COR-MET.

SAFETY DATA SHEET

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Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & EU Standards SDS Revision Date: 10/25/2024 SDS Revision: 3.2 1. PRODUCT & COMPANY IDENTIFICATION 1.1 Product Name COR-MET[®] IRON BASE HARDFACING WIRE 1.2 Chemical Name: Iron Alloy 1.3 Synonyms FC-O, FC-G, MC-G, FC-S, MC-T, SW 1.4 Trade Names 10V. 15V. 92. 94. 9235. 9236. 9237. 9240. 9250. 9260. 9262. 9263. 9264. 9265. 928. 95. 9510. 9520. 9533. 9544. 9545. 9620, 9640, F-3 Type 2 15 Product Use: Welding Wire 1.6 Distributor's Name: Cor-Met[®], Inc. 17 Distributor's Address: 12500 Grand River Road, Brighton, MI 48116 1.8 Emergency Phone: COR-MET: +1 (800) 848-2719 Business Phone / Fax: 19 Tel: +1 (810) 227-3251 // Fax: +1 (810) 227-9266 2. HAZARDS IDENTIFICATION Hazard Identification: 2.1 Prepared in accordance with UN Globally Harmonized standards. Intended to comply with OSHA 29 CFR 1910.1200. Canadian WHMIS and Australian Work Health and Safety standards. DANGER! MAY CAUSE CANCER. MAY CAUSE DAMAGE TO ORGANS (LUNGS) THROUGH PROLONGED OR REPEATED EXPOSURE. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE RESPIRATORY IRRITATION. Classification: Carc. 1A; STOT RE 2; Eye Irrit. 2; STOT SE 3 2.2 Label Elements: Hazard Statements (H): H350 - May cause cancer. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H372 - Causes damage to organs (lungs) through prolonged or repeated exposure. Precautionary Statements (P): P203 – Obtain, read and follow instructions before use. P260 – Do not breathe dust/fume. P264 - Wash hands and exposed skin areas with soap and warm water thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 -Use only outdoors or in a well-ventilated area P280 - Wear protective gloves/protective clothing/eye protection/face protection. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P318 - If exposed or concerned, get medical advice. P319 - Get medical help if you feel unwell. P337+P317 - If eye irritation persists: Get medical help. P405 - Store locked up. P501 - Dispose of contents and container to a licensed treatment, storage or disposal facility (TSDF) 2.3 Other Warnings: WARNING: Electric shock from welding equipment or electrodes may be fatal. The welding process uses electrical circuits that sustain a welding arc between the electrode and the base plate. The welding arc converts the electrical energy into a localized, concentrated heat source. The tremendously high temperatures of the arc cause the welding continuous wire and rod electrode (or filler metal, when used as such) to decompose. Electric arc working may create one or more health hazards. Hot metal spatter and heat from electric arcs, welding flames or the thermal spray process may cause burns to the hands and body or may cause fire if it comes into contact with combustible materials. UV, IR and light radiation from an electric arc may cause damage to unprotected eyes. Wear suitable protective equipment. Fumes and gases generated during the welding process can be harmful to your health and noise generated during welding can damage hearing. See also American National Standard Z-49.1, "Safety in Welding, Cutting and Allied Processes" published by the American Welding Society for additional safety precautions and hazard warnings. WARNING! This product can expose you to chemicals including Hexavalent Chromium, Nickel and Vanadium, which are known to the State of California to cause cancer or reproductive harm. For more information, go to www.P65Warnings.ca.gov. 3. COMPOSITION & INGREDIENT INFORMATION EXPOSURE LIMITS IN AIR (mg/m³) ACGIH NOHSC OSHA ppm ppm ppm ES-ES-ES-TWA EINECS No. STEL PEAK PEL STEL IDLH CHEMICAL NAME(S) CAS No. RTECS No. % TLV STEL OTHER 0.5 - NIOSH 7439-89-6 NO4565500 231-096-4 56-93 (5.0) NA NF NF NF (10.0) NA NA IRON 7440-47-3 GB4200000 231-157-5 0-35 (0.5) NA (0.5) NF NF (1.0) NA 25 CHROMIUM # 7439-96-5 OO9275000 231-105-1 0-22 (0.2) (3) (10.0) NF NF (10.0) NA NA MANGANESE 1314-62-1 YW2460000 215-239-8 0-15 NA NA (0.05) NF NF NA NA 35 VANADIUM Muta. 2; Repr. 2; STOT RE 1; Acute Tox. 4 *; Acute Tox. 4 *; STOT SE 3; Chronic Aq. 2; H341, H361d ***, H372 **, H332, H302, H335, H411 (5.0) NA NF NF 7440-02-0 QR5950000 231-111-4 0-8.5 NF (5.0) NA NA NICKEI Carc. 2; STOT RE 1; Skin Sens. 1; Aquatic Chronic 3; H351, H372**, H317, H412 7439-98-7 QA4680000 231-107-2 0-7 (10.0) NA (10.0) NF NF (15.0) NA (5000) MOLYBDENUM 7440-03-1 QT9900000 231-113-5 0-6.5 (5.0) NA NF NF NF (5.0) NA NA NIOBIUM



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Prep	ared to OSHA, ACC, AN	SI, NOHSC, WH	HMIS, GHS & E	U Standards			SDS	Revisi	on: 3.2		SDS	Revisi	on Date	: 10/25/2024
		3. COMP	OSITION	<u>& INGRE</u>	DIENT	INF	ORN	IATI						
											IMITS IN			1
						AC	GIH m		NOHSC ppm			OSHA ppm	L	4
						pp		ES-	ES-	ES-		ppin		4
СНЕМ	CAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	TLV	STEL	TWA	STEL	PEAK	PEL	STEL	IDLH	OTHER
CARE	ON	7440-44-0	FF5250100	231-153-3	0-6	(3.5)	NA	NF	NF	NF	(3.5)	NA	(1750)	
	NNI *	7440-42-8	ED7350000	231-151-2	0-6	(10.0)	NA	NF	NF	NF	(15.0)	NA	NA	
BOR	JN	7440.00.0	VD (700000											1
TITAN	IIUM	7440-32-6	XR1700000	231-142-3	0-5	NA	NA	NF	NF	NF	NA	NA	NA	
TUNG	STEN	7440-33-7	YO7175000	231-143-9	0-4	5	10	5	10	NF	5	10	NA	
			Self-heat.2; H228		0.5.0	(40.0)	NIA	(40.0)			(40.0)	NIA	NIA	1
SILIC	NC	7440-21-3	VW0400000	231-130-8	0.5-3	(10.0)	NA	(10.0)	NF	NF	(10.0)	NA	NA	
τιταν	IIUM DIOXIDE	13463-67-7	XR2275000	236-675-5	0-5	(10)	NA	(10)	NF	NF	(15)	NA	NA	TOTAL DUST
		Carc. 2; H351	1			1	1				1		-	•
CALC	IUM FLUORIDE	7789-75-5	EW1760000	232-188-7	0-5	NA	NA	NF	NF	NF	NA	NA	NA	
		1332-37-2	ye Irrit. 2; STOT : NO7380000	215-570-8	0-2	15	NA	NF	NF	NF	10	NA	NA	FUME
IRON	OXIDE	1002 01 2	1101000000	210 010 0	10 2	10						101	101	
	IUM CARBONATE	471-34-1	FF9335000	207-439-9	0-2	(10)	NA	(10)	NF	NF	(5)	NA	NA	
			ye Irrit. 2; STOT											
SILIC	ON DIOXIDE	7631-86-9	VV7310000	231-545-4	0-2	NA	NA	NF	NF	NF	20	NA	3000	
		12030-97-6	STOT SE 3; H319	234-748-6	0-2	NA	NA	NF	NF	NF	NA	NA	NA	
POTA	SSIUM TITANATE													
		1314-23-4						(5)	NF	NF	(5)	NA	NA	
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Page 3 of 8 **SDS-0003**

Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & EU Standards

SDS Revision: 3.2 SDS

SDS Revision Date: 10/25/2024

		4. FIRST	AID ME	=ASU	KEO -	COIL	0					
4.5	Chronic Health Effects:	Ingestion: Ingestion or inhalation of fluorides may cause serious bone erosion (osteoporosis) and mottling of teeth. Eyes: None reported by the manufacturer. Skin: Prolonged or repeated contact may cause contact dermatitis (localized redness or rash). Inhalation: Long term exposure to welding and allied processes gases, dusts and fumes may contribute to pulmonal irritation or pneumoconiosis or "siderosis." Inhalation of fume with chromium (VI) compounds can cause									onary	
		irritation of the re manganese compo Disease and can i and less common compounds should	spiratory tr ounds may nclude slov ly, tremor l be seen b	act, lung affect th vness, c and beh) damage ne central i hanges in navioral ch	and asth nervous handwrit anges. B	nma-like s system. S ing, gait ir Employees	ymptoms ymptoms mpairmer s who ar	s. Long- may be nt, muscl e overe>	-term ov similar e spasn oposed	/erexposu to Parkin ns and cra	ure to ison's amps
4.6	Target Organs:	Eyes, Skin & Respiratory System										
4.7	Medical Conditions Aggravated by Exposure:	Individuals with allergies or imp symptoms worsened by exposu reaction cannot be predicted du	re to weldi	ng fume	s; howeve	r, such	HEALT FLAMM		Y			<u>1</u> 0
		and in the quantity of the decom				00510011	PHYSIC	AL HAZ	ZARDS			0
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5 1	Fire & Evplosion Useranda	5. FIRE	FIGHT	INGN	IEASU	KE2					•	
5.1 5.2	Fire & Explosion Hazards: Extinguishing Methods:	This product is not flammable. Water, CO ₂ , Halon or Dry Chemi	ical									
5.3	Firefighting Procedures:	Fight fires as for surrounding n equivalent self-contained breat fought from a safe distance. K from fire control or dilution fror	naterials. hing appar eep contai	atus (S0 ners coo	CBA) and I until well	protective after the	ve clothing e fire is o	g. Fire s ut. Preve	hould be ent runof	e ff	1	0
		waterway.	-								\sim	
0.4	0-11-1	6. ACCIDEN										
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6.1	Spills:	6. ACCIDEN Spilled product may produce a appropriate Personal Protective respirator. Carefully vacuum or local, state, provincial and feder thoroughly before reuse.	slip hazaro e Equipme sweep up t al regulatio	d. Befor ent inclu he spille ons. Wa	e cleaning ding glove d powder, sh all affeo	any spi es, glass particula cted area	ll, individu ses and l te or slag. as. Remo	NIOSH a Dispose	approved e of prope	or ec	quivalent) ccordance	dust e with
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7.1 7.2 7.3	Work & Hygiene Practices: Storage & Handling: Special Precautions: Exposure Limits:	 6. ACCIDEN Spilled product may produce a appropriate Personal Protective respirator. Carefully vacuum or local, state, provincial and feder thoroughly before reuse. 7. HANDLINC Avoid contact to eyes, skin, at thoroughly after handling and us area. Do not store or bring toba the standards of good industrial No unusual methods are require a sheltered warm area with temp Static charge may occur during containers slowly on a stable sur Read and understand the mar National Standard Z-49.1, "Saf Society, P. O. Box 351040, Mia Office, Superintendent of Docur and explosion control, exposure 8. EXPOSURE CON CHEMICAL NAME(S) 	slip hazarc e Equipme sweep up t al regulatic b & STC nd mucous e. Do not s acco produc hygiene pra d. Keep pro berature an powder tra face. Keep nufacturer's fety in We mi, FL 331 nents, P.O. control anc TROLS	d. Befor nt inclu he spille- ons. Wa DRAG s membr moke, e: cts, gum, actices. oduct cold d humidiansfer. p contain instruct Iding, Cl 35 and (. Box 37 d other sp & PE SIH STEL NA	e cleaning ding glove d powder, sh all affec E INFC anes. Avo at, drink, cl food, drin ty control t Keep away ier tightly c ions and Utting and DSHA Pub 1954, Pitts Decial prec RSON	Any spi es, glass particula cted area DRMA id inhala hew gum iks or co d retain a to prever y from ir closed wh the prec Allied F blication 3 sburgh, F autions. AL PI NOHSC ES- STEL NF	II, individu ses and I te or slag. as. Remo TION ation of va or tobacc smetics w all warning thigh hun compatible not in autionary Processes, 2206 (29 C A 15250- ROTEC ES- PEAK NF	NIOSH a Dispose ve any co apors, ga io, or app ithin the and ider nidity and e materia use. label on Publish C.F.R. 19 7954 for TION	approved of prope- ontamina asses, fur ly cosme working tity label "going t als listed this pro- the py t 010), U.S additiona OSHA STEL NA	I (or ecertly in average of the second secon	quivalent) ccordance hing and d dusts. N hin the wo therwise f erred stora the dew p tion 10. See Ame erican We nment Pr s regardin	dust e with wash Wash orking follow age is sooint." Open erican elding inting ng fire
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7.1	Work & Hygiene Practices: Storage & Handling: Special Precautions: Exposure Limits:	6. ACCIDEN Spilled product may produce a appropriate Personal Protective respirator. Carefully vacuum or local, state, provincial and feder thoroughly before reuse. 7. HANDLING Avoid contact to eyes, skin, ai thoroughly after handling and us area. Do not store or bring toba the standards of good industrial No unusual methods are require a sheltered warm area with temp Static charge may occur during containers slowly on a stable sur Read and understand the mar National Standard Z-49.1, "Saf Society, P. O. Box 351040, Mia Office, Superintendent of Docur and explosion control, exposure 8. EXPOSURE CON	slip hazarc e Equipme sweep up t al regulatic b & STC nd mucous e. Do not s acco produc hygiene pra d. Keep pro berature an powder tra face. Keep nufacturer's fety in We mi, FL 331 nents, P.O. control anc TROLS	d. Befor nt inclu he spille- ons. Wa DRAG moke, e- cts, gum, actices. oduct cold d humidiansfer. p contain instruct Iding, Cl 35 and (. Box 37 d other sp Box 37 d other sp BH STEL NA	e cleaning ding glove d powder, sh all affec E INFC anes. Avo at, drink, cl food, drin ty control t Keep away ier tightly c ions and Utting and DSHA Pub 1954, Pitts Decial prec RSON ES-TWA NF	Any spi es, glass particula cted area DRMA id inhala hew gum iks or co d retain a to prever y from ir closed wh the prec Allied F blication 3 sburgh, F autions. AL PI NOHSC ES- STEL NF	II, individu ses and I te or slag. as. Remo TION ation of va or tobacc smetics w all warning thigh hun compatible not in autionary Processes, 2206 (29 C A 15250- ROTEC ES- PEAK NF	NIOSH a Dispose ve any co apors, ga io, or app ithin the and ider nidity and e materia use. label on Publish C.F.R. 19 7954 for TION	approved of prope- ontamina asses, fur ly cosme working tity label "going t als listed this pro- the py t 010), U.S additiona OSHA STEL NA	I (or ecertly in average of the second secon	quivalent) ccordance hing and d dusts. M in the wo therwise f erred stora the dew p tion 10. See Ame erican We nment Pr s regardin	dust e with wash Wash orking follow age is point." Open erican elding inting ng fire
7.1	Work & Hygiene Practices: Storage & Handling: Special Precautions: Exposure Limits:	6. ACCIDEN Spilled product may produce a appropriate Personal Protective respirator. Carefully vacuum or local, state, provincial and feder thoroughly before reuse. 7. HANDLING Avoid contact to eyes, skin, ai thoroughly after handling and us area. Do not store or bring toba the standards of good industrial No unusual methods are require a sheltered warm area with temp Static charge may occur during containers slowly on a stable sur Read and understand the mar National Standard Z-49.1, "Saf Society, P. O. Box 351040, Mia Office, Superintendent of Docur and explosion control, exposure 8. EXPOSURE CON CHROMIUM # MANGANESE	slip hazarc e Equipme sweep up t ral regulatic b & STC nd mucous e. Do not s icco produc hygiene pra d. Keep pro berature an powder tra face. Keep nufacturer's fety in We mi, FL 331 nents, P.O. control anc TROLS ACC TLV (5.0) (0.5) (0.2)	d. Befor nt inclu he spille- ons. Wa DRAG membr moke, ea cts, gum, actices. oduct col d humidi ansfer. p contain instruct lding, Cl 35 and (. Box 37 d other sp BIH STEL NA NA (3)	e cleaning ding glove d powder, sh all affec E INFC anes. Avo at, drink, cl food, drin ty control t Keep away er tightly c ions and Utting and DSHA Pub 1954, Pitts becial prec RSON ES-TWA NF (0.5) (10.0)	any spi es, glass particula cted area DRMA bid inhala hew gum ks or co d retain a to prever y from ir closed wh the prever Allied F blication 2 sburgh, F autions. AL PI NOHSC ES- STEL NF NF	II, individu ses and I te or slag. as. Remo TION ation of va or tobacc smetics w all warning thigh hun compatible not in autionary Processes, 2206 (29 (24 15250- ROTEC ES- PEAK NF NF	NIOSH a Dispose ve any co apors, ga to, or app ithin the and ider nidity and e materia use. label on ," publish C.F.R. 19 7954 for 57954 for TION PEL (10.0) (1.0) (10.0)	approved of prope- ontamina ases, fur ly cosme working i tity label tigoing t als listed this pro- ned by t 010), U.S additiona OSHA STEL NA NA	I (or ecertly in average of the second secon	quivalent) ccordance hing and d dusts. M in the wo therwise f erred stora the dew p tion 10. See Ame erican We nment Pr s regardin	dust e with wash Wash orking follow age is point." Open erican elding inting ng fire



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.1	Exposure Limits:	EXPOSURE CONTROL	AC			NOHSC			OSHA		OTHER
	ppm (mg/m ³)					ES-	ES-				
		CHEMICAL NAME(S)	TLV	STEL	ES-TWA	STEL	PEAK	PEL	STEL	IDLH	
		NIOBIUM	(5.0)	NA	NF	NF	NF	(5.0)	NA	NA	
		CARBON	(3.5)	NA	NF	NF	NF	(3.5)	NA	(1750)	
		TITANIUM DIOXIDE	(10)	NA	(10)	NF	NF	(15)	NA	NA	TOTAL DUS
		COPPER	(1.0)**	NA	(1.0)	NF	NF	(1.0)	NA	NA	(0.2) FUME
		IRON OXIDE	15	NA	NF	NF	NF	10	NA	NA	FUME
		SILICON DIOXIDE	NA	NA	NF	NF	NF	20	NA	3000	
		ZIRCONIUM DIOXIDE	(5)	NA	(5)	NF	NF	(5)	NA	NA	
		SILICON	(10.0)	NA	(10.0)	NF	NF	(10.0)	NA	NA	
2	Ventilation & Engineering Controls: Respiratory Protection:	Use industrial hygiene monitoring adequate ventilation (e.g., open equipment is available (e.g., sink large quantities of product and pro CAUTION: Welding or cutting ma	doors an safety s vide ade ay produ	d windov hower, e quate ve ce fumes	ws, local e eye-wash s ntilation (e s and gas	exhaust v station). .g., local es hazar	ventilation) Use in a exhaust v dous to h). Ensur chemical entilation nealth. A	e approp fume ho <u>, fans).</u> void brea	oriate de od whe	econtaminat
		these fumes and gases. Use ad ANSI Z49.1-1967 Safety in Weldin exposure within legal limits. In the must be kept below the TLVs a exposure as low as possible. Use confined space or where local ex- respiratory protection is necessa selection of the appropriate respira- potential airborne contaminants an	ng and C worker's nd the e respiral chaust or ary, NIO atory prof	utting pu s breathin quivalent ble fume ventilati SH appr tection (d	blished by ng zone al exposure respirator on does n oved resp ust respira	the Ame nd the ge must co or air su ot keep piratory p tor, etc.)	erican Wel eneral area ompute to pplied res exposure protection	ding Soc a, the fur less that pirator w below th should	iety. Kee nes and an one. hen weld ie TLV. V be used	ep the gases Keep ling in Vhere . The	
1	Eye Protection:	Wear helmet or use face shield w flash goggles, if necessary, to sh goggles. Wear contact lenses in create a likelihood of injury from prohibited.	nield othe combina	ers. Wea ation with	r safety g safety ey	lasses w /ewear, o	ith UV pro except wh	otective s nere the	side shie contact l	lds or enses	9
5	Hand Protection:	Wear head, hand and body prote radiation, UV radiation, abrasions prevent shock except for leather give equal performance) are prefe	s, contus if kept dr	ions and	heat stre	ss. Pro	tective clo	thing wil	I not ger	erally	
6	Body Protection:	Wear head, hand and body prote shock. Wear flame resistant ear p include heat/fire resistant gloves, Wear garments made of leather, I oil, grease or solvents) and in go not roll up sleeves or trousers (par	ection tha plugs to k overalls, neavywei od repair	keep spa , aprons, ight tightl . Do not	rks out of sleeves, y woven w wear cloth	ears. Se footwear /ool or co	e ANSI Z- , welder's otton. Kee	-49.1. Th spats ar p clothing	e clothing nd head o g clean (f	g may cover. ree of	
		9. PHYSICAL	& CH	EMIC	AL PRO	PFR	TIES				
1	Appearance:	Solid wire, silver-arev color									
	Appearance: Odor:	Solid wire, silver-grey color Odorless									
2	Odor:	Odorless									
2	Odor: Odor Threshold:	Odorless NA									
: ;	Odor: Odor Threshold: pH:	Odorless NA NA									
	Odor: Odor Threshold: pH: Melting Point/Freezing Point:	Odorless NA									
2 5 5	Odor: Odor Threshold: pH:	Odorless NA NA									
2 	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling	Odorless NA NA NA									
;	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability	Odorless NA NA NA NA NA									
2 3 1 5 7 3	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint:	Odorless NA NA NA NA NA NA									
1 2 3 4 5 7 3 3 9	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability Limits: Vapor Pressure:	Odorless NA									
2 3 4 5 7 7 3 3 9	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability Limits: Vapor Pressure: Vapor Density:	Odorless NA									
2 3 5 7 3 9 10	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability Limits: Vapor Pressure: Vapor Density: Relative Density:	Odorless NA 7.2 – 7.8 g/cm ³									
2 3 4 5 7 3 3 10 11 12	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability Limits: Vapor Pressure: Vapor Density: Relative Density: Solubility:	Odorless NA									
2 3 5 7 3 9 10	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability Limits: Vapor Pressure: Vapor Density: Relative Density:	Odorless NA 7.2 – 7.8 g/cm ³									
2 3 4 5 7 3 3 10 11 12	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability Limits: Vapor Pressure: Vapor Density: Relative Density: Solubility:	Odorless NA									
2 3 5 5 7 8 9 10 11 12 13	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability Limits: Vapor Pressure: Vapor Density: Relative Density: Solubility: Partition Coefficient (log Pow):	Odorless NA									
2 3 5 5 7 3 7 3 10 11 12 13 14	Odor: Odor Threshold: pH: Melting Point/Freezing Point: Initial Boiling Point/Boiling Range: Flashpoint: Upper/Lower Flammability Limits: Vapor Pressure: Vapor Pressure: Vapor Density: Relative Density: Solubility: Partition Coefficient (log Pow): Autoignition Temperature:	Odorless NA									



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	10. STABILITY & REACTIVITY				
10.1	Stability:	Stable under normal conditions of use (see section 7).			
10.2	Hazardous Decomposition Products:	Irritating vapors and toxic gases (e.g., carbon monoxide and carbon dioxide) when burned or during			
10.3	Hazardous Polymerization:	Will not occur.			
10.4	Conditions to Avoid:	Use or storage near incompatible substances.			
10.5	Incompatible Substances:	Strong oxidizing agents, strong acids and bases.			

11. TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Inhalation: YES Absorption: YES Ingestion: NO
11.2	Toxicity Data:	
11.2		Manganese & Manganese Oxides: High short-term (acute) exposure to manganese and its compounds may cause "metal fume fever," a condition characterized by sever flu-like symptoms of chills, fever, upset stomach, vomiting irritation of the throat and aching of the body. Symptoms generally disappear within 48 hours after discontinuation o exposure (for example over a weekend), may quickly reappear upon resumption of exposure ("Monday morning syndrome"), and may dissipate during the workweek as the body adjusts to exposure. Chronic overexposure to Manganese compounds may result in central nervous system (CNS) effects, with symptoms that may include behaviora changes, impairment of muscle function, and sexual dysfunction. In severe cases, irreversible CNS effects may result with a host of symptoms that mimic Parkinson's disease or muscular dystrophy. Molybdenum: Overexposure to oxides of molybdenum may affect the body if they are inhaled, ingested or if they contact the eyes. Effects could include irritation of the eyes, nose, and throat, weight loss, and digestive disturbances. Long term effects are not known, but may be associated with muscle and joint aches, headache. Niobium: Short term exposure may result in eye and skin irritation, as well as irritation to the respiratory tract. Long term exposure may result in kidney damage and moderate fibrosis of the lungs. Silicon & Silicon Oxides: (Amorphous Silica) Short term overexposure may be a possible eye irritant. Repeated inhalation of amorphous silica can cause pneumoconiosis or non-disabling fibrosis of the lung. Titanium Oxides: Oxides: O titanium are considered to have minim
		from this product. See Section 3 of this SDS for specific constituents of this product in order to determine applicability of
44.0	A	information provided in this section.
11.3	Acute Toxicity:	See Section 4.4
11.4 11.5	Chronic Toxicity: Suspected Carcinogen:	See Section 4.5 <u>Nickel</u> is listed as IARC Group 2B (Possibly carcinogenic to humans); NTP15 Group 1 (Known human carcinogen)
		of "hexavalent chromium," is considered a human carcinogen, and thus a mutagen as well. While this product does no contain hexavalent chromium, it is well known that the chromium in this product is converted to various chemical forms during the welding process, including hexavalent chromium. Therefore, use of this product in normal welding operations must be considered to represent a cancer hazard. Other constituents of this product are not considered carcinogens o mutagens. <u>Quartz</u> (as <u>Silicon Dioxide</u>) is listed as IARC Group 1 (Carcinogenic to humans). <u>Vanadium</u> is listed as IARC Group 2B (Possibly carcinogenic to humans).WARNING! This product can expose you to chemicals including <u>Hexavalent Chromium</u> , <u>Nickel</u> and <u>Vanadium</u> which are known to the State of California to cause cancer or reproductive harm. For more information, go to
11.0	Denne destine Texisite	www.P65Warnings.ca.gov.
11.6	Reproductive Toxicity:	<u>Manganese</u> compounds may be associated with reproductive system effects.
	Mutagenicity: Embryotoxicity:	Chromium in the form of "hexavalent chromium," is believed to produce mutagenic effects in humans.
	Teratogenicity:	This product is not reported to produce embryotoxic effects in humans. This product is not reported to produce teratogenic effects in humans.
	Reproductive Toxicity:	Manganese compounds may be associated with reproductive system effects.
11.7	Irritancy of Product:	See Section 4.2
11.8	Biological Exposure Indices:	Consult Occupational Physician for the availability and appropriateness of biological exposure indices (e.g., blood tests, urine tests, etc.).
11.9	Physician Recommendations:	Treat symptomatically.
		12. ECOLOGICAL INFORMATION
12.1	Environmental Stability:	There are no specific data available for this product.
12.2	Effects on Plants & Animals:	There are no specific data available for this product.
12.3	Effects on Aquatic Life:	There are no specific data available for this product.
		13. DISPOSAL CONSIDERATIONS
13.1	Waste Disposal:	Dispose of in accordance with federal, state, provincial or local regulations.

COR-MET.

SAFETY DATA SHEET

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		14. TRANSPORTATION INFORMATION
The desc	basic description (ID Nun criptive information may b	nber, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional e required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.
14.1	49 CFR (GND):	NOT REGULATED
14.2	IATA (AIR):	NOT REGULATED
14.3	IMDG (OCN):	NOT REGULATED
14.4	TDGR (Canadian GND):	NOT REGULATED
14.5	ADR/RID (EU):	NOT REGULATED
14.6	SCT (MEXICO):	NOT REGULATED
14.7	ADGR (AUS):	NOT REGULATED
		15. REGULATORY INFORMATION
15.1	SARA Reporting Requirements:	The following chemicals are listed on the SARA Title III (EPCRA 313 Toxic Chemical List): Chromium, Manganese Nickel.
15.2	SARA TPQ:	There are no specific Threshold Planning Quantities for the components of this product.
15.3	TSCA Inventory Status:	All chemical substances of this product are listed on the TSCA inventory or are otherwise exempt from inventory status.
15.4	CERCLA Reportable Quantity:	Chromium: 2,270 kg (5,000 lbs); <u>Nickel</u> : 45.4 kg (100 lbs)
		<u>Manganese</u> (and its compounds), <u>Chromium</u> (and its compounds), <u>Nickel</u> (and its compounds) are listed as Hazardou Air Pollutants (HAPs). <u>Manganese</u> (and its compounds), <u>Chromium</u> (and its compounds), and <u>Nickel</u> (and it compounds) are listed as Toxic Pollutants under the Clean Water Act (CWA). <u>Chromium</u> , <u>Copper</u> and <u>Nickel</u> are listed as Priority Pollutants under the Clean Water Act (CWA). This product does not contain any Class 1 or Class 2 ozond depletors.
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and th SDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSI The following chemicals are listed on the Ingredient Disclosure List: Chromium, Manganese, Nickel and Molybdenum.
15.7	State Regulatory Information:	<u>Chromium</u> is found on the following state criteria lists: Florida Toxic Substances List (FL), Massachusetts Hazardou Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jerse Right-to-Know List (NJ), New York Hazardous Substances List (NY), Pennsylvania Right-to-Know List (PA), an Washington Permissible Exposures List (WA). <u>Titanium Dioxide</u> is found on the following state criteria lists: MA, NJ, an PA. <u>Niobium</u> is found on the following state criteria lists: MA, MN, PA, and WA. <u>Manganese</u> is found on the following state criteria lists: FL, MA, MN, NJ, PA, and WA. <u>Silicon</u> is found on the following state criteria lists: MA, MN, PA, and WA. <u>Silicon Dioxide</u> is found on the following state criteria lists: FL, MA, MN, NJ, and PA. <u>Manganese</u> is found on the following state criteria lists: FL, MA, MN, NJ, A, an WA. <u>Silicon Dioxide</u> is found on the following state criteria lists: FL, MA, MN, NJ, and PA. <u>Manganese</u> is found on the following state criteria lists: FL, MA, MN, NJ, and WA. <u>Silicon</u> is found on the following state criteria lists: FL, MA, MN, NJ, A, and WA. <u>Silicon</u> is found on the following state criteria lists: FL, MA, MN, NJ, PA, and WA. <u>Silicon</u> is found on the following state criteria lists: FL, MA, MN, NJ, PA, and WA. <u>Silicon</u> is found on the following state criteria lists: FL, MA, MN, NJ, PA, and WA. <u>Silicon</u> is found on the following state criteria lists: FL, MA, MN, NJ, PA and WA. <u>Nickel</u> is listed on the following state criteria lists: fl, MA, M MN, NJ, PA and WA. <u>Nickel</u> is listed on the following state criteria lists: fl, MA, M MN, NJ, PA and WA. <u>Nickel</u> is listed on any of the following state criteria lists: California Proposition 65 (CA65), Delaware Air Quality Management List (DE), Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (NY), Pennsylvani
15.8	Other Requirements:	Right-to-Know List (PA), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI). WARNING: This product can expose you to chemicals including <u>Hexavalent Chromium</u> , <u>Nickel</u> and <u>Vanadium</u> which are known to the State of California to cause cancer or reproductive harm. For more information, go to www.P65Warnings.ca.gov.



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Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & EU Standards

16. OTHER INFORMATION

16.1 DANGER! MAY CAUSE CANCER. MAY CAUSE DAMAGE TO ORGANS (LUNGS) THROUGH PROLONGED OR Other Information: REPEATED EXPOSURE. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE RESPIRATORY IRRITATION. Obtain, read and follow instructions before use. Do not breathe dust/fume. Wash hands and exposed skin areas with soap and warm water thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned, get medical advice. Get medical help if you feel unwell. If eye irritation persists: Get medical help. Store locked up. NOTE: Local ventilation should be used during handling and use. Good housekeeping and personal hygiene are recommended. Some individuals may show sensitivity to exposure. Failure to observe proper practices may be hazardous to health. Use only in well-ventilated areas. Harmful by inhalation. Avoid contact with skin and eyes. Do not breathe gas, fumes, vapor or spray. Wear suitable protective clothing, gloves and eye/face protection. In case of insufficient ventilation wear suitable respiratory protective equipment. Avoid overexposure to metal fumes, powders and particulates. WARNING: Electric shock from welding equipment or electrodes may be fatal. The welding process uses electrical circuits that sustain a welding arc between the electrode and the base plate. The welding arc converts the electrical energy into a localized, concentrated heat source. The tremendously high temperatures of the arc cause the welding continuous wire and rod electrode (or filler metal, when used as such) to decompose. Electric arc working may create one or more health hazards. Hot metal spatter and heat from electric arcs, welding flames or the thermal spray process may cause burns to the hands and body or may cause fire if it comes into contact with combustible materials. UV, IR and light radiation from an electric arc may cause damage to unprotected eyes. Wear suitable protective equipment. Fumes and gases generated during the welding process can be harmful to your health and noise generated during welding can damage hearing. See also American National Standard Z-49.1, "Safety in Welding, Cutting and Allied Processes" published by the American Welding Society for additional safety precautions and hazard warnings. KEEP OUT OF REACH OF CHILDREN. WARNING: This product can expose you to chemicals including Hexavalent Chromium, Nickel and Vanadium, which are known to the State of California to cause cancer or reproductive harm. For more information, go to www.P65Warnings.ca.gov. 16.2 Terms & Definitions: See last page of this Safety Data Sheet. 16.3 Disclaimer This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & Cor-Met's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition. 164 Prepared for: Cor-Met, Inc. 12500 Grand River Road Brighton, MI 48116 USA **COR-MET** Tel: +1 (810) 227-3251 Fax: +1 (810) 227-9266 http://www.cor-met.com/ E-mail: sales@cor-met.com 16.5 Prepared by: ShipMate, Inc. P.O. Box 787 Sisters, Oregon 97759-0787 USA **NO** Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 Training & Consulting https://shipmate.com



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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

CAS No.	Chemical Abstract Service Number
RTECS No.	Registry of Toxic Effects of Chemical Substances Number
EINECS No.	European Inventory of Existing Commercial Chemical Substances Number

EXPOSURE LIMITS IN AIR:

ACGIH	American Conference on Governmental Industrial Hygienists
IDLH	Immediately Dangerous to Life and Health
NOHSC	National Occupational Health and Safety Commission (Australia)
OSHA	U.S. Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average

FIRST AID MEASURES:

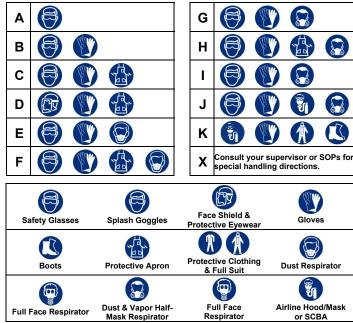
stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard	HEALTH
1	Slight Hazard	FLAMMABILITY
2	Moderate Hazard	PHYSICAL HAZARDS
3	Severe Hazard	PERSONAL PROTECTION
4	Extreme Hazard	

PERSONAL PROTECTION RATINGS:



OTHER STANDARD ABBREVIATIONS:

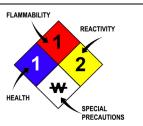
Carc	Carcinogenic
Irrit	Irritant
NA	Not Available
NR	No Results
ND	Not Determined
NE	Not Established
NF	Not Found
SCBA	Self-Contained Breathing Apparatus
Sens	Sensitization
STOT RE	Specific Target Organ Toxicity – Repeat Exposure
STOT SE	Specific Target Organ Toxicity – Single Exposure

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA FLAMMABILITY LIMITS IN AIR: Autoignition Minimum temperature required to initiate combustion in air with no ot Temperature of ignition

Autoignition Temperature	Minimum temperature required to initiate combustion in air with no other source of ignition
LEL	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
UEL	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source

HAZARD RATINGS:

0	Minimal Hazard	FLAM		
1	1 Slight Hazard			
2	Moderate Hazard			
3	Severe Hazard			
4	Extreme Hazard			
ACD	Acidic			
ALK	Alkaline			
COR	Corrosive	/		
W	Use No Water	HEAL		
ох	Oxidizer			
TREFOIL	Radioactive			



TOXICOLOGICAL INFORMATION:

LD ₅₀	Lethal Dose (solids & liquids) which kills 50% of the exposed animals		
LC ₅₀	Lethal concentration (gases) which kills 50% of the exposed animal		
ppm	Concentration expressed in parts of material per million parts		
TD _{Io}	Lowest dose to cause a symptom		
TCLo	Lowest concentration to cause a symptom		
TD _{io} , LD _{io} , & LD _o or	Lowest dose (or concentration) to cause lethal or toxic effects		
TC, TC _o , LC _{lo} , & LC _o			
IARC	International Agency for Research on Cancer		
NTP	National Toxicology Program		
RTECS	Registry of Toxic Effects of Chemical Substances		
BCF	Bioconcentration Factor		
TLm	Median threshold limit		
log Kow or log Koc	Coefficient of Oil/Water Distribution		

REGULATORY INFORMATION:

WHMIS	Canadian Workplace Hazardous Material Information System			
DOT	U.S. Department of Transportation			
TC	Transport Canada			
EPA	U.S. Environmental Protection Agency			
DSL	Canadian Domestic Substance List			
NDSL	Canadian Non-Domestic Substance List			
PSL	Canadian Priority Substances List			
TSCA	U.S. Toxic Substance Control Act			
EU	European Union (European Union Directive 67/548/EEC)			
WGK	Wassergefährdungsklassen (German Water Hazard Class)			

CLP/GHS (1272/2008/EC) PICTOGRAMS:

			\Diamond					
GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environment