

## FILLER METAL Alloy 44

Specifications: AWS 5.15

Classification: ERNiFeMn-CI

### Description:

FILLER METAL alloy 44 is an all position wire recommended for GMAW and GTAW welding of ductile, gray and malleable cast irons. The addition of Manganese in FILLER METAL alloy 44 increases the welds resistant to cracking. Pre and post weld heat treatment is not required but can be helpful for heavy fully restrained joints. The welds are moderately hard and require carbide tipped tools for machining.

Typical Chemistry Analysis					
C	Mn	Si	S	Fe	Ni
0.34	11.8	0.2	0.002	45	43
Cu	Al				
0.03	0.01				

### Typical Mechanical Properties

Tensile Strength	95000	psi
Yield Strength	80000	psi
Elongation % in 2"	33	%
Hardness	195	BHN

## FILLER METAL Alloy 55

Specifications: N/A

Classification: N/A

### Description:

FILLER METAL Alloy 55 is used for TIG and MIG welding of cast iron. This filler metal is extensively employed to overlay the cast iron rolls. It is also used to repair the castings. The weld metal of FILLER METAL Alloy 55 is harder than that of FILLER METAL Alloy 99. However, the machining can be accomplished by using carbide tipped tools. A preheat and interpass temperature of 350°F (175 C) minimum is recommended during welding, without which the weld and heat affected zones could develop cracks.

Typical Chemistry Analysis					
C	Cr	Ni	Mn	Si	Fe
0.05		55.9	0.25	0.15	43.6
S	Cu	Mo	Fe		
			43.6		

### Typical Mechanical Properties

Tensile Strength	89,500	psi
Yield Strength	62,000	psi
Elongation % in 2"	35	%

## FILLER METAL Alloy 99

Specifications: AWS 5.15

Classification: ERNi-CI

### Description:

FILLER METAL Alloy 99 is used for TIG and MIG welding of cast iron. This wire is extensively employed to repair gray iron castings. It can also be used for overlay and buildup. However, dilution from the casting influences the mechanical properties of the metal. The welds are easily machinable. A preheat and interpass temperature of 350°F (175 C) minimum is recommended during welding.

Typical Chemistry Analysis					
C	Mn	Si	S	Fe	Ni
1.0 max	2.5 max	0.75 max	0.03 max	4.0 max	90.0 min
Cu	Other				
4.0 max	1.0 max				

### Typical Mechanical Properties

Tensile Strength	66,500	psi
Yield Strength	36,000	psi
Elongation % in 2"	40	%

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL Alloy 59

Specifications: AWS 5.14

Classification: ERNiCrMo-13

### Description:

FILLER METAL Alloy 59 is a Ni-Cr-Mo alloy with an extra low carbon and silicon content. This wire has excellent corrosion resistance and high mechanical strength. FILLER METAL Alloy 59 is used to weld low carbon Ni-Cr-Mo alloys to themselves and for dissimilar welding of alloys such as C-276, 22, 625, and other high alloy steels such as 6Mo stainless, 825, and even common grades of stainless steels. Some base metals that FILLER METAL Alloy 59 are used on are ASTM and ASME B and SB 574, 575, 619, 622 and 626.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.010 max	0.5 max	1.5 max	0.015 max	0.010 max	0.10 max
Cu	Ni	Co	Al	Ti	Cr
0.5 max	Rem	0.3 max	0.1 - 0.4		22.0 - 24.0
Nb(Cb) + Ta		Mo	V	W	Other
		15.0 - 16.5			0.50 max

Typical Mechanical Properties	
Tensile Strength	110,000 psi
Yield Strength	- psi
Elongation % in 2"	25 %

## FILLER METAL Alloy 60

Specifications: AWS 5.14

Classification: ERNiCu-7

### Description:

FILLER METAL Alloy 60 is used for TIG, or MIG welding of nickel copper alloys (ASTM B127, B163, B164, and B165 UNS Number N04400). This filler metal can be used for MIG overlay on steel after a first layer with nickel FILLER METAL Alloy 61. Dissimilar welding applications include joining Monel alloys to Nickel 200 and copper-nickel alloys. This product is widely used in marine applications because of its good resistance to the corrosive effects of seawater and brackish waters.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.15 max	4.0 max	2.5 max	0.02 max	0.015 max	1.25 max
Cu	Ni	Al	Ti	Other	
Rem	62.0 max	1.25 max	1.5-3.0	0.50 max	

Typical Mechanical Properties	
Tensile Strength	76,500 psi
Yield Strength	52,500 psi
Elongation % in 2"	34 %

## FILLER METAL Alloy 61

Specifications: AWS 5.14

Classification: ERNi-1

### Description:

FILLER METAL Alloy 61 is used for TIG, MIG, and SAW welding of nickel 200 or 201. This filler metal is also employed for overlaying on steel as well as repairing cast iron castings. It can also be used for dissimilar joints between nickel or nickel alloys to stainless or ferritic steels.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.15 max	1.0 max	1.0 max	0.03 max	0.015 max	0.75 max
Cu	Ni	Co	Al	Ti	Other
0.25 max	93.0 min		1.5- max	2.0-3.0	0.50 max

Typical Mechanical Properties	
Tensile Strength	66,500 psi
Yield Strength	38,000 psi
Elongation % in 2"	28 %

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL Alloy 62 mod

Specifications: AWS 5.14

Classification: ERNiCrFe-5 (Except Mn & Fe)

### Description:

FILLER METAL alloy 62 is a modified nickel alloy wire used for GMAW and GTAW welding of alloy 600 in thicknesses up to 2 inches. FILLER METAL alloy 62 has been modified to minimize stress cracking by reducing the iron (<6%) and increasing the manganese (>1.0%) content. The weld metal exhibits the same high temperature strength and oxidation resistance as the alloy 600 base metal.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.011	2.9	4.8	0.003	0.002	0.16
Cu	Ni	Co	Al	Ti	Cr
0.01	72.6	0.01	0.16	0.4	17.0
Nb+Ta		Other			
1.8		0.5 max			

NOTE: AWS 5.14 ERNiCrFe-5 \*Mn%=1.0 Max \*\*Fe%=6.0-10.0

### Typical Mechanical Properties

Tensile Strength	80,000 psi
Yield Strength	40,000 psi
Elongation % in 2"	30 %

## FILLER METAL Alloy 65

Specifications: AWS 5.14

Classification: ERNiFeCr-1

### Description:

FILLER METAL Alloy 65 is used for TIG, MIG, and SAW welding of Ni-Fe-Cr-Mo-Cu alloys such as Incoloy® alloy 825. This can also be used to overlay cladding where similar chemical composition is required. The weld metal is highly corrosion resistant, particularly in reducing chemicals such as sulphuric and phosphoric acids.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.05 max	1.0 max	22.0 min	0.03 max	0.03 max	0.50 max
Cu	Ni	Co	Al	Ti	Cr
1.5 - 3.0	38.0 - 46.0		0.20 ma	0.6 - 1.2	19.5 - 23.5
Nb(Cb)+Ta		Mo	V	W	Other
		2.5 - 3.5			0.5 max

### Typical Mechanical Properties

Tensile Strength	88,500 psi
Yield Strength	61,000 psi
Elongation % in 2"	34 %

## FILLER METAL Alloy 67

Specifications: AWS 5.7

Classification: ERCuNi

### Description:

FILLER METAL Alloy 413 is used for TIG, MIG, and oxy-fuel welding of 70/30, 80/20, and 90/10 Cu-Ni alloys. This filler metal can be used for MIG overlay on steel after a first layer with FILLER METAL Alloy 61. Dissimilar-welding applications include joining Cu-Ni alloys to Nickel 200 or Ni-Cu alloys.

Typical Chemistry Analysis					
Cu	Mn	Fe	Si	S	Ni
Rem	1.0 ma	0.40-0.75	0.25 max	0.01 max	29.0-32.0
P	Pb	Ti	Other		
0.02 max	0.02 max	0.20-0.50	0.50 max		

### Typical Mechanical Properties

Tensile Strength	53,000 psi
Yield Strength	21,000 psi
Elongation % in 2"	32 %

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL Alloy 72

Specifications: AWS/ASME SFA A5.14

Classification: ERNiCr-4

### Description:

FILLER METAL Alloy 72 is used for GMAW, GTAW and SAW of the Ni-Cr class of corrosion resistant alloys. FILLER METAL Alloy 72 may be used for cladding and welding similar alloy grades to carbon and stainless steels. This alloy system provides excellent resistance to high temperature corrosion in atmospheres containing sulfur and vanadium.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.01-0.10	0.20 max	0.50 max	0.02 max	0.015 max	0.20 max
Cu	Ni	Ti	Cr	Other	
0.50 max	Rem	0.3-1.0	42.0-46.0	0.50 max	

Typical Mechanical Properties	
Tensile Strength	105,000 psi
Yield Strength	72,000 psi
Elongation % in 2"	30 %

## FILLER METAL Alloy 82

Specifications: AWS 5.14, ASME

Classification: ERNiCr-3

### Description:

FILLER METAL Alloy 82 is used for TIG, MIG, and SAW welding of base materials such as ASTM B163, B166, B167, and B168- alloys which have UNS Number N0660. It is one of the most used nickel alloys whose applications range from cryogenic to high temperatures. This filler metal can also be used for dissimilar welding applications between various nickel alloys and stainless or carbon steels, as well as for overlaying.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	2.5 - 3.5	3.0 max	0.03 max	0.015 max	0.50 max
Cu	Ni	Ti	Cr	Other	
0.50 max	67 min	0.75 max	18.0-22.0	0.50 max	
Nb(Cb) + Ta					
2.0 - 3.0					

Typical Mechanical Properties	
Tensile Strength	86,000 psi
Yield Strength	52,000 psi
Elongation % in 2"	38 %

## FILLER METAL Alloy 601

Specifications: AWS A5.14, SFA 5.14

Classification: ERNiCrFe-11

### Description:

FILLER METAL Alloy 601 is used for gas-tungsten-arc welding of INCONEL® alloy 601. The GTAW process with FILLER METAL Alloy 601 is the only recommended joining method for applications involving temperatures over 2100°F (1150°C) or for applications at lower temperatures involving exposure to hydrogen sulfide or sulfur dioxide. The weld metal of this filler metal is comparable to the base metal in resistance to corrosion and oxidation.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	1.0 max	Rem	0.03 max	0.015 max	0.50 max
Cu	Ni	Co	Al	Cr	Other
1.0 max	58.0 - 63.0		1.0-1.7	21.0-25.0	0.50 max

Typical Mechanical Properties	
Tensile Strength	94,000 psi
Yield Strength	- psi
Elongation % in 2"	42 %

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL Alloy 617

Specifications: AWS A5.14, SFA 5.14

Classification: ERNiCrCoMo-1

### Description:

FILLER METAL Alloy 617 is used for the welding of alloys of similar composition. This filler metal is also used for joining various dissimilar high-temperature alloys because of its high temperature strength, oxidation resistance, and metallurgical stability from 1500 °F up to 2100°F. Some examples are Incoloy® alloys 800HT and 802 and cast alloys such as HK-40, HP, and HP-45 Modified.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.05 - 0.15	1.0 max	3.0 max	0.03 max	0.015 max	1.0 max	
Cu	Ni	Co	Al	Ti	Cr	
0.50 max	Rem	10.0 - 15.0	0.8 - 1.5	0.60 max	20.0 - 24.0	
Nb(Cb) + Ta		Mo	V	W	Other	
		8.0 - 10.0			0.50 max	

Typical Mechanical Properties	
Tensile Strength	112,000 psi
Yield Strength	88,500 psi
Elongation % in 2"	28 %

## FILLER METAL Alloy 622

Specifications: AWS 5.14, ASME

Classification: ERNiCrMo-10

### Description:

FILLER METAL Alloy 622 is an alloy of nickel with Cr, Mo and W as principal alloying elements. It is used to weld alloys of similar composition as well as dissimilar joints between Ni-Cr-Mo alloys and stainless or carbon or low alloy steels. It can also be used for clad overlay as well as spraying applications. FILLER METAL Alloy 622 offers excellent corrosion resistance in oxidizing as well as reducing media in a wide variety of chemical process environments. It offers an outstanding resistance to stress corrosion cracking, pitting, and crevice corrosion.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.015 max	0.50 max	2.0 - 6.0	0.02 max	0.010 max	0.08 max	
Cu	Ni	Co	Al	Ti	Cr	
0.50 max	Rem	2.5 - max			20.0 - 22.5	
Nb(Cb) + Ta		Mo	V	W	Other	
		12.5 - 14.5	0.35 max	2.5 - 3.5	0.50 max	

Typical Mechanical Properties	
Tensile Strength	115,000 psi
Yield Strength	82,000 psi
Elongation % in 2"	38 %

## FILLER METAL Alloy 625

Specifications: AWS/ASME SFA A5.14

Classification: ERNiCrMo-3

### Description:

FILLER METAL 625 is used for GMAW, GTAW and SAW of Ni-Cr-Mo alloys. This filler metal may be used for cladding and welding dissimilar base metals such as Ni-Cr, Mo alloys to stainless and carbon steels. The Ni-Cr-Mo alloy system provides excellent resistance to oxidizing and reducing environments. The high Mo content provides good stress, pitting and crevice corrosion resistance.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.10 max	0.50 max	5.0 - 6.0	0.02 max	0.015 max	0.50 max	
Cu	Ni	Co	Al	Ti	Cr	
0.50 max	58.0 min		0.40 max	0.40 max	20.0 - 23.0	
Nb(Cb) + Ta		Mo	V	W	Other	
3.15 - 4.15		8.0 - 10.0			0.50 max	

Typical Mechanical Properties	
Tensile Strength	114,500 psi
Yield Strength	85,000 psi
Elongation % in 2"	35 %

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL Alloy 718

Specifications: AWS 5.14, ASME

Classification: ERNiFeCr-2

### Description:

FILLER METAL 718 is used for TIG welding Inconel® alloy 718, 706, and X-750. It is mainly used for welding high-strength aircraft components, and liquid rocket components involving cryogenic temperatures. High heat input processes such as MIG welding often result in microfissuring. This alloy can be age hardened to higher strengths.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.08 max	0.35 max	Rem	0.015 max	0.015 max	0.35 max	
Cu	Ni	Co	Al	Ti	Cr	
0.30 max	50.0 - 55.0		0.20 - 0.80	0.65 - 1.15	17.0 - 21.0	
Nb(Cb) + Ta		Mo	V	W	Other	
4.75 - 5.50		2.80 - 5.50			0.50 max	

Typical Mechanical Properties	
Tensile Strength	125,000 psi
Yield Strength	91,000 psi
Elongation % in 2"	27 %

## FILLER METAL Alloy C276

Specifications: AWS/ASME SFA A5.14

Classification: ERNiCrMo-4

### Description:

FILLER METAL Alloy C276 is a welding wire that is used for GMAW, GTAW and SAW processes of nickel alloys with Cr and Mo. This grade may also be used for welding nickel alloys to dissimilar base metals such as stainless steel or low alloy steels. FILLER METAL Alloy C276 is also used for overlay cladding of low all low alloy or carbon steel to provide general corrosion resistance and due to the high molybdenum content, a strong resistance to stress corrosion cracking, pitting and crevice corrosion.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.02 max	1.0 max	4.0 - 7.0	0.04 max	0.03 max	0.08 max	
Cu	Ni	Co	Al	Ti	Cr	
0.50 max	Rem	2.5 - max			14.5 - 16.5	
Nb(Cb) + Ta		Mo	V	W	Other	
		15.0 - 17.0	0.35 max	3.0 - 7.5	0.5	

Typical Mechanical Properties	
Tensile Strength	105,000 psi
Yield Strength	81,000 psi
Elongation % in 2"	40 %

## FILLER METAL Alloy W

Specifications: AWS/ASME A5.14

Classification: ERNiMo-3

### Description:

FILLER METAL Alloy W filler metal is designed for welding of similar nickel-molybdenum alloys. However this "superalloy" is most commonly used for joining dissimilar combinations of cobalt and nickel base alloys used in high temperature service applications. The weld deposit of FILLER METAL Alloy W exhibits good mechanical properties up to 1800°F, however it does exhibit poor oxidation resistance above 1400°F and it should not be used for service applications in excess of 750 hours. FILLER METAL Alloy W is used in the aerospace industry for jet engine repair and maintenance, gas turbine parts, rotor hubs, and chemical process industries.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.12 max	1.00 max	4.0 - 7.0	0.04 max	0.03 max	1.00 max	
Cu	Ni	Co	Al	Ti	Cr	
0.50 max	Rem	2.50 max			4.0 - 6.0	
Nb(Cb) + Ta		Mo	V	W	Other	
		23.0 - 26.0	0.60 max	1.00 max	0.5 max	

Typical Mechanical Properties	
Tensile Strength	100,000 psi
Yield Strength	not reported
Elongation % in 2"	not reported

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL Alloy X

Specifications: AWS/ASME SFA A5.14

Classification: ERNiCrMo-2

### Description:

FILLER METAL Alloy X is a nickel-chromium-molybdenum "superalloy" used for welding of similar base metals such as alloy X to itself or to stainless steel, carbon steel and low alloy steels. This filler metal offers an exceptional combination of oxidation, corrosion, thermal shock resistance, fabricability and high-temperature strength. FILLER METAL Alloy X exhibits good ductility after prolonged exposure at temperatures of 1200, 1400, 1600°F (650, 760 and 870°C) for 16,000 hours. It commonly used in the aerospace industry for engine tailpipes, turbine blades, nozzle vanes and after burner components and is also used in petro-chemical applications to combat stress corrosion cracking. FILLER METAL Alloy X is also a good candidate for dissimilar welding between solid solution nickel based alloys and Ni-Fe-Cr alloys.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.05 - 0.15	1.00 max	17.0 - 20.0	0.04 max	0.03 max	0.50 max
Cu	Ni	Co	Al	Ti	Cr
0.50 max	Rem	0.50 - 2.50			20.5 - 23.0
Nb(Cb) + Ta		Mo	V	W	Other
		8.0 - 10.0		0.20 - 1.00	0.50 max

Typical Mechanical Properties	
Tensile Strength	195,000 psi
Yield Strength	not reported
Elongation % in 2"	not reported

Please note that not all of the Nickel wires are listed in this catalog. If you can not find what you are looking for, please contact WeldCor in BC at 1-604-701-6533 or in Alberta at 1-780-468-1777.

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL 55

Specifications: AWS A5.15

Classification: ENiFe-CI

### Description:

FILLER METAL 55 is used for welding of cast irons to themselves as well as for joining cast irons to mild steels. It is also employed for the repair of castings. The welds are moderately hard and may require carbide tipped tools for machining. A preheat and interpass temperature of not less than 350°F is required during welding.

Typical Chemistry Analysis					
C	Mn	Si	S	Fe	Ni
2.0 max	2.5 max	4.0 max	0.03 max	Rem	45.0- 60.0
Cu	Al	Other			
2.5 max	1.0 max	1.0 max			

Typical Mechanical Properties	
Tensile Strength	84,000 psi
Yield Strength	59,500 psi
Elongation % in 2"	8 %

## FILLER METAL 99

Specifications: AWS A5.15

Classification: ENi-CI

### Description:

FILLER METAL 99 is designed for welding of gray iron castings to themselves as well as joining them to mild steels or stainless steels. It is also used extensively to repair castings. The welds are quite machinable. A preheat and interpass temperature of not less than 350°F is recommended during welding.

Typical Chemistry Analysis					
C	Mn	Si	S	Fe	Ni
2.0 max	2.5 max	4.0 max	0.03 max	8.0 max	85 min
Cu	Al	Other			
2.5 max	1.0 max	1.0 max			

Typical Mechanical Properties	
Tensile Strength	72,000 psi
Yield Strength	56,500 psi
Elongation % in 2"	5 %

## FILLER METAL 112

Specifications: AWS 5.11

Classification: ENiCrMo-3

### Description:

FILLER METAL 112 is a covered electrode which is used to weld Ni-Cr-Mo alloys. It is also used extensively in overlay cladding where similar chemical composition is required on the clad side. Its applications include dissimilar joints between Ni-Cr-Mo alloys to either stainless steels, carbon, or low alloy steels. These electrodes are used in applications where the temperature ranges from cryogenic up to 1800°F.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	1.0 max	7.0 max	0.03 max	0.02 max	0.75 max
Cu	Ni	Cr	Nb(Cb)+Ta		Mo
0.50 max	55.0 min	20.0- 23.0	3.15-4.15		8.0- 10.0
Other					
0.50 max					

Typical Mechanical Properties	
Tensile Strength	114,500 psi
Yield Strength	89,500 psi
Elongation % in 2"	34 %

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL 117

Specifications: AWS A5.11

Classification: ENiCrCoMo-1

### Description:

FILLER METAL 117 is a covered electrode which is used for welding of Ni-Cr-Co-Mo alloys (UNS Number N06617). This electrode can also be used for overlay cladding where similar alloy is required. Weld metal provides optimum strength and oxidation resistance above 1500° up to 2100°F, especially when welding on base metals of Ni-Fe-Cr alloys.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.05-0.15	0.3 - 2.5	5.0 max	0.03 max	0.015 max	0.75 .max
Cu	Ni	Co	Cr	Nb(Cb)+Ta	
0.50 max	Rem	9.0-15.0	21.0-26.0	1.0 max	
Mo	Other				
8.0-10.0	0.50 max				

Typical Mechanical Properties	
Tensile Strength	110,000 psi
Yield Strength	87,000 psi
Elongation % in 2"	26 %

## FILLER METAL 122

Specifications: AWS 5.11

Classification: ENiCrMo-10

### Description:

FILLER METAL 122 electrodes are used for welding of Ni-Cr-Mo alloys as well as for overlay cladding on carbon, low alloy, or stainless steels. They are also used for dissimilar joints between Ni-Cr-Mo alloys and stainless, carbon, or low alloy steels. Typical specifications for the Ni-Cr-Mo base metals are ASTM, B574, B619, and B626—all of which have UNS Number N06022. FILLER METAL 122 offers excellent corrosion resistance in oxidizing as well as reducing media in a wide variety of chemical process environments. It offers an outstanding resistance to stress corrosion cracking, pitting, and crevice corrosion.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.02 max	1.0 max	2.0 - 6.0	0.03 max	0.015 max	0.2 max
Cu	Ni	Co	Cr	Nb(Cb)+Ta	
0.50 max	Rem	2.5 max	20.0-22.5		
Mo	V	W	Other		
12.5-14.5	0.35 max	2.5 - 3.5	0.50 max		

Typical Mechanical Properties	
Tensile Strength	114,000 psi
Yield Strength	78,500 psi
Elongation % in 2"	36 %

## FILLER METAL 141

Specifications: AWS 5.11

Classification: ENi-1

### Description:

FILLER METAL 141 is used for welding of cast and wrought forms of commercially pure nickel. These electrodes can also be used for surfacing as well as dissimilar welding between nickel and steel or stainless steel. The weld metal of this electrode has excellent corrosion resistance to caustic alkalies such as caustic soda and caustic potash.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	0.75 max	0.75 max	0.03 max	0.02 max	1.25 max
Cu	Ni	Al	Ti	Other	
0.25 max	92.0 min	1.0 max	1.0 - 4.0	0.50 max	

Typical Mechanical Properties	
Tensile Strength	64,500 psi
Yield Strength	58,500 psi
Elongation % in 2"	26 %

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL 182

Specifications: AWS 5.11

Classification: ENiCrFe-3

### Description:

FILLER METAL182 electrodes are used for welding of Ni-Cr-Fe alloys to themselves, and for dissimilar welding between Ni-Cr-Fe alloys and steels or stainless steels. The applications include surfacing as well as clad-side welding. The high manganese of this weld deposit reduces the possibility of micro fissures. High manganese reduces creep strength, which limits its usage up to 900°F.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	5.0-9.5	10.0 max	0.03 max	0.015 max	1.0 max
Cu	Ni	Ti	Cr	Nb(Cb)+Ta	
0.50 max	59.0 min	1.0 max	13.0- 17.0	1.0 - 2.5	
Other					
0.50 max					

Typical Mechanical Properties	
Tensile Strength	84,500 psi
Yield Strength	53,500 psi
Elongation % in 2"	36 %

## FILLER METAL 187

Specifications: AWS 5.6

Classification: ECuNi

### Description:

FILLER METAL 187 is a copper-nickel, all-position electrode for shielded metal arc welding of wrought or cast alloys of similar composition as well as 80 Cu + 20 Ni and 90 Cu + 10 Ni alloys. It is also used for the clad side of copper-nickel clad steels. This filler metal is widely used in marine applications because of its good resistance to the corrosive effects of sea water.

Typical Chemistry Analysis				
Cu (incl Ag)	Mn	Fe	Si	Ni
Rem	1.00- 2.50	0.40- 0.75	0.50 max	29.0- 33.0
P	Pb	Ti	Other (incl Zn & Sn)	
0.020 max	0.02 max	0.50 max	0.50 max	

Typical Mechanical Properties	
Tensile Strength	54,500 psi
Yield Strength	37,500 psi
Elongation % in 2"	28 %

## FILLER METAL 190

Specifications: AWS 5.11

Classification: ENiCu-7

### Description:

FILLER METAL 190 is used for welding materials of Ni-Cu alloys to themselves (such as ASTM, B126, B163, B164, B165--all of which have UNS Number N04400). They also can be used for overlay welding as well as for welding of clad steels where Ni-Cu surfacing is required. Dissimilar welding applications include joining nickel 200 and Cu-Ni alloys. This filler metal is widely used in marine applications because of its excellent resistance to the corrosive effects of seawater.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.15 max	4.0 max	2.5 max	0.02 max	0.015 max	1.5 max
Cu	Ni	Al	Ti	Other	
Rem	62.0- 69.0	0.75 max	1.0 max	0.50 max	

Typical Mechanical Properties	
Tensile Strength	75,500 psi
Yield Strength	52,000 psi
Elongation % in 2"	39 %

Data contained in this catalog are typical of the products described, but are not suitable for specifications.

## FILLER METAL WELD A

Specifications: AWS A5.11

Classification: ENiCrFe-2

### Description:

FILLER METAL Weld A electrodes are used for welding of Ni-Cr-Fe alloys to themselves as well as for dissimilar welding between various nickel alloys and carbon or stainless steels. These electrodes can also be used for overlay cladding where similar alloy is needed. These electrodes have wide applications ranging from cryogenic temperatures up to 1500°F.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.10 max	1.0 - 3.5	12.0 max	0.03 max	0.02 max	0.75 max	
Cu	Ni	Mo	Cr	Nb(Cb)+Ta		
0.50 max	62.0 min	0.5 - 2.5	13.0- 17.0	0.5 - 3.0		
Other						
0.50 max						

Typical Mechanical Properties	
Tensile Strength	89,000 psi
Yield Strength	72,000 psi
Elongation % in 2"	36 %

## FILLER METAL C276

Specifications: AWS 5.11

Classification: ENiCrMo-4

### Description:

FILLER METAL C276 is used for welding materials of similar composition. This low carbon Ni-Cr-Mo filler metal can also be used for dissimilar welding between Nil base alloys and stainless steels, or low alloy steels. This electrode is used for overlay cladding to withstand process corrosion. The weld metal is capable of withstanding cryogenic temperatures. Due to high Mo content this alloy offers excellent resistance to stress corrosion cracking and pitting and crevice corrosion.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.02 max	1.0 max	4.0 - 7.0	0.04 max	0.03 max	0.2 max	
Cu	Ni	Co	Cr	Mo	V	
0.50 max	Rem	2.5 max	14.5- 16.5	15.0 - 17.0	0.35 max	
W	Other					
3.0 - 4.5	0.50 max					

Typical Mechanical Properties	
Tensile Strength	106,000 psi
Yield Strength	78,500 psi
Elongation % in 2"	39 %

Please note that not all of the Nickel Electrodes are listed in this catalog. If you can not find what you are looking for, please contact WeldCor in BC at 1-604-701-6533 or in Alberta at 1-780-468-1777.

## FLUX CORED 82-T1

Specifications: A5.34: 2007

Classification: AWS: ENiCr3T1-1/-4

### Description:

FLUX CORED 82-T1 is a gas shielded flux cored wire that can be used for welding in all positions using 100% CO<sub>2</sub> or Argon/CO<sub>2</sub> mixtures. The wire possesses excellent weldability and can be used in a wide variety of similar and dissimilar welding and cladding applications. Some typical applications include joining Ni-Cr-Fe alloys, surfacing steel with Ni-Cr-Fe weld metal, or joining Inconel® 600, 601 and Incoloy® 800 to themselves or to stainless and carbon steels.

Typical Deposit Chemistry						
C	Mn	Fe	P	S	Si	
0.10 max	2.5 - 3.5	3.0 max	0.03 max	0.015 max	0.50 max	
Cu	Ni	Co	Cr	Nb(Cb) + Ta		
0.50 max	67 min		18.0- 22.0	2.0-3.0		
Mo	V	W	Other	Ti		
			0.50 max	0.75 max		

Typical Mechanical Properties	
Tensile Strength	89,000 psi
Yield Strength	58,000 psi
Elongation % in 2"	26 %

## FLUX CORED 622-T1

Specifications: A5.34: 2007

Classification: AWS: ENiCrMo10T1-1/-4

### Description:

FLUX CORED 622-T1 is a gas shielded flux cored wire that can be used for welding in all positions using 100% CO<sub>2</sub> or Argon/CO<sub>2</sub> mixtures. The wire possesses excellent weldability and is used in welding Ni-Cr-Mo alloys. Typical specifications for the Ni-Cr-Mo base metals are ASTM B574, B575, B619, B622, and B626, all of which have UNS# N06022.

Typical Deposit Chemistry						
C	Mn	Fe	P	S	Si	
0.02 max	1.0 max	2.0 - 6.0	0.03 max	0.015 max	0.2 max	
Cu	Ni	Co	Cr	Mo	V	
0.50 max	Rem	2.5 max	20.0 - 22.5	12.5 - 14.5	0.35 max	
W	Other					
2.5 - 3.5	0.50 max					

Typical Mechanical Properties	
Tensile Strength	115,000 psi
Yield Strength	82,000 psi
Elongation % in 2"	34 %

## FLUX CORED 625-T1

Specifications: A5.34: 2007

Classification: AWS: ENiCrMo3T1-1/-4

### Description:

FLUX CORED 625-T1 is a gas shielded flux cored wire that can be used for welding in all positions using 100% CO<sub>2</sub> or Ar/CO<sub>2</sub> mixtures. The wire possesses excellent weldability and can be used in a wide variety of similar and dissimilar welding and cladding applications. Some typical applications include joining Ni-Cr-Mo alloys, surfacing steel with Ni-Cr-Mo weld metal, joining steels to nickel based alloys, and joining 9% nickel steel for cryogenic applications.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.10 max	0.50 max	5.0 max	0.02 max	0.015 max	0.50 max	
Cu	Ni	Co	Cr	Nb(Cb) + Ta		
0.50 max	58 min		20.0 - 23.0	3.15 - 4.15		
Mo	V	W	Other	Ti		
8.0 - 10.0			0.50 max	0.40 max		

Typical Mechanical Properties	
Tensile Strength	112,000 psi
Yield Strength	72,000 psi
Elongation % in 2"	38 %

Data contained in this catalog are typical of the products described, but are not suitable for specifications.



## FLUX CORED C276-T1

Specifications: A5.34: 2007

Classification: AWS: ENiCrMo4T1-1/-4

### Description:

FLUX CORED C276-T1 is a gas shielded flux cored wire that can be used for welding in all positions using 100% CO<sub>2</sub> or Argon/CO<sub>2</sub> mixtures. The wire possesses excellent weldability and is used in welding Low Carbon Ni-Cr-Mo alloys to other nickel base alloys. Typical specifications for the Ni-Cr-Mo base metals are ASTM B574, B575, B619, B622, and B626, all of which have UNS# N10276.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.02 max	1.0 max	4.0 - 7.0	0.03 max	0.03 max	0.2 max
Cu	Ni	Co	Cr	Mo	V
0.50 max	Rem	2.5 max	14.5 - 16.5	15.0 - 17.0	.035 max
W	Other				
3.0 - 4.5	0.05 max				

Typical Mechanical Properties	
Tensile Strength	110,000 psi
Yield Strength	75,000 psi
Elongation % in 2"	37 %

Please note that not all of the Nickel Flux Cored Wires are listed in this catalog. If you can not find what you are looking for, please contact WeldCor in BC at 1-604-701-6533 or in Alberta at 1-780-468-1777.

Data contained in this catalog are typical of the products described, but are not suitable for specifications.