

January 2004

MATERIAL SAFETY DATA SHEET

MAY BE USED TO COMPLY WITH OSHA'S HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200 AND SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) OF 1986 PUBLIC LAW 99-499. STANDARD SHOULD BE CONSULTED FOR SPECIFIC REQUIREMENTS.

SECTION I (IDENTIFICATION)

MANUFACTURER/
SUPPLIERS NAME:

AMERICAN WELDING SYSTEMS, Inc
13 EXECUTIVE DRIVE SUITE 19
FAIRVIEW HEIGHTS, IL 62208

EMERGENCY PHONE:

800-272-76333

Date Prepared: January 14, 2004

PRODUCT NAME:

QuadBrite L3900 GCS: Specification: AWS A 5.22, 309LT-3G

PRODUCT CLASSIFICATION: (Composite Wires For Open Arc Welding)

SECTION II (HAZARDOUS INGREDIENTS/IDENTITY INFORMATION)

IMPORTANT: This section covers the materials from which these products are manufactured. The fumes and gases produced during normal use of these products are covered in Section V. The term "Hazardous" in "Hazardous Ingredients" should not be interpreted as a term required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200).

INGREDIENTS	CAS NO.	EXPOSURE LIMIT (mg/m ³)		(By Weight)
		OSHA PEL	ACGIH TLV	PERCENT INGREDIENTS
Manganese ¹	7439-96-5	5 (fume)	0.2	1-3
Silicon	7440-21-3	5 (respirable) 15 (dust)	10	0.2-1
Titanium Dioxide	13463-67-7	15	10	3-5
Fluorides	7789-75-5	2.5	2.5	1-2
Iron	1309-37-1	10 (oxide fume)	5 (oxide fume)	Balance
Chromium ¹	7440-47-3	0.5	0.01 (Cr VI) 0.5 (metal)	25-28
Molybdenum	7439-98-7	5 (soluble) 15 (insoluble)	5 (soluble) 10 (insoluble)	0-1
Nickel ¹	7440-02-0	1	0.1 (soluble) 0.2 (insoluble)	11-14

¹Subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-know Act of 1986 (SARA) and 40 CFR Part 372.

SECTION III (PHYSICAL/ CHEMICAL CHARACTERISTICS)

Tubular wire containing alloys and minerals

SECTION IV (FIRE AND EXPLOSION HAZARD DATA)

Non-Flammable: Welding arc and sparks can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during welding. These products as shipped are nonhazardous, nonflammable, non explosive, and non reactive.

Rating under National Fire Protection 704: Health, 0: Fire Hazard, 0: Reactivity Hazard, 0.

SECTION V (REACTIVITY DATA)

Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure, and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coating on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of 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 2. Fumes 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 electrodes may form. 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 metal and coatings, etc., as noted above.

Reasonably expected decomposition products from normal use of these products include a complex of the oxides of the materials listed in Section 2, as well as carbon monoxide, carbon dioxide, ozone and nitrogen oxides. The fume limited for chromium, nickel, manganese, and cobalt may be reached before the general limit for welding fumes (5 mg³l is reached).

One recommended way to determine the composition and quantity of fumes and gases 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/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes" and "Characterization of Arc Welding Fume" available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126

SECTION VI (HEALTH HAZARD DATA)

Threshold Limit Value: The ACGIH and OSHA have set the exposure level for welding fumes at 5mg/m³. The ACGIH 1984-85 preface states: the "TLV-TWA should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section V for specific fume constituents which may modify the TLV.

Effects of Over Exposure: Electric arc welding or oxy fuel welding may create one or more of the following health hazards:

ARC RAYS can injure eyes and burn skin. **HEAT RAYS** (infrared radiation) from flame or hot metal can injure eyes. **ELECTRICAL SHOCK** can **KILL**. **NOISE** can damage hearing. **CARCINOGENICITY** Chromium, nickel, cobalt, and their compounds are on the IARC and NTP lists as posing a carcinogenic risk to humans. **EMERGENCY AND FIRST AID PROCEDURES** call for medical aid. Employ first aid techniques recommended by the American Red Cross. **SHIELDING GASES** such as argon, helium, and carbon dioxide are asphyxiates and adequate ventilation must be provided. **FUMES AND GASES** can be dangerous to your health. **PRIMARY ROUTES OF ENTRY** are the respiratory system, eyes, and/or skin. **PREEXISTING** respiratory or allergic conditions may be aggravated in some individuals. **SHORT TERM (ACUTE) OVEREXPOSURE** to welding fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes. Chromates present in the fume can cause irritation of the respiratory system, damage to lungs, and asthma like symptoms. Nickel compounds in the fume can cause a metallic taste, nausea, tightness in the chest, fever, and allergic reactions. Manganese fume may cause flue like symptoms (metal fume fever). Fluorides can cause pulmonary edema bronchitis. **LONG TERM (CHRONIC)** overexposure to welding fumes can lead to siderosis (iron deposits in lungs) and affect pulmonary functions. Long term overexposure to manganese compounds may affect the central nervous system. Symptoms include muscular weakness and tremors similar to Parkinson's disease. Behavioral changes and changes in handwriting may also appear. Chromium VI compounds are required by OSHA to be considered carcinogenic. Long term exposure to Chromium and Chromium III Oxide dust can cause scaling, redness, itchiness, and a burning sensation on the skin. Long term overexposure to nickel compounds may cause lung fibrosis or pneumoconiosis. Soreness and itchiness of the nose and change in skin color and/or appearance may also result. Nickel and its compounds are required to be considered as carcinogenic by OSHA. This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (*California Health and Safety Code § 25249.5 et.seg.*)

THRESHOLD LIMIT VALUE- the ACGIH 1994-95 recommended limit for welding fumes not otherwise classified (NOC) is 5 mg/m³. TLV-TWA's should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations. See Section 5 for specific fume constituents which may modify this TLV- TWA.

SECTION VII (PRECAUTION FOR SAFE HANDLING AND USE/APPLICABLE CONTROL MEASURES)

Read and understand the manufacturer's instructions and precautionary label on this 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 2206 (29CFR 1910), U.S. Government Printing Office, Washington, D.C. 20402 for more detail on the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLV's in the workers breathing zone and the general area. Train the welder to keep his head out of the fumes.

Respiratory Protection: Use respirable fume respirator or air-supplied respirator when welding in a confined space or where local exhaust or ventilation does not keep exposure below TLV.

Eye Protection: Wear a helmet or face shield with a filter lens. As a rule of thumb, start with a shade darker to see the weld zone. Then go to the next lighter shade which gives sufficient view of the weld zone. Provide screens and flash goggles to shield others.

Protective Clothing: Wear head, hand, and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum, this includes welders' gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

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

Storage: Keep material sealed and dry before use. Keep remaining product sealed and dry.

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