wear hand, head and body protection which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z49.1. At a minimum include welders gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark, nonsynthetic clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

PROCEDURES FOR CLEANUP OF SPILLS OR LEAKS: Not applicable

WASTE DISPOSAL: Prevent waste from contaminating surrounding environment. Discard any product residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, state and local regulations.

SPECIAL PRECAUTIONS: IMPORTANT: Maintain exposure below the PEL/TLV. Use industrial hygiene monitoring to ensure that your use of this material does not create exposures which exceed PEL/TLV. Always use exhaust ventilation. Refer to the following sources for important additional information.

ANSI Z49.1 THE AMERICAN WELDING SOCIETY, P.O. BOX 351040 Miami, FL 33135-OSHA (29CFR 1910) U.S. Dept. of Labor, Washington, D.C. 20210.

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