


 WASHINGTON ALLOY CO.

ALUMINUM FILLER METALS



"Whenever there is welding to be done in our shop, I know we can count on Washington Alloy for filler materials. They offer a wide variety of well-packaged, quality welding products to help get the job done."

-Autumn Weppner, Kendrick Garage
@autumn_reine  Wrench & Chill



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Aluminum MIG Wire

ER1100 ER4145
 ER2319 ER5183
 ER4043 ER5356
 ER4047 ER5554
 ER4943 ER5556
 A356 ER5654

Available sizes

Diameter	1 LB SP	5 LB SP	15 LB SP
0.023"	X		
0.030"	X	X	X
0.035"	X	X	X
3/64"	X	X	X
1/16"	X	X	X

**Please contact us if you have specific size requirement not listed here*

Aluminum TIG Wire

ER1100 ER5183
 ER2319 ER5356
 ER4043 ER5554
 ER4047 ER5556
 ER4145 ER5654
 ER4643 R357.0
 ER4943 A356
 C355

Available sizes

Diameter	Length
.030"	x 36"
.035"	x 36"
3/64"	x 36"
1/16"	x 36"
3/32"	x 36"
1/8"	x 36"
5/32"	x 36"

**Please contact us if you have specific size requirement not listed here*



**UNDENIABLE
PERFORMANCE****ER1100**

AWS/SFA 5.10 ER1100 | UNS A91100

Washington Alloy 1100 (commonly referred to as Al 99.5) is a 99% aluminum filler metal that is available in spools or cut lengths for MIG or TIG welding processes. Washington Alloy 1100 is commonly used for architectural and decorative applications, furniture, piping, deep drawing applications and spun hollow ware. Common applications would include base metals 1100, 3003, and alc.3003 to similar base metals or to 1060, 1070, 1080 and 1350. Slight golden color after anodizing. Average tensile strength as welded is 13,500 psi.

ER4043

AWS/SFA 5.10 ER4043 | UNS A94043

Washington Alloy 4043 (commonly referred to as AlSi5) is a 5% silicon aluminum filler metal that is available in spools or cut lengths for MIG or TIG processes. This alloy is recommended for welding 3003, 3004, 5052, 6061, 6063 and casting alloys 43, 355, 356 and 214. Washington Alloy 4043 has a melting range of 1065-1170°F and a density of .097 lb /cu. in. The post-anodizing color tint is gray. Tensile strength average is 29,000 psi.

ER4047

AWS/SFA 5.10 ER4047 | AWS A5.8 BAISI-4 | UNS A94047

Washington Alloy 4047 (commonly referred to as "718 aluminum" or AlSi12) is an aluminum filler metal which contains approximately 12% silicon. This alloy is commonly used not only in MIG or TIG applications, but also as a general purpose brazing alloy providing a free-flowing filler metal and good corrosion resistance. Washington Alloy 4047 is recommended for welding or brazing aluminum alloys: 1060, 1350, 3003, 3004, 3005, 5005, 5050, 6053, 6061, 6951 7005 and cast alloys 710.0 and 711.0. Washington Alloy 4047 has an approximate melting range of 1070°-1080°F and the post anodizing color tint is grayish-black.

ER4943

AWS/SFA 5.10 ER4943 | UNS A94943

High-quality Washington Alloy® brand Aluminum / Silicon cut-length TIG filler metal. 1lb. Mini Pack. 4943 is high strength 5.5% silicon aluminum filler metal with increased yield /shear strengths recommended for TIG welding of 1XXX, 3XXX, 4XXX, 5XXX (less than 2.5% Mg), 6XXX, grades and cast alloy such as 443, 355, 356 and 214. Used in many 4043 and 4643 applications yielding elite post weld heat treated requirements. Gives excellent operator appeal with less smut and discoloration

ER5356

AWS/SFA 5.10 ER5356 | UNSA95356

Washington Alloy 5356 (commonly referred to as AlMg5) is a 5% magnesium aluminum filler metal that is available for MIG or TIG welding processes. The weld deposit of Washington Alloy 5356 offers much better corrosion resistance when exposed to salt water. Common applications would be base metals 5050, 5052, 5083, 5356, 5454 and 5456. The post-anodizing color tint is white. Tensile strength average is 38,000 psi.

ER5183

AWS/SFA 5.10 ER5183 | UNS A95183

Washington Alloy 5183 (commonly referred to as AlMg 4.5 Mn) aluminum filler metal contains alloying elements 4.3-5.0% magnesium, 0.5-1.0% manganese as well as chromium and titanium. Available in MIG or TIG processes, this alloy is commonly used on marine components, drilling rigs, cryogenics, railroad cars, storage tanks and unfired pressure vessels. Base metals commonly welded include 5083, 5086 and 5456 to similar base metals or to themselves. The post-anodizing color tint is white. The approximate melting range is 1075°-1180°F and the average tensile strength as welded is 41,000 psi.

ER5556

AWS/SFA5.10 ER5556 | UNS A95556

Washington Alloy 5556 is an aluminum filler metal that contains more manganese and zinc with slightly more magnesium than Washington Alloy 5356. This gives Washington Alloy 5556 good ductility and improved crack resistance. This alloy may be used for MIG or TIG welding processes. Commonly used on base metals 5154, 5254, 5454 and 5456. The approximate melting range is 1065°-1175°F and the post-anodizing color tint will be white. The ultimate tensile strength will be approximately 46,000 psi.



GUIDE TO THE CHOICE OF FILLER METAL FOR GENERAL PURPOSE WELDING

Base Metal	201.0 206.0 224.0	319.0, 333.0, 354.0, 355.0, C355.0	356.0, A356.0 A357.0 413.0, 443.0 A444.0	511.0 512.0 513.0 514.0 535.0	7004, 7005 7039, 710.0 712.0	4009 6070	6005, 6561 6563, 6501 6151, 6201 6351, 6951	5456	5454	5154 5254	5086	5083	5052 5652	5005 5050	3004 Alc 3004	2219	2014 2036	1100 3003 Alc 3003	1060 1070 1080 1350		
1060, 1070, 1080, 1350	ER4145	ER4145	ER4043 TM	ER5356 TM	ER5356 TM	ER4043 TM	ER4043 TM	ER5356 TM	ER4043 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER4043 TM	ER1100 TM	ER4043 TM	ER4145 TM	ER4145 TM	ER1100 TM	ER1188 TM
1100, 3003, Alc 3003	ER4145	ER4145	ER4043 TM	ER5356 TM	ER5356 TM	ER4043 TM	ER4043 TM	ER5356 TM	ER4043 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER4043 TM	ER1100 TM	ER4043 TM	ER4145 TM	ER4145 TM	ER1100 TM	
2014, 2036	ER4145 TM	ER4145 TM	ER4145 TM	ER4043 TM	ER5356 TM	ER4043 TM	ER4145	ER5356 TM	ER4043 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER4043 TM	ER4043 TM	ER4145	ER4145 TM	ER4145 TM	ER1100 TM	
2219	ER2319 TM	ER4145 TM	ER4145 TM	ER4043 TM	ER5356 TM	ER4043 TM	ER4043 TM	ER5356 TM	ER4043 TM	ER4043 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER4043 TM	ER4043 TM	ER2319 TM	ER4145 TM	ER4145 TM	ER1100 TM	
3004, Alc 3004																					
5005, 5050																					
5052, 5652																					
5083																					
5086																					
5154, 5254																					
5454																					
5456																					
6005, 6061, 6063																					
6101, 6151, 6201																					
6351, 6951	ER4145	ER4145 TM	ER4043 TM	ER5356 TM	ER5356 TM	ER4043 TM	ER4043 TM	ER5356 TM	ER4043 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER5356 TM	ER4043 TM	ER1100 TM	ER4043 TM	ER4145 TM	ER4145 TM	ER1100 TM	
6009, 6010, 6070	ER4145	ER4145 TM	ER4043 TM	ER4043	ER4043	ER4043 TM															
7004, 7005, 7039																					
710.0, 712.0																					
511.0, 512.0, 513.0																					
514.0, 535.0																					
356.0, A356.0, 357.0																					
A357.0, 413.0	ER4145	ER4145 TM	ER4043 TM																		
443.0, A444.0																					
319.0, 333.0																					
354.0, 355.0	ER4145 TM	ER4145 TM																			
C355.0																					
201.0, 206.0, 224.0	ER2319 TM																				

NOTES:

1. Service conditions such as immersion in fresh or salt water, exposure to specific chemicals, or a sustained high temperature (over 150 F (66 C)) may limit the choice of filler metals. Filler metals ER5183, ER5356, ER5556, and ER5654 are note recommended for sustained elevated temperature service.
2. Recommendations in this table apply to gas shielded arc welding processes. For oxyfuel gas welding, only ER1188, ER1100, ER4043, ER4047, and ER 4145 filler metals are ordinarily used.
3. Where no filler metal is listed, the base metal combination is not recommended for welding.
 - a) **ER4145** may be used for some applications
 - b) **ER4047** may be used for some applications
 - c) **ER4043** may be used for some applications
 - d) **ER5183, ER5356, or ER 5556** may be used
 - e) **ER2319** may be used for some applications. It can supply high strength when the weldment is postweld solution heat treated and aged.
 - f) **ER5183, ER5356, ER5554, ER5556** may be used. In some cases, they provide: (1) improved color match after anodizing treatment. (2) highest weld ductility and (3) higher weld strength. ER5554 is suitable for sustained elevated temperature service.
 - g) **ER4643** will provide high strength in 1/2" (12mm) and thicker groove welds in 6XXX base alloys when postweld solution heat treated and aged.
 - h) Filler metal with the same analysis as the base metal is sometimes used. The following wrought filler metals process the same chemical composition limits as cast filler alloys: **ER4009**, and **R4009** as **R-C355.0**, **ER4010** and **R4010** as **R-A 356.0**, and **R4011** as **R-A357.0**
 - i) Base metals alloys **5254** and **5652** are used for hydrogen peroxide service. **ER5654** filler metal is used for welding both alloys for service temperature below 150 F (66 C).
 - j) ER1100 may be used for some applications.

OTHER AVAILABLE FILLER METALS

Washington Alloy 2319	AWS/SFA 5.10 ER2319
Washington Alloy 5554	AWS/SFA 5.10 ER5554
Washington Alloy 5654	AWS/SFA 5.10 ER5654
Washington Alloy 4145 (716)	AWS/SFA 5.10 ER4145(716)
Washington Alloy 4643	AWS/SFA 5.10 ER4643
Washington Alloy A356.0	AWS/SFA 5.10 R-A356.0
Washington Alloy A357.0	AWS/SFA 5.10 R-A357.0
Washington Alloy C355.0	AWS/SFA 5.10 R-C355.0

AVAILABLE PACKAGING AND DIAMETERS

- 1 lb. spools:** .023", .030", .035", .040", 3/64", 1/16"
- 5 lb. spools:** .023", .030", .035", .040", 3/64", 1/16"
- 15 or 16 lb. spools:** .023", .030", .035", .040", 3/64", 1/16", 3/32"
- 36 in. rods:** .023", .030", .035", .040", 3/64", 1/16", 3/32", 1/8", 5/32", 3/16", 1/4"