Date of Issue: March 2, 2021

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH); OSHA Hazard Communication Standard, 29 CFR 1910.1200

SECTION 1: IDENTIFICATION

Identification of the substance or preparation
Product Type: Stainless Steel Welding Wires or Rods
This SDS covers all EXECUTIVE brand stainless steel welding wire products supplied by:

Company/undertaking identification
Supplier: Exocor
Address: 271 Ridley Road, St. Catharines, Ontario L2S 0B3, Canada
Tel:888-317-2209

Product Specification: AWS A5.9 / ASME SFA-5.9
All materials listed have a Wt. % of 1% or greater except for Ni & Cr which are listed at 0.1% or greater

Product Name		Cr	Ni	Mo	Mn	Fe	Cu
ER307Si	18 8 Mn	18.6	8.1		6.3	Bal	
ER308(H)	19 9 H	19.7	9.6		2.1	Bal	
ER308L	19 9 L	20.0	9.7		2.2	Bal	
ER308LSi	19 9 L Si	19.8	10.2		1.9	Bal	
ER309(H)	22 12 H	23.1	13.1		1.7	Bal	
ER309L	23 12 L	23.0	13.5		2.0	Bal	
ER309LSi	23 12 L Si	23.1	13.7		1.7	Bal	
ER309LMo	23 12 2 L	21.3	14.9	2.7	1.4	Bal	
ER310	25 20	26.6	21.0		1.8	Bal	
ER312	29 9	30.5	8.8		1.6	Bal	
ER316(H)	19 12 3 H	19.2	12.1	2.2	1.6	Bal	
ER316L	19 12 3 L	18.7	11.8	2.5	1.6	Bal	
ER316LSi	19 12 3 L Si	18.3	11.3	2.5	1.6	Bal	
ER317L	18 15 3 L	18.6	13.0	3.0	1.6	Bal	
ER318	19 12 3 Nb	19.0	11.9	2.6	1.3	Bal	
ER318Si	19 12 3 Nb Si	19.0	11.9	2.6	1.3	Bal	
ER320LR	----	20.1	33.1	2.4	1.8	Bal	3.4
ER321	----	19.5	9.2		1.4	Bal	

Product Name		Cr	Ni	Mo	Mn	Fe	Cu
ER330	18 36 H	17.0	35.0		1.5	Bal	
ER347(H)	19 9 Nb	19.0	9.0		1.6	Bal	
ER347Si	19 9 Nb Si	19.3	9.7		1.3	Bal	
ER385	20 25 5 Cu L	20.0	25.0	4.3	1.7	Bal	1.5
ER409Nb	----	11.6	0.3			Bal	
ER410	13	12.6	0.3			Bal	
ER410NiMo	13 4	12.3	4.6	0.4		Bal	
ER420	----	13.5	0.3			Bal	
ER430	17	16.6	0.3			Bal	
ER430LNb	18 L Nb	18.1	0.4			Bal	
ER430NbTi	----	18.0	0.4			Bal	
ER439(Ti)	----	17.8	0.4			Bal	
ER16-8-2	16 8 2	15.8	8.2	1.3	1.2	Bal	
ER630	----	16.2	4.6			Bal	3.4
ER2209	22 9 3 N L	22.8	8.8	3.2	1.7	Bal	
ER2594	25 9 4 N L	25.2	9.2	3.9		Bal	
253MA	----	20.9	10.2			Bal	

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification and general hazards:
Classified according to OSHA Hazard Communication Standard 29 CFR 1910.1200, the Canadian Controlled Products Regulations, and the criteria of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), this solid wire product does not meet the criteria for classification in any hazard class.

2.2 Label elements:
Solid welding wires in massive form are not classified as hazardous to health and environment. Accordingly,
- GHS label elements: not applicable
- Hazard pictograms: not applicable
- Signal word: not applicable
- Hazard statements: not applicable

2.3 Other hazards;
Welding processes can generate particulates that cause hazards to health or environmental effects. Those particulates may cause an allergic reaction on contact with skin or by inhalation. The solid wires do not meet the criteria for PBT or vPvB in accordance with Annex XIII of REACH.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is solid stainless steel wires

Ingredients	CAS No.	Wt. %

Carbon	7440-44-0	<0.40
Manganese	7439-96-5	<6.3
Silicon	7440-21-3	<1.0
Copper	7440-50-8	<4.0
Titanium	7440-32-6	<1.5
Molybdenum	7439-98-7	<5.2
Chromium	7440-47-3	<32
Nickel	7440-02-0	<37
Niobium	7440-03-1	<1.0
Tungsten	7440-33-7	<1.0
Iron	7439-89-6	bal.

SECTION 4: FIRST AID MEASURES

Turn off power and remove from exposure and obtain prompt medical attention. If victim is unconscious, administer oxygen. If not breathing, employ CPR (Cardiopulmonary Resuscitation) techniques immediately. If flu-like symptoms (cough, muscle pain, fever, chills, insomnia, or mental confusion) develop after use, obtain medical help immediately.

SECTION 5: FIRE FIGHTING MEASURES

No specific recommendations of extinguishing equipment for welding consumables. This material is not flammable. However, welding arc and sparks can ignite combustible and flammable materials. Use the extinguishing materials recommended for the fire situation. Firefighters shall wear self-contained breathing apparatus to protect from fumes and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

This product is solid object. Response to spills, leaks, or releases is not applicable.

SECTION 7: HANDLING AND STORAGE

Precautions: None

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The following are the exposure limits by American Conference of Governmental Industrial Hygienists(ACGIH), and Occupational Safety & Health Administration(OSHA)

Substance	CAS No.	ACGIH TLV mg/m^3	OSHA PEL[3] mg/m^3
Carbon	7440-44-0	None	None
Manganese[2]	7439-96-5	0.2	1.0[a]
Silicon	7440-21-3	Withdrawn	15[b] 5[c]
Copper	7440-50-8	0.2[1]	0.1[d]
Titanium	7440-32-6	NE[e]	NE[e]
Molybdenum	7439-98-7	10	10
Chromium	7440-47-3	0.5	1.0
Nickel	7440-02-0	1.5	1.0
Niobium	7440-03-1	NE[e]	NE[e]
Tungsten	7440-33-7	NE[e]	5.0
Iron	7439-89-6	10[1]	10[1]

Supplemental Information:

(1) Not listed. The OSHA nuisance value maximum is 15 5 milligrams per cubic meter. PEL value for iron oxide is 10 mg/m^3. ACGIH TLV value for iron oxide is 5 milligrams per cubic meter.

(2) Subject to the reporting requirements of Sections 311, 312, Term and 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR 370 and 372.

(3) Unless noted, all values are for 8 hour time weighted averages (TWA)

(a) Value is for manganese fume. Present PEL is milligrams per cubic meter (ceiling value). Values proposed by OSHA in 1989 were 1.0 milligrams per cubic meter TWA and 3.0 milligrams per cubic meter STEL (Short Exposure Limit).

(b) Total dust

(c) Respirable fraction

(d) Values are for copper fume.

(e) Not Established

Engineering measures and personal protective measures:
Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. Keep exposure as low as possible.
Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or ventilation does not keep exposure below TLV.
Eye Protection: Wear helmet or use face shield with filter lens shade number 12* or darker. Shield others by providing screens and flash goggles. (*) No specific recommendation for submerged arc.
Protective Clothing: Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: This product is a solid object, shaped as wire of various diameters with varying color, and non-volatile.
Melting point: Above 1000℃(Above 1800℉)

SECTION 10: STABILITY AND REACTIVITY

Stability: This product is stable under normal conditions
Reactivity: Contact with mineral acids and oxidizing agents may generate hydrogen gas.
Hazardous Polymerization: Will Not Occur
Hazardous decomposition products: Welders are exposed to a range of fumes and gases. Fume particles contain a wide variety of oxides and salts of metals and other compounds, which are produced mainly from electrodes, and filler wire. Fumes from the welding of carbon steel contain compounds of following chemical elements: C, Mn, Cu, Ti, Fe, Mo. Ozone is formed during most electric arc welding, and exposures can be high in comparison to the exposure limit. Nitrogen oxides and carbon oxides are also expected as gaseous products during welding. Welders who weld painted mild steel can also be exposed to a range of organic compounds produced by pyrolysis.

SECTION 11: TOXICOLOGICAL INFORMATION

The International Agency for Research on Cancer (IARC) identifies welding fumes as a possible carcinogenic to humans (Group 1). Inhalation of welding fumes can be dangerous to welder health. Identification of welding fume is not easy because base materials and their coatings, welding processes, even air pollution degree are different.

Immediate effect: Overexposure to welding fumes can cause symptoms like nausea, dizziness irritation of eyes and nose.
Chronic effect: Overexposure to manganese and manganese compounds above safe limits may result in damage to the central nervous system, including brain. Symptoms like tremor, lethargy, spastic gait, and slurred speech may happen. Overexposure to welding fumes may influence pulmonary function.

Potential carcinogen evaluation among organization

Ingredients	CAS No.	NTP[(1)]	IARC[(2)]	OSHA[(3)] list
Carbon	7440-44-0	-	-	-
Manganese	7439-96-5	-	-	-
Silicon	7440-21-3	-	-	-
Copper	7440-50-8	-	-	-
Titanium	7440-32-6	-	-	-
Molybdenum	7439-98-7	-	-	-
Chromium	7440-47-3			
Nickel	7440-02-0			
Niobium	7440-03-1			
Tungsten	7440-33-7			
Iron	7439-89-6	-	-	-

(1) NTP(National Toxicology Program, USA) : K - Known Carcinogen, S - Suspect Carcinogen
(2) IARC(The International Agency for Research on Cancer) : 1 - Carcinogenic to humans, 2A - Probably carcinogenic to humans, 2B - Possibly carcinogenic to humans
(3)OSHA(Occupational Safety & Health Administration, USA) : Carcinogen list

SECTION 12: ECOLOGICAL INFORMATION

This product can degrade into components originating from this product or from the materials used in the welding process.

SECTION 13: DISPOSAL CONSIDERATIONS

Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with government regulations.

SECTION 14: TRANSPORT INFORMATION

No international regulations and restrictions are applicable.

SECTION 15: REGULATORY INFORMATION

SARA Title III: Not Applicable. However, large users may need to calculate and add their welding fume emissions to their inventory of the toxic emissions, using the material percentages listed in Section 3.

TSCA: All material contained within this product are on the TCSA Inventory List.

California Proposition 65 Warning: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the state of California to cause cancer (California Health & Safety Code § 25249.5).

SECTION 16: OTHER INFORMATION

This Safety Data Sheet is established to comply with the Hazard Communication Standard (HCS). Issue date is shown on page 1 of this document.

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