ARCONE TIG AND MIG FILLER WIRE

Nickel & High Nickel Alloy Welding Wires

Product	Uses	Typical Chemical Composition of the wire
Ni-1 AWS A5, 14 ERNi-1	**AROCONE** Ni-1 is used Mig and SAW Welding of Nickel 200 or 201.This filler metal is also employed for overlaying on steel as well as repairing cost iron casting. It can also be sued for dissimilar joints between Nickel Alloy to Stainless of ferritic steel.	Carbon .06 Phosphorus .008 Manganese .30 Copper .02 Silicon .40 Aluminium .5 Iron .10 Titanium 3.0 Sulfur .003 Nickel 95.5
Cu-Ni AWS A5 .7 ERCuNi	**ARCONE Cu-Ni** -7 is used for TIG and MIG and Oxy-fuel welding of 70/30 ,80/20 and 90/10 Copper Nickel Alloys .This filler metal can be used for MIG over relay on steel after a first layer with Nickel 208 .Dissimilar welding applications include joining Copper Nickel alloys to Nickel 200 or Nickel copper Alloys	Nickel 31.0 Iron .55 Manganese 0.75 Titanium .35 Silicon .10 Sulfur .002 Iron .4 Phosphorus .009 Aluminium .1 Copper Balance Phosphorus .006
NI-Cu -7 AWS A5.14 ERNi-Cu -7	**ARCONE CuNi- 7** is used for TIG or MIG welding of Nickel copper alloys (ASTM B127 ,B163 , B164 AND B165 UNS Number No.4400) This filler Metal can be used for MIG over relay on steel after a first layer with Nickel 208.Dissimilar welding application include joining Nickel joining Nickel Copper Alloys to Nickel 200 and Copper Nickel Alloys.	Carbon 05 Titanium 2.25 Manganese 3.45 Nickel 65.2 Silicon .77 Sulfur .002 Iron .4 Phosphorus .009 Aluminium .1 Copper Balance
Ni Cr -3 AWS A5.14 Ni-Cr-3	ARCONE NiCr-3 is Used for TIG and MIG and SAW welding of base materials such as (ASTM B-166, B-168-alloys which have UNS Number.6600) It is one of the most Nickel Alloys whose Application range from cryogenic to high temperatures. This filter metal can also be used for dissimilar welding application between various Nickel Alloys and stainless or Carbon steels. As well as overlaying.	Carbon .03 Columbum + Manganese 2.85 Titanium 2.5 Silicon .22 Nickel 72.9 Iron 1.1 Sulfur .001 Chromium 20.4 Phosphorus .003

ARCONE TIG AND MIG FILLER WIRE

Ni-CrCoMo-1 AWS A5.14 Ni-CrCoMo-1	**ARCONE NiCr CoMo-1** is used for TIG and MIG and SAW welding of Nickel Chrome –Cobalt – Molybdenum alloys ,as well as between themselves and dissimilar metals ,such as stainless ,Carbon , or Low alloys steel .This filler wire also can be used to overlay welding where similar chemical composition is desired . The weld metal provides optimum strength and oxidation resistance from 1500F (815C) up to 2100F (1150C)	Carbon .06 Molybdenum 9.05 Manganese .20 Aluminium 1.25 Silicon .11 Titanium .25 Iron .75 Nickel Balance Chromium 21.8 Sulfur .001 Cobalt 12.45 Phosphorus .005
NiCrCoMo-3 AWS A5.14 NiCrCoMo-3	ARCONE NiCrCoMo-3 is used for TIG and MIG and saw welding of Nickel –Chrome –Molybdenum alloys. This filler metal is very versatile in its application. It can be used for welding of dissimilar joints between Nickel –Chrome –Molybdenum alloys and stainless or Carbon or Low alloy steels. It can also be used for cladding as well as for spraying application.ARCONE NiCrMo-3 with low Iron less than 0.8 %) is preferred in various application where dilution of Iron must be controlled to the minimum. The high alloy content of ARCONE NiCrCoMo-3 enables it to withstand highly corrosive environments .The combination of Nickel and Chromium provides the resistance to oxidizing O conditions and the combinations of Nickel and Molybdenum provides resistance to reducing the conditions .Due to its Molybdenum content ,this alloys offers resistance to stress corrosion cracking ,pitting and crevice corrosion.	Carbon 0.01 Titanium .19 Manganese .05 Aluminium .17 Silicon .12 Sulfur .002 Chromium 21.9 Phosphorus .006 Molybdenum 8.65 Nickel Balance Columbium + Iron .60 Tantalum 3.7

ARCONE TIG AND MIG FILLER WIRE

NiCrCoMo-4 AWS A15.4 ER NiCrCoMo-4	ARC ONE NiCrCoMo-4 is used for welding material of similar chemical composition (UNS Nummber N10276) as well as dissimilar material of nickel base alloys steels and stainless steels. The wire also can be used for cladding steel with Nickel – chromium –molybdenum weld metal. This alloy due to its high molybdenum content, offers excellent resistance to stress corrosion cracking, pitting and crevice corrosion.	Carbon .001 Sulfur .002 Manganese . 05 5 Phosphorus .009 Silicon 0.04 Vanadium .15 Chromium 15.55 Nickel Balance Molybdenum 15.55 Iron 5.5 Tantalum 3.7 Tungsten 3.65

ARCONE TIG AND MIG FILLER WIRE

STAINLESS STEEL WELDING WIRE

304 L	**ARC ONE04L** is used for TIG and MIG and submerged arc welding of unsterilized Stainless Steels such as Types 301, 302 ,304 ,305 ,308.This filler metal is the most popular grade among stainless steels ,used for general purpose application where corrosion condition are moderate.	Carbon 0.0035 Chromium 18.00 Manganese 1.63 Phosphorus 0.043 Silicon 0.40 Nickel 9.0 Sulfur 0.005
ER308 AWS A5.9 ER308	**ARC ONE ER 308** is used for TIG and MIG and submerged arc welding of unstabilized Stainless Steels such as Types 301 ,304 ,305 ,308.This filler metal is the most popular grade among stainless steels ,used for general purpose application where corrosion condition are moderate.	Carbon 0.035 Sulfur 0.005 Manganese 1.65 Phosphorus 0.016 Silicon .46 Nitrogen .04 Chromium 20.45 WRC FN 8 Nickel 9.85
ER308 H AWS A5.9 ER308H	**ARC ONE08H** is used for TIG and MIG and submerged arc welding of unstabilized Stainless Steels such as Types 301, 302 ,304 ,305 ,308 with high carbon content on the higher side. Popular for high temperature applications.	Carbon 0.06 Sulfur 0.005 Manganese 1.65 Phosphorus 0.016 Silicon .46 Nitrogen .04 Chromium 20.45 WRC FN 8 Nickel 9.85
ER308L AWS A5.9 ER308L	**ARC ONE ER308L** has the same analysis as type 308 except the carbon content has been held to maximum of 0.03% to reduce the possibility of intergranular carbide precipitation. Ideal for welding Types 304L, 321, and 347 stainless steel. This is suitable wire for application at cryogenic temperature.	Carbon 0.19 Sulfur 0.003 Manganese 1.72 Phosphorus 0.13 Silicon .46 Nitrogen .050 Chromium 20.8 WRC FN 8 Nickel 10.1
ER309L AWS A5.9 ER309L	**ARC ONE ER309L** is of similar Composition as 309L.Except for the carbon content being lower than 0.03% the lower carbon content reduces the possibility of intergranular corrosion. The weld metal contains high Ni and Cr. Suitable for the welding or dissimilar Metal such as mild steel to stainless steel.	Carbon 0.21 Sulfur 0.006 Manganese 1.75 Phosphorus 0.14 Silicon .51 Nitrogen .05 Chromium 23.40 WRC FN 12 Nickel 12.70

ARCONE TIG AND MIG FILLER WIRE

STAINLESS STEEL WELDING WIRE

ER309L Mo AWS A5.9 ER309LMo	**ARC ONE ER309LMo** is excellent wire for overlays and for joining 316, 316L to carbon steel and for different joints. The weld metal is low carbon 25Cr- 12Ni-2.5 Mo Stainless steel. Excellent oxidization resistance at high temperature can be obtained suitable of welding of dissimilar metals.	Carbon 0.025 Copper 0.4 Manganese 1.7 Chromium 24.0 Silicon 0.5 Molybdenum 2.5 Sulfur 0.01 Nickel 13.0 Phosphorus 0.02
ER310 AWS A5.9 ER310	**ARC ONE ER 310** is used for the welding of stainless steels of similar composition in wrought or cast form. The weld deposit is fully austenitic and calls for low heat during welding. The filler metal can also be used for dissimilar welding.	Carbon 0.11 Sulfur 0.03 Manganese 1.75 Phosphorus 0.14 Silicon .51 Nitrogen .05 Chromium 23.40 WRC FN 12 Nickel 12.70
ER312 AWS A5.9 ER312	**ARC ONE ER 312** is used to weld cast alloys of similar composition and id used to weld dissimilar metals and overlays .During the welding of similar cast alloys limit the welding to two or three layers only.	Carbon 0.11 Molybdenum .08 Manganese 1.64 Phosphorus 0.17 Silicon .44 Nitrogen .05 Chromium 29.6 WRC FN 30 Min Nickel 12.70 Sulphur 0.12
ER316 AWS A5.9 ER316	ARC ONE ER 316 is used to weld wrought and cast forms of similar composition. The presence of Molybdenum increases its creep resistance at elevated temperature. The lower ferrite level of this nominal composition reduces the rate of corrosion in certain media and is suitable for use at cryogenic temperature.	Carbon 0.05 Molybdenum 2.30 Manganese 1.75 Sulphur 0.12 Silicon .48 Phosphorus 0.12 Chromium 19.4 Nitrogen .04 Nickel 12.20 WRC FN 5

ARCONE TIG AND MIG FILLER WIRE

STAINLESS STEEL WELDING WIRE

ER316L AWS A5.9 ER316L	ARC ONE ER316L has the same analysis as ER316. Except that the carbon content is limited to maximum of 0.03% in order to reduce the possibility of used for welding low carbon molybdenum –bearing authentic alloys. This low carbon alloy is not as strong at elevated temperature as ER 316H.	Carbon .016 Sulfur .01 Manganese 1.87 Phosphorus .019 Silicon 0.48 Nitrogen .05 Chromium 19.32 Iron Balance Nickel 13.2 WRC FN 6 Molybdenum 2.25 Iron
ER317L AWS A5.9 ER317L	ARC ONE 317 L is used for welding stainless steels with similar composition. Due to its higher Molybdenum content, this alloy offers high resistance to pitting and crevice corrosion .Lower carbon makes the weld metal less susceptible to intergranular corrosion.	Carbon 0.17 Molybdenum 3.25 Manganese 1.66 Sulphur 0.06 Silicon .44 Phosphorus 0.12 Chromium 19.4 Nitrogen .04 Nickel 13.85 WRC FN 6
ER318 AWS A5.9 ER318	ARC ONE ER318 is Columbium stabilised stainless steel with excellent corrosion resistance Used to weld 318 or 316 type stainless Steel.	Carbon 0.06 Phosphorus 0.01 Manganese 1.7 Molybdenum 2.5 Silicon 0.4 Copper 0.2 Chromium 19.0 Columbium .07 Sulfur 0.01 Nickel 12.5
ER321 AWS A5.9 ER321	Titanium stabilised stainless steel used for welding of 321 or 308 type steels.	Carbon 0.06 Copper 0.2 Manganese 1.65 Chromium 19.5 Silicon 0.4 Titanium 0.6 Sulfur 0.01 Nickel 10.00 Phosphorus 0.01
ER347 AWS A5.9 ER347	ARC ONE ER347 is columbium stabilised stainless steel welding wire used to weld types 321 and 347 .Addition of columbium reduces the possibility of chromium carbide precipitation and consequent intergranular corrosion.	Carbon .04 Sulfur .005 Manganese 1.65 Phosphorus .014 Silicon 0.52 Nitrogen .04 Chromium 19.9 Columbium .72 Nickel 9.75 WRC FN 10

ARCONE TIG AND MIG FILLER WIRE

STAINLESS STEEL WELDING WIRE

ER410 AWS A5.9 ER410	**ARC ONE ER 410** is used to weld Type 403, 405, 410 and 416.It is also used for welding overlay on carbon steels to resist corrosion, erosion or abrasion .This material being an air hardening type, calls for preheating of the joint to 350^0 F before welding.	Carbon 0.11 Chromium 12.5 Manganese .45 Sulphur .01 Silicon .39 Phosphorus. 014
ER430 AWS A5.9 ER430	**ARCONE 430** is a ferritic stainless steel which offers good ductility in heat-treated condition .In addition to the application of welding similar alloys; it is also used for overlays and thermal spraying.	Carbon 0.7 Chromium 16.5 Manganese .44 Sulphur .01 Silicon .36 Phosphorus. 014
ER385/904L AWS A5.9 ER385(ER904L)	**ARC-ONE ER385 /904L** is used for welding material of similar chemical composition which are used for fabrication of equipment and vessels for handling of sulphuric acid and many chloride containing media. This filler metal may also find applications for joining type 317 L material where improved corrosion resistance in specific media is needed.	Carbon 0.02 Phosphorus 0.01 Manganese 1.7 Copper 1.5 Silicon 0.4 Molybdenum 4.5 Chromium 21 Nickel 25.0 Sulfur 0.01
ER2209 AWS A5.9 ER2209	ARC ONE ER2209 is filler material designed to weld duplex stainless stills such as UNS number N31803 .The welds are characterized by high tensile strength and improved resistance to stress corrosion cracking and pitting .The wire is lower in ferrite compared to that of base metal in order to obtain welability.	Carbon 0.016 Molybdenum 3.2 Manganese 1.4 Sulphur 0.17 Silicon .45 WRC FN 40min Chromium 22.4 Nickel 8.5

ARCONE TIG AND MIG FILLER WIRE

LOW ALLOY STEEL WIRES

70S-G AWS 5.18 ER 70S-G	ARC ONE 70S-G a General purpose wire for both Gas Metal Arc welding and TIG welding of carbon steels, Excellent for Gas metal Arc welding with Argon + Co_2 mixtures.	Carbon 0.08 R/Nmm^2 560/660 Silicon 0.90 S/Nmm^2 450/530 Manganese 1.75 A % - 5d 24/30 Ti+Zr < 0.15 KV J min -20^0 C 90 Aluminium < 0.02
70S-6 AWS 5.18 ER 70S-6	ARC ONE 70S -6 all position wire for a Gas metal Arc welding of carbon steels with Co_2 gas or Argon + Co_2 mixtures .A slightly higher silicon and manganese increases better yield and tensile strength of weld metal that is smooth and sound.	Carbon 0.08 R/Nmm^2 520/620 Silicon 0.85 S/Nmm^2 430/510 Manganese 1.10 A % - 5d 24/30 Ti+Zr < 0.15 KV J min -20^0 C 90 Aluminium < 0.02
70S-2 AWS 5.18 ER 70S-2	ARC ONE 70S-2 , a triple de- oxidised wire for giving radiographic quality TIG welds. Can also used for Gas metal Gas metal Arc welding ALFA70S-2 are copper coated Rod Specially suitable for welding	Carbon 0.05 Aluminium < 0.02 Silicon 0.55 R/Nmm^2 500/580 Manganese 1.10 S/Nmm^2 420/500 Ti 0.10 A % - 5d 24/32 Zr 0.08 KV J min -20^0 C 90
80S-D2 AWS 5.18 ER 80S-D2	ARC ONE 80S-D2 Suitable for welding pipes & tubes of ½ MO -1.15 Cr steels .It deposited much free welds with excellent mechanical properties as well as high creep resistance and toughness the weld deposited is radio graphic Quality.	Carbon 0.09R/Nmm^2 >600/680 Silicon 0.60 R/Nmm^2 > 500/580 Manganese 1.90 A % - 5d 20/26 Mo 0.50 A % - 5d 24/32 Cu <0.25 KV J min -20^0 C 90 Chromium 1.10
80S-B2 AWS 5.18 ER 80S-B2	**ARC ONE 80S B2** is designed for Gas Metal Arc Welding or TIG welding of 2-1/4 Cr/1 Mo. Steel .Which are used for high temperature service. A preheating and interpass temperature of not less than 300 ^{0}F must be maintained during welding	Carbon .09 Molybdenum .55 Manganese .55 Phosphorus 0.12 Silicon .48 Sulfur .006 Chromium 1.35 Copper .15

ARCONE TIG AND MIG FILLER WIRE

LOW ALLOY STEEL WIRES

90SB3 AWS 5.18 ER 90S-B3	**ARC ONE 90SB3** is designed for Gas Metal Arc Welding or TIG welding of 2-1/4 Cr/1 Mo. Steel .Which are used for high temperature service. A preheating and interpass temperature of not less than 300 ^{0}F must be maintained during welding	Carbon .08 Molybdenum 1.08 Manganese .60Phosphorus 0.09 Silicon .48 Sulfur .006 Chromium 2.55 Copper .12
80S-B6 AWS 5.18 ER 80S-B6	**ARC ONE 80S –B6** (502) is low alloyed 5Cr , 0.5 Mo ,filler Rod designed to weld material of similar chemical composition ,for high temperature service application. This is an air hardening material and as such calls for preheat and interpass temperature of 350^0 F minimum during the process of welding.	Carbon 0.05 Molybdenum .55 Manganese .44 Sulfur .006 Silicon .36 phosphorus 0.09 Chromium 5.60
80S-B8 AWS 5.18 ER 80S-B8	**ARC ONE 80S-B8 (505)** is 9Cr -1 Mo alloyed designed for welding material of similar composition. This alloy being an –hardening type calls for preheat and interpass temperature of not less than 350^{0}F minimum during the process of welding	Carbon 0.08 Molybdenum 1.05 Manganese .45 Sulfur .005 Silicon .34 phosphorus . 009 Chromium 9.15
90S-B9 AWS 5.18 ER 90S-B9	**ARC ONE 90S-B9 –** For welding 9Cr –Mo P91 grade steels. Required controlled preheat ,Interpass and post weld heat treatment .GTAW of high Temperature steels and steels for hot hydrogen ,s service ,especially in oil refineries. AWS has changed the classification for this product. The previous classification was A5.9 er-505	Carbon 0.09 Sulfur .004 Manganese .60 Phosphorus .003 Silicon 19 Vanadium .18 Chromium 9.32 Columbium .07 Nickel .5 Iron Balance Molybdenum .95

ARCONE TIG AND MIG FILLER WIRE

FLUX CORED WIRE

71T-1 AWS 5.20 ER 71T-1	**ARC ONE E71T-1** is an all position flus cored wire designed to be used with CO_2 or Ar/Co_2 gas mixture . Its low temperature impact toughness is better than E71T-1 (AWS A5.20) .The typical application include shipbuilding ,storage ,vessels ,structural fabrication ,machinery and piping etc.	C 0.04 MN 1.32 Si 0.42 P 0.020 S 0.010	Y.P. N/mm^2 480 T.S/mm^2 560 EL% 29 IV -20^{0}C J 100
71T-5 AWS 5.20 ER 71T-5	**ARC ONE E71T-5** is un all position flux cored wire designed to be used with Co_2 or Ar/Co_2 gas mixture .Its low temperature impact toughness is better that E71 T- 1(AWS A5.20).The typical applications of ALFA E71T-5 are constructional steel ,machinery and ship building .	C 0.05 MN 1.35 Si 0.50 P 0.020 S 0.012	Y.P. N/mm^2 510 T.S/mm^2 570 EL% 29 IV -29^{0}C J 50
308LT-1 AWS 5.22 E308 LT-1	**ARC ONE 308LT-1** is special for 100 % Co_2 Gas and all position welding. The weld bead has very excellent slag detachability .An austenitic Stainless steel deposited that can be used for joining common austenitic steel such as types 304, 304L, 321, CF-8 and CF3 .It provides good résistance to inter –granular corrosion. It can also be used as an intermediate layer for hard facing.	C 0.029 Mn 1.53 Si 0.50 P 0.022 S 0.012	Ni 9.65 Cr 19.21 T.S/mm^2 565 EL % 44 IV -1960^{0}C J 33
309 LT -1 AWS 5.20 ER 309LT-1	**ARC ONE 309LT-1** is special for 100 % Co_2 Gas and all position welding. The weld bead has an excellent .It is commonly used for welding similar alloys in wrought of cast forms ,also used in welding dissimilar metals ,such as joining Type 304 mild steel.	C 0.027 Mn 1.51 Si 0.49 P 0.024 S 0.003	Ni 12.75 Cr 23.90 T.S/mm^2 577 EL % 41 IV -60^{0}C J 34

ARCONE TIG AND MIG FILLER WIRE

309 LMo T1-1 AWS 5.22 309LMo T1-1	ARC ONE E309 LMo T1-1 is a modified type ARC ONE 309 LT-1 with addition of molybdenum. Used to join stainless steel to carbon and low alloy steels. The addition of molybdenum increases tensile strength and corrosion resitance.Also used to clad carbon steel	C Mn Si P S	0.033 1.72 0.50 0.029 0.003	Ni Cr Mo T.S/mm^2 EL %	13.53 23.24 2.33 580 38
316 LT -1 AWS 5.22 ER 316LT-1	**ARC ONE 316 LT -1** is special for 100% Co2 gas and position welding. The weld bead have very excellent slag. An Austenitic stainless steel deposited that can be used for joining Types 316 ,316 L , CF-8M AND CF-3M stainless steel. It provides high resistance to integanular corrosion due to the low carbon content.	C Mn Si P S	0.027 1.51 0.40 0.026 0.003	Ni Cr Mo T.S/mm^2 EL % IV -196^{0}C J	12.75 19.09 2.33 577 45 32
347 LT -1 AWS 5.22 ER347LT-1	**ARC ONE 347 L T -1** An Austenitic stainless steel deposit that is used for joining stabilized steel such as Types 321 and 347.It can also used for joining common austenitic stainless steel such as Types 301, 302, 304 and CF-8 , It also performs well at high temperature.	C Mn Si P S	0.03 1.66 0.58 0.026 0.003	Ni Cr Mo Nb T.S/mm^2 EL % IV -0^{0}C J	10.43 19.10 0.05 0.70 600 39 50
317 LT -1 AWS 5.22 ER 317LT-1	**ARC ONE 317 LT -1** An Austenitic stainless steel deposit with low carbon content is used for joining types 317, 317 L , 316 , CF-8M and CF-3M stainless steel ,Creep resistance are better than 316 Grades.	C Mn Si P Ni Cr	0.030 1.34 0.65 0.020 12.68 18.26	Mo Cu T.S/mm^2 EL%	3.19 0.33 580 41

ARCONE TIG AND MIG FILLER WIRE

ALUMINIUM ALLOYS WELDING WIRES

NG -1B AWS 5.10 ER 1100	**ARCONE NG-1B** is used for welding of pure Aluminium and Aluminium construction. It is relatively soft alloy that is very formable and it is used Extensively in thin gauge and foil products and has good welding characteristics.	Si 0.25 Max Fe 0.4 Max Cu 0.05 -0.20 Mn 0.05 Max Zn 0.10 Max AL 99 Min
NG - 21 AWS 5.10 ER 4043	**ARC ONE NG-21** is used for welding of Aluminium Silicon alloys with Si up to 6% it is used for welding AL Mg Si types with up to 6 % Silicon. Not recommended for anodising .Non heat treatable.	Si 4.5 -6 Fe 0.8 Max Cu 0.30 Max Mn 0.05 Max Mg.0.05 Max Zn 0.10 Max Al Rest Fe 0.60 Max
NG - 12 AWS 5.10 ER 4047	**ARC ONE NG 12** is used for Welding of Aluminium –Silicon alloys with Si upto 12% Aluminium wires and rods for welding and brazing good mechanical characteristics. Their excellent corrosion resistance and low melting point ensure very low number of deformations in the origin metal.	Si 11-13 Fe 0.8 Max Cu 0.30 Max Mn 0.15 Max Mg 0.10 Max Zn 0.20 Max Al Rest
NG - 6 AWS 5.10 ER 5336	**ARC ONE NG -6** is used for welding or high strength , Aluminium - Magnesium alloys with Mg upto 6 % wires widely used in Automobile and Marine Industries .High corrosion resistance . Application in the construction of ships storage tanks railway and the automobile industries.	Si 0.25 max Fe 0.4 Max Cu 0.30 Max Mn 0.15 Max Mg 4.50 -5.50 Zn 0.20 Max Al Rest

ARCONE TIG AND MIG FILLER WIRE

COPPER ALLOYS TIG /MIG WELDING WIRES

cu AWS 5.7 ERcu	**ARC ONE** Cu is used for welding and surfacing of Copper Sheets, sections vessels, etc. Used in chemicals, foods, Paper, Textile, Brewery, shipbuilding and other industries, Provides Colour match.	Cu 98 min Si 0.5 Max Mn 0.06 – 05 Sn 1.0 Max P 0.20 – 0.15 Other 0.50 Max
CuNi (90-10) AWS 5.10 ER CuNi	**ARC ONE CuNi (90-10)** is used for welding and surfacing, used in vessels , Condense Tubes, Condensers , Heat exchanger etc. In the chemical Industry and shipbuilding. The alloy provides corrosion resistance particularly against salt water such as sea water.	Cu Balance Ni 10-12 Mn 1.0 Max Ti 0.20 – 050 P 0.02 Max Pb 0.02 Max Si 0.25 Max Other 0.50 Max Fe 0.40 – 0.75

TIG FILLER METAL FOR PURE TITANIUM WELDING

Specification

AWS A 5.16 : ERTi-1 , ERTi-2 , ERTi-3 ,ERTi- 4
ARC ONE : ERTi-1 , ERTi-2 , ERTi-3 ,ERTi- 4

Type of Applications

The most common application of Pure Titanium is aircraft industry, where tensile strength and weight radios are so critical. Other uses would include cryogenic and petrochemical application. Such as chemical process heat exchangers pressure vessels and piping systems, pulp blanching systems, electro chemical and chemical storage tanks.

Properties

Pure Titanium is TIG filler metal used for welding pure titanium alloys commonly found in applications requiring high temperature resistance and resistance to chemical regents. Although there are four grades of Pure Titanium filler metals. C.P.Grade 2(ERTi -2) is most popular because of its good balance strength, formability and welability.

ARCONE TIG AND MIG FILLER WIRE

Tips for welding with Titanium.

Welding with titanium requires extreme cleanliness. Grind of file mill scale. Clean or file of mill scale. Clean surface oxides with 35% nitric 5% hydrofluoric acid solution at room temperature, and then rinse with water and air dry. Grease or oils should be cleared with nonchlorinated degreasing solvent, acetone or methanol. Light oil can be washed away with normal household detergent than air dried.

Titanium is reactive metal and such as it is sensitive to embirttlement by oxygen, nitrogen and hydrogen within the weld zone area ,at temperatures above 250^{0}C.Consequently the weld metal must be protected against atmospherics contamination that may be caused by these elements. This can be most easily attained by holding the shielding gas over the weld area until it cools to approximately 320° C.

Argon is recommended shielding gas, however argon –helium mixture will give grater penetration although at the expense of arc stability.

Technical Data

	ERTi-1	ERTi-2	ERTi-3	ERTi-4	AMS4951D
Tensile strength (Kg/mm^2)	23-25	31-35	42-44	53-55	32-34
Yield Strength (0.2 % offset Kg/mm^2)	15-17	26-28	35-38	46-49	15-18
Elongation (%)	24	20	18	15	35

ARCONE TIG AND MIG FILLER WIRE

Typical Chemical Composition (%)

	ERTi-1	ERTi-2	ERTi-3	ERTi-4	AMS4951D
C :	0.030	0.030	0.030	0.030	0.080
O:	0.100	0.100	0.10-0.15	0.15-0.25	0.180
H:	0.005	0.008	0.008	0.008	0.005
N:	0.015	0.020	0.020	0.020	0.050
Fe:	0.100	0.200	0.200	0.300	0.200
Ti:	Bal	Bal	Bal	Bal	Bal

Manual GTA Welding

Wire Dia(mm)	Current (A)	Voltage (V)	Travel speed Speed(mm/Min)	Depositing Rate (lb/h)
1.6	180	16	130-380	1.0-1.5
2.4	190	17	130-180	1.7-2.0
3.2	205	19	130-180	2.6-3.0