



MATERIAL SAFETY DATA SHEET

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Section 1 - IDENTIFICATION

Manufacturer/Seller:

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

**Telephone; (800) 272-7633
Fax: (618) 624-8777**

PRODUCT NAME: QUADCARB 454 FC-S
WIRE

PRODUCT TYPE: TUBULAR WELDING

Section 2 - HAZARDOUS * MATERIALS

IMPORTANT!

This section covers the materials from which this product is manufactured. The fumes and gases produced during welding with normal use of this product are covered by Section 6.

* The term "hazardous" in "HAZARDOUS MATERIALS" should be interpreted as a term required and defined in OSHA 2265 and does not necessarily imply the existence of any hazard

ELEMENT	NOMINAL %	CAS NO.	NIOSH RTECS NO.	EXPOSURE LIMITS IN MG/M3 OSHA PEL	ACGIH TLV
Al		7429-90-5	BD0330000	NONE	DUST: 10.0 (20 STEL) FUME 5.0
B		7440-42-8	ED3750000	NONE	NONE
Cb		7440-03-1	NONE	NONE	NONE
Co		7440-48-4	GF8750000	0.1	0.1
Cr	15	7440-47-3	GB4200000	1	0.5
Cu		7440-50-8	GL5325000	DUST:1.0 FUME: .1	DUST: 1.0 (2.0 STEL) FUME: .2
Fe	68	1309-37-1	NO7400000	10	5.0 FOR IRON OXIDE FUME
Mg					
Mn	15	7439-96-5	9275000	5.0 CEILING	DUST: 5 CEILING FUME: 1 (3 STEL)
Mo		7439-98-7	QA4680000	15	10.0 (20.0 STEL)
Ni	1	7440-02-0	QR5950000	1	1
Si	1	7440-21-3	VW0400000	NONE	TOTAL DUST: 10. RESPIRABLE DUST 5
Ti		7440-32-6	XR1700000	NONE	NONE
V		7440-62-2	YW1355000	DUST: .5 FUME: .1	.05 AS V ₂ O ₅ (DUST & FUME)
W		7440-33-7	Y07175000	NONE	5.0 (10.0 STEL)

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Section 1 - IDENTIFICATION

Manufacturer/Seller: **15**
AMERICAN WELDING SYSTEMS

EXECUTIVE DRIVE, SUITE 7
FAIRVIEW HEIGHTS, IL 62208

Telephone; (800) 272-7633
Fax: (618) 624-8777

PRODUCT NAME: QUADCARB 454FC-S

PRODUCT TYPE: TUBULAR WELDING WIRE

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Section 3 - PHYSICAL DATA

Not Applicable

Section 4 - FIRE AND EXPLOSION HAZARD DATA

(non-flammable) Welding arc and sparks can ignite combustibles; References in Guidelines (i.e., ANSI Z49 1)

Section 5 - HEALTH HAZARD DATA

Threshold Limit Value:

The ACGIH recommended general limit for Welding Fume N0C (Not Otherwise Classified) is 5mg/m³, ACGIH-1980 preface states "The TLV-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 6 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 GASES can be dangerous to your health. Short-term overexposure to welding fumes may result in discomfort such as dizziness, nausea, dryness or irritation of nose, throat, or eyes.

ARC RAYS can injure eyes and burn skin.

ELECTRIC SHOCK can kill.

See Sections 6 & 8.

Emergency and First Aid Procedures:

Call for medical aid. Employ first aid techniques recommended by the American Red Cross

Section 6 - REACTIVITY DATA

Hazardous Decomposition Products

Welding fumes and gases 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 which 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 are, the quality and 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).

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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 metal and coating, etc., as noted above.

Reasonable expected fume constituents of this product would include:

Gaseous reaction products; such as carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

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 inside the welders helmet if worn or in the worker's breathing zone. See **AN8I/AWS F1.1-78**, available from the American Welding Society, P.O. Box 351040, Miami, FL 33135.

Section 7 - SPILL OR LEAK PROCEDURES

Not Applicable

Section 8 and 9 – SPECIAL PROTECTION INFORMATION AND PRECAUTIONS

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 2206 (29CFR1910), U.S. Government Printing Office, Washington, D.C. 20402 for more details on many of the following.

Ventilation

Use enough ventilation, local exhaust at the arc, both to keep the fumes or gases below TLV's in the worker's 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 helmet or use face shield with Filter Lens Shade Number 13 or darker. Provide protective and flash goggles, if necessary to shield others.

Protective Clothing

Wear head and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats and 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.