

AK ER3545Nb

Description: For further details, please contact the Sales Director: gan.zh@akweld.com

Typical Chemical Composition(%):

	C	Si	Mn	S	P	Fe	Ni	Cr	Ti	Nb+Ta	W	Zr
Requirement	0.42-0.48	1.2-1.4	1.3-1.5	0.010	0.010	Bal.	44.0-46.0	34.0-36.0	0.13-0.16	0.9-1.0	0.2-0.25	0.05-0.1
Actual Result	0.454	1.22	1.38	0.0047	0.0044	15.97	44.29	34.46	0.138	0.955	0.22	0.088

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	——	——	——	
Actual Result	662	459	8	



GB/T 13814 ENi6117

AWS A5.11 ENiCrCoMo-1

EN ISO 14172-ENi6117

AK ENiCrCoMo-1

Description: AK-ENiCrCoMo-1 is a nickel-based alloy electrode with low-hydrogen coating. Its chemical composition is NiCr22Co12Mo. Can be welded in all positions.

Application: Mainly used for welding nickel-based alloys such as Inconel 600/601, Incoloy 800H, Incoloy 825 and HK40/HP40 iron-nickel-based high-temperature corrosion-resistant alloys.

Typical Chemical Composition(%):

	C	Si	Mn	S	P	Fe	Ni	Cr	Mo
Requirement	0.05-0.15	1.00	3.00	0.015	0.020	5.00	≥45	20.0-26.0	8.00-10.00
Actual Result	0.09	0.35	1.13	0.004	0.009	1.50	52.86	23.5	8.72
	Co	Cu	Al	Ti					
Requirement	9.00-15.00	0.50	1.50	0.60					
Actual Result	11.5	0.02	0.15	0.17					

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	≥620	≥400	22	
Actual Result	760	540	30	



GB/T 15620 S Ni2061

AWS A5.14 ERNi-1

EN ISO 18274-S Ni 2061

AK ERNi-1

Description: Pure nickel type argon gas shielding TIG rod, with nominal composition: 86%Ni-3%Ti; Added Ti element to reduce the possibility of having blow holes while welding; stable arc. beautiful weld bead appearance, great iron water fluidity, excellent weld ability.

Application: Suitable for welding of industrial pure nickel forging and casting, such as 200, 201 nickel alloy, nickel coated steel plate, ASTM B160, B161, B162, B163 and UNS N02200 and N02201. can also be used for dissimilar steel welding between nickel alloy and stainless steel and surface buildup welding.

Typical Chemical Composition(%):

	C	Si	Mn	S	P	Fe	Ni	Ti	Cr
Requirement	0.15	0.70	1.00	0.015	0.030	1.00	≥92	2.00-3.50	—
Actual Result	0.005	0.26	0.48	0.004	0.006	0.07	94.69	2.95	0.46

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	—	—	—	
Actual Result	550	—	36	



GB/T 15620 SNi4060

AWS A5.14 ERNiCu-7

EN ISO 18274-S Ni4060

AK ERNiCu-7

Description: Nominal composition is: 65%Ni-30%Cu-3%Mn-2%Ti; Beautiful weld bead appearance.great iron water fluidity,and excellent weld ability: With the right amount of Mn and Ti to effectively prevent heat cracking and blowholes from happening.

Application: Suitable for welding nickel copper alloy. such as Monel 400/404. ASTM B127and etc. ; Can also be used for welding dissimilar metal between steel and Ni-Cu alloy. and buildup welding on the steel surface;Often used in heat exchanger, pipe, vessel, and evaporator in offshore engineering, petrochemical industry and power plant industry.

Typical Chemical Composition(%):

	C	Si	Mn	S	P	Fe	Ni	Ti	Cu
Requirement	0.15	1.25	4.00	0.015	0.020	2.50	62-69	1.00	bal.
Actual Result	0.005	0.79	2.88	0.007	0.009	0.12	67.4	0.42	27.3

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	480	— —	27	
Actual Result	563	— —	41.5	



GB/T 15620 S Ni6625
AWS A5.14 ERNiCrMo-3
EN ISO 18274-S Ni6625

AK ERNiCrMo-3

Description: Ni-Cr-Mo type nickel alloy argon gas shielding TIG rod, nominal composition is: 61%Ni-22%Cr-9%Mo-3.5%Nb+Ta; Deposited metal with excellent mechanical properties and pitting resistance and crevice corrosive resistance; Stable arc, beautiful weld bead appearance, great iron water fluidity, excellent weld ability.

Application: Suitable for welding Ni-Cr-Mo alloy, such as Inconel 625, Incoloy 825, can be used for dissimilar metal welding and buildup welding with nickel alloy and stainless steel, can be used in environment between low temperature to 540°C.

Typical Chemical Composition(%):

	C	Si	Mn	S	P	Fe	Ni	Cr	Mo
Requirement	0.10	0.50	0.50	0.015	0.020	5.00	≥ 58	20.00-23.00	8.00-10.00
Actual Result	0.006	0.12	0.15	0.006	0.009	0.18	64.84	22.02	8.75

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	760	—	27	
Actual Result	790	—	46	



GB/T 15620 SNi6267
AWS A5.14 ERNiCrMo-4
EN ISO 18274-S Ni6267

AK ERNiCrMo-4

Description: Ni-Cr-Mo type argon gas welding wire. with nominal composition of 57Ni-16Cr-15.5Mo-5.5Fe-4W; Excellent mechanical properties of deposited metal and excellent pitting resistance and crevice corrosion resistance; Stable arc, beautiful weld bead appearance, great iron water fluidity, with excellent weld ability.

Application: Suitable for the welding of Ni-Cr-Mo alloy, such as ASTM B574, B619, B628 and UNS N10276 and etc; can also be used for dissimilar metal welding on the surface, or the welding of 9Ni steel.

Typical Chemical Composition(%):

	C	Si	Mn	S	P	Fe	Ni	Cr	W	Mo
Requirement	0.02	0.08	1.00	0.030	0.040	4.00-7.00	bal.	14.50-16.50	3.00-4.50	15.00-17.00
Actual Result	0.018	0.05	0.52	0.005	0.010	5.68	58.21	15.88	3.77	15.68

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	690	—	27	
Actual Result	785	—	41	

AK ER1070

TIG/MIG

Description: ER1070 is a pure aluminum welding wire containing more than 99.7% aluminum. It has good weldability and corrosion resistance, as well as excellent plasticity and toughness, but its strength is low.

Application: Argon arc welding (MIG or TIG) and oxygen-acetylene gas welding are used to weld pure aluminum and aluminum alloys that do not require high joint performance as filling materials, and are widely used in aluminum equipment in the electric power and chemical industries.

Typical Chemical Composition(%):

	Si	Fe	Cu	Mn	Mg	Zn	Al	Be	Other
Requirement	0.20	0.25	0.04	0.03	0.03	0.04	99.7	0.0003	—
Actual Result	0.13	0.11	0.01	0.02	—	0.005	99.71	0.0002	—

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	—	—	—	
Actual Result	90	—	35	



GB/T 10858 S Al 4043

AWS A5.10 ER4043

EN ISO 18273 S Al 4043

AK ER4043

TIG/MIG

Description: An Al-Si alloy welding wire can use where base metal requires thermal treatment, mainly 6xxx series alloys. Higher silicon improves fluidity, making it become the preferred choice of welders. This product is not sensitive to weld crack, it also can be used on weld forge and casting materials.

Application: Welding for 6xxx series alloys.

Typical Chemical Composition(%):

	Si	Fe	Cu	Mn	Mg	Zn	Al	Be	Ti
Requirement	4.5-6.0	0.80	0.03	0.05	0.05	0.10	bal.	0.0003	0.20
Actual Result	5.0	0.15	0.01	0.02	0.02	0.05	bal.	0.0002	0.10

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	— —	— —	— —	
Actual Result	105	155	15	



GB/T 10858 S Al 5356

AWS A5.10 ER5356

EN ISO 18273 S Al 5356

AK ER5356

TIG/MIG

Description: An Al-Mg alloy welding wire is mainly used where higher weld strength and greater ductility are required. 5356 has greater resistance to corrosion (saltwater) and a better color match after anodizing DC Reversed Polarity connection. Argon shielding gas is required.

Application: Welding for 5xxx series alloys.

Typical Chemical Composition(%):

	Si	Fe	Cu	Mn	Mg	Zn	Al	Cr	Be	Ti
Requirement	0.25	0.40	0.10	0.05-0.20	4.5-5.5	0.10	bal.	0.05-0.20	0.0003	0.06-0.20
Actual Result	0.15	0.10	0.03	0.15	5.2	0.05	bal.	0.10	0.0002	0.10

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	— —	— —	— —	
Actual Result	105	205	17	



GB/T 10858 S Al 4047
AWS A5.10 ER4047
EN ISO 18273 S Al 4047

AK ER4047

TIG/MIG

Description: ER4047 is an aluminum-silicon eutectic alloy welding wire, and its welding performance and weld characteristics are similar to ER4043. This welding wire can also be used as solder.

Application: Suitable for welding cast aluminum, 2000 series and Al-Mg-Si series aluminum alloys.

Typical Chemical Composition(%):

	Si	Fe	Cu	Mn	Mg	Zn	Al	Be		
Requirement	11.0-13.0	0.80	0.30	0.15	0.1	0.20	bal.	0.0003	—	—
Actual Result	11.66	0.21	0.06	0.06	0.01	0.02	bal.	0.0002	—	—

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	—	—	—	
Actual Result	175	125	14	



GB/T 10858 S Al 5183
AWS A5.10 ER5183
EN ISO 18273 S Al 5183

AK ER5183

TIG/MIG

Description: ER5183 is an aluminum-magnesium welding wire containing Mg and Mn, which has excellent crack resistance and corrosion resistance, and high strength. Excellent welding process performance, beautiful weld shape, stable arc and small spatter.

Application: It is suitable for argon arc welding of aluminum-magnesium alloys and aluminum zinc magnesium alloys, and is one of the most commonly used aluminum alloy welding wires. It is often used in aluminum alloy welding related to offshore platforms, cryogenic vessels, railway locomotives and automobile industries.

Typical Chemical Composition(%):

	Si	Fe	Cu	Mn	Mg	Zn	Al	Be	Cr	Ti
Requirement	0.40	0.40	0.10	0.50-1.0	4.3-5.2	0.25	bal.	0.0005	0.05-0.25	0.15
Actual Result	0.15	0.16	0.03	0.67	4.77	0.05	bal.	0.0002	0.08	0.07

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	— —	— —	— —	
Actual Result	302	208	16	



GB/T 10858 S Al 5556A

AWS A5.10 ER5556A (AlMg5Mn)

EN ISO 18273 S Al 5556A

AK ER5556A

TIG/MIG

Description: AK-ER5556A is a high strength aluminum magnesium manganese alloy. It is often used for welding high-strength base metals such as 5083, and has good strength on 6XXX base metals.

Application: Control elements for higher weld strength than 5356 alloy; good ductility and improved crack resistance ; high corrosion resistance for marine applications.

Typical Chemical Composition(%):

	Si	Fe	Cu	Mn	Mg	Zn	Al	Be	Cr	Ti
Requirement	0.25	0.40	0.10	0.60-1.0	5.0-5.5	0.20	bal.	0.0003	0.05-0.20	0.05-0.20
Actual Result	0.02	0.10	0.05	0.73	5.21	0.05	bal.	0.0002	0.10	0.10

Typical Mechanical Properties:

	Tensile Strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	---	---	---	
Actual Result	305	185	19	



AK ERCuSi-A

TIG/MIG

GB/T 9460 CuSiMn

AWS A5.7 ERCuSi-A

EN ISO 24373 CuSi3Mn1

Application: Applied to butt welding and surfacing welding of brass, especially suitable for MIG welding of galvanized steel sheets, and preheating is required for MIG surfacing welding of large weldments. Pulse argon arc welding is recommended for surfacing steel.

Typical Chemical Composition(%):

	Cu	Al	Fe	Mn	P	Pb	Si	Sn	Zn	Other
ISO 24373	bal.	0.02	0.50	0.50-1.5	0.05	0.02	2.8-4.0	0.20	0.40	0.50
AWS A5.7	bal.	0.01	0.50	0.50-1.5	—	0.02	2.8-4.0	1.0	1.0	0.50

Physical Properties Mechanical Properties:

Solids-Temperature	910℃	Liquids-Temperature	1025℃
Density	8.5kg/dm ³	Tensile Strength	330-370N/mm ²
Elongation	40%	Brinell-Hardness	80-90HB



GB/T 9460 CuAl9Ni5Fe3Mn2

AWS A5.7 ERCuNiAl

EN ISO 24373 CuAl9Ni5Fe3Mn2

AK ERCuNiAl

TIG/MIG

Application: Recommended for the welding and hard facing of copper-aluminum alloys, aluminum coated steel in machinery and chemical industry as well as for iron welding in shipbuilding. Also excellent for the welding of brass tube and copper-aluminum that requires resistance to erosion.

Typical Chemical Composition(%):

	Cu	Al	Fe	Mn	Ni	Pb	Si	Sn	Zn	Other
ISO 24373	bal.	8.5-9.5	3.0-5.0	0.6-3.5	4.0-5.5	0.02	0.10	—	0.10	0.50
AWS A5.7	bal.	0.01	3.0-5.0	0.6-3.5	4.0-5.5	0.02	0.10	—	0.10	0.50

Physical Properties Mechanical Properties:

Solids-Temperature	1015°C	Liquids-Temperature	1045°C
Density	7.5kg/dm ³	Tensile Strength	450-560N/mm ²
Elongation	10%	Brinell-Hardness	150-170HB



AK ERCuNiAl

TIG/MIG

GB/T 9460 CuAl9Ni5Fe3Mn2

AWS A5.7 ERCuNiAl

EN ISO 24373 CuAl9Ni5Fe3Mn2

Application: Recommended for the welding and hard facing of copper-aluminum alloys, aluminum coated steel in machinery and chemical industry as well as for iron welding in shipbuilding. Also excellent for the welding of brass tube and copper-aluminum that requires resistance to erosion.

Typical Chemical Composition(%):

	Cu	Al	Fe	Mn	Ni	Pb	Si	Sn	Zn	Other
ISO 24373	bal.	8.5-9.5	3.0-5.0	0.6-3.5	4.0-5.5	0.02	0.10	—	0.10	0.50
AWS A5.7	bal.	0.01	3.0-5.0	0.6-3.5	4.0-5.5	0.02	0.10	—	0.10	0.50

Physical Properties Mechanical Properties:

Solids-Temperature	1015°C	Liquids-Temperature	1045°C
Density	7.5kg/dm ³	Tensile Strength	450-560N/mm ²
Elongation	10%	Brinell-Hardness	150-170HB

AK ERCuSn-C

TIG/MIG

Application: Applied to the welding of copper and copper alloys, especially for butt welding of brass and steel, it is recommended to preheat when used for large thickness weld ments, and pulse argon arc welding is recommended for steel surfacing.

Typical Chemical Compostion(%):

	Cu	Al	Fe	Ni	P	Pb	Si	Sn	Zn	Other
ISO 24373	bal.	—	0.10	0.2	0.10-0.40	0.02	—	7.5-8.5	0.20	0.20
AWS A5.7	bal.	0.01	0.10	—	0.10-0.35	0.02	—	7.0-9.0	0.20	0.50

Physical Properties Mechanical Properties:

Solids-Temperature	875℃	Liquids-Temperature	1025℃
Density	8.8kg/dm ³	Tensile Strength	260N/mm ²
Elongation	20%	Brinell-Hardness	80HB



GB/T 9460 CuMn13Al8Fe3Ni2
AWS A5.7 ERCuMnNiAl
EN ISO 24373 CuMn13Al8Fe3Ni2

AK ERCuMnNiAl

TIG/MIG

Application: Best for the overlay welding of iron-casting and low-alloy steel that especially need corrosion resistance.

Typical Chemical Composition(%):

	Cu	Al	Mn	Ni	Fe	Pb	Si	Sn	Zn	Other
ISO 24373	bal.	7.0-8.5	11.0-14.0	1.5-3.0	2.0-4.0	0.02	0.10	—	0.15	0.40
AWS A5.7	bal.	7.0-8.5	11.0-14.0	1.5-3.0	2.0-4.0	0.02	0.10	—	0.15	0.50

Physical Properties Mechanical Properties:

Solids-Temperature	945℃	Liquids-Temperature	985℃
Density	7.4kg/dm ³	Tensile Strength	800-900N/mm ²
Elongation	10%	Brinell-Hardness	180-240HB



GB/T 9460 CuAg1

AWS A5.7 CuAg1

EN ISO 24373 CuAg1

AK ERCuAg1

TIG/MIG

Application: Particularly desired for MIG welding of zinc-coated-steel in auto bodies. It is also recommended for brass, low-alloy copper, non-ferrous and low-metal steel and cast iron. An ideal material for making auto bodies.

Typical Chemical Composition(%):

	Cu	Al	Mn	Ni	Fe	Pb	Si	Ag	As	Other
ISO 24373	≥99.5	0.01	0.20	0.3	0.05	0.01	0.10	0.8-1.2	0.05	0.20
AWS A5.7	≥99.5	0.01	0.20	0.3	0.05	0.01	0.10	0.8-1.2	0.05	0.20

Physical Properties Mechanical Properties:

Solids-Temperature	1070°C	Liquids-Temperature	1080°C
Density	8.9kg/dm ³	Tensile Strength	200N/mm ²
Elongation	30%	Brinell-Hardness	60HB



GB/T 9460 CuAl7

AWS A5.7 ERCuAl-A1

EN ISO 24373 CuAl7

AK ERCuAl-A1

TIG/MIG

Application: Especially suitable for welding carbon steel and stainless steel. The fluidity of the molten metal is good, the weld shape is beautiful, and it is also suitable for butt welding of steel and copper. Applied to shipbuilding and machinery manufacturing, it is recommended to use pulsed argon arc welding when welding multi-layer steel interlayers.

Typical Chemical Composition(%):

	Cu	Al	Mn	Ni	P	Pb	Si	Sn	Zn	Other
ISO 24373	bal.	6.0-8.5	0.5	—	—	0.02	0.20	—	0.20	0.40
AWS A5.7	bal.	6.0-8.5	0.5	—	—	0.02	0.10	—	0.20	0.50

Physical Properties Mechanical Properties:

Solids-Temperature	1030℃	Liquids-Temperature	1040℃
Density	7.7kg/dm ³	Tensile Strength	380-450N/mm ²
Elongation	40-50%	Brinell-Hardness	100HB