02/19/2015

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)

Amtec Welding Products, Inc.

MANUFACTURER/ SUPPLIERS NAME:

22800 Capital Street
Wylie, TX 75098

EEMERGENCY PHONE;
(800) 223-5712

PRODUCT NAME Amtec 606, Amtec 604C, Amtec 605, Amtec 607, Amtec 600.

PRODUCT CLASSIFICATION: Copper Base Electrodes for Shielded Metal Arc Welding (SMAW).

SECTION II (HAZARDOUS INGREDIENTS/IDENTITY INFORMATION)

IMPORTANT: This section covers 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 Materials" should not be interpreted as a term required and defined *in* OSHA Hazard Communication Standard (29 CFR Part 1910.1200). The chemicals or compounds subject to reporting under Title III, in Section 313, of the Superfund Amendments and Reauthorization Act (SARA) are marked with the symbol #.

WARNING: This product contains or produces a chemical known to the State of California to cause birth defects (or other reproductive harm) and cancer. (California Health & Safety Code 25249.5 et seq.)

EXPOSURE **LIMIT (mg/m3)**

INCREMENTS	CAS NUMBER	OSHA PEI.	ACCIH TLV	606	604C	605	607	600
Nickel *4*	7440-02-0	1	1	C		C	H	
Iron	7439-89-6	10 (as Fe)	5 (as Fe)	C	C	C	A	
Calcium Carbonate	1317-65-3	5	10		D	0	E	
Barium Carbonate #	513-77-9	0.5	0.5		E			
Graphite	7782-42-5	15 mppcf*	2.5		B			
Sodium Silicate	1344-09-8	nia	5	C	C	C	C	C
Potassium Cryolite	13775-52-5	n/a.	5	C		B		C
Calcium Fluoride	7789-75-5	2.5 (as F)	2.5 (as F)		C			
Copper #	7440-50-8	0.1	0.2	L	L	L	K	L
Manganese #	7439-96-5	5 (ceiling)	0,2	F			C	C
Aluminum *4*	7429-90-5	5	5	E			A	
Tin	7440-31-5	2	2		D	D		
Sodium Cryolite	15096-52-3	2.5 (as F)	2.5 (as F)	G		F	G	G
Sodium Fluoride	7681-49-4	2.5 (as F)	2.5 (as F)	C		B	C	C

*millions of particles per cubic foot of air

NOTES: Percent Weight Range Code

A= 0.1 - 1%	C= 1 - 5%	E= 5 - 10%	G= 10 - 30%	.1= 30 - 60%	L= 60 - 100
B= 0.5 - 1.5%	D= 3 - 7%	F= 7 - 13%	.1-1= 15 - 40%	K= 40 - 70%	

SECTION III (PHYSICAL DATA) - NOT APPLICABLE

SECTION IV (FIRE AND EXPLOSION HAZARD DATA)

Non-Flammable: Welding arc and sparks can ignite combustibles. Refer to American National Standard 249.1 for fire prevention during welding. These products as shipped are non hazardous, nonflammable, non explosive, and non reactive. Rating under National Fire Protection 704: Health, 1: Flammability, 0: Reactivity, 0.

SECTION V (REACTIVITY DATA)

Welding fumes cannot be classified simply. The composition and quantity of both 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 on 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, 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 decomposition products, not the ingredients in the electrode, are important.

Decomposition products include those originating from volatilization, reaction, or oxidation of materials in Section plus those from the base metal and coating, etc., as noted above. These components are virtually always present as complex oxides and not as metals (Characterization of Arc Welding Fume: American Welding Society). Reasonably expected fume constituents of the fume could include: complex oxides of iron, manganese, silicon, sodium, and potassium. Fluorides, nickel and barium oxides may also be present. The following table lists some reasonably expected fumes that may be generated:

EXPOSURE LIMIT (mg/m3)

Substance	**CAS No.**	**OSHA PEL**	**ACGIH TLV**
Iron Oxide	1309-37-1	10	5
Manganese Dioxide *14*	1313-13-9	1	1
Nickel Oxide #	1313-99-1	1	1
Hydrogen Fluoride	7664-39-3	2.5 (as F)	2.5 (as F)
Nitric Oxide	10102-43-9	25 ppm	25 ppm
Nickel (soluble) #	7440-02-0	0.1 (as Ni)	0.1 (as Ni)

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may also be formed by radiation from the arc. Monitor fume levels. The limit for general welding fumes not otherwise classified is 5 mg/mi. 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 FM** available from the "American Welding Society," P.O. Box 351040, Miami, FL 33135).

SECTION VI (HEALTH HAZARD DATA)
Threshold Limit Value: The **ACGIH** and **OSHA** have set the exposure level for welding fumes at 5 mg/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 may create one or more of the following health hazards:
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. **IRON, IRON OXIDE, MANGANESE** - Remove from overexposure and apply artificial respiration if needed. **FLUORIDES** - Fluoride compounds produced may cause eye and skin burns, pulmonary edema bronchitis. **NICKEL, NICKEL OXIDE** - Metallic taste, nausea, tightness in chest, fever, allergic reactions.
LONG TERM (CHRONIC) OVEREXPOSURE 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 to iron fumes can cause deposits of iron in the lungs (siderosis). Lungs will clear in time when exposure to iron and its compounds cease. **FLUORIDES** - Overexposure to fluorides can cause serious bone erosion. **MANGANESE** - Long term exposure may lead to "Manganism." Central nervous system is affected and symptoms include muscular weakness and tremors. Exposed workers should get quarterly medical examinations for manganism. **NICKEL, NICKEL OXIDE**- Long term overexposure to nickel products may cause lung fibrosis or pneumoconiosis. Nickel is listed as a human carcinogen on IARC and **NTP** lists and is required by OSHA to be considered carcinogenic. **WELDING FUMES:** Welding fumes (not otherwise classified) are considered to be carcinogenic defined with not further categorization by **NIOSH. ARC RAYS** can injure eyes. **ELECTRIC SHOCK** can kill.