

Midalley



ALUMINUM SPECIFICATIONS

IMPORTANT REMINDER

The data contained in this bulletin are intended for general information only, and not for specification purposes.

Applications suggested for these alloys are made to permit you to make your own evaluation and decision, and are not to be construed as either express or implied warranties of fitness for these or other applications.

All analyses should be considered as typical or average values, and are minimum or maximum only where indicated. They are not intended for specification purposes.

Midalloy ALUMINUM BARE WIRE SPECIFICATIONS

Midalloy Aluminum Alloy Welding Wires are **manufactured to an expert standard** of care. These wires meet all international codes including AWS (A5.10), TUV,* DIN (1732) and ABS. An advanced technology produces **super clean wires** free of any surface impurities to ensure sound welds with **no porosity**. Spooled wires are level layer wound with **consistent cast and helix** and **higher temper** than industry norm to give **superior feedability**. Cut lengths are **stamped with grade and heat number**. **Stocked alloys are 4043, 5356, and 5556 with alternate grades available by request**. The stocked product size range is .030" to 5/32" diameters.

*(Exception 5556)

FILLER METAL CHOICES FOR GENERAL PURPOSE WELDING

Grades in red are stocked Midalloy Product

BASE* METAL	201 206 224	319,333 354,355 C355	356,A356 357,A357 413,443 A444	511,512 513,514 535	7004 7005 7039 710,712	6009 6010 6070	6005 6061 6063 6101 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	ER5356	ER5356	ER4043	ER4043	ER5356	ER4043	ER5356	ER5356	ER5356	ER4043	ER1100	ER4043	ER4145	ER4145	ER1100	ER1188
1100,3003 Al 3003	ER4145	ER4145	ER4043	ER5356	ER5356	ER4043	ER4043	ER5356	ER4043	ER5356	ER5356	ER5356	ER4043	ER1100	ER4043	ER4145	ER4145	ER1100	
2014,2036	ER4145	ER4145	ER4145	—	—	ER4145	ER4145	—	—	—	—	—	—	ER4145	ER4145	ER4145	ER4145		
2219	ER2319	ER4145	ER4145	ER4043	ER4043	ER4043	ER4043	—	ER4043	ER4043	—	—	ER4043	ER4043	ER4043	ER2319			
3004 Al 3004	—	ER4043	ER4043	ER5356	ER5356	ER4043	ER4043	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356				
5005 5050	—	ER4043	ER4043	ER5356	ER5356	ER4043	ER4043	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356				
5052 5652	—	ER4043	ER4043	ER5356	ER5356	ER4043	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356	ER5356				ER5654
5083	—	—	ER5356	ER5356	ER5183	—	ER5356	ER5183	ER5356	ER5356	ER5356	ER5183							
5086	—	—	ER5356	ER5356	ER5356	—	ER5356	ER5356	ER5356	ER5356	ER5356								
5154 5254	—	—	ER4043	ER5356	ER5356	—	ER5356	ER5356	ER5356	ER5356									
5454	—	ER4043	ER4043	ER5356	ER5356	ER4043	ER5356	ER5356	ER5356	ER5356									
5456	—	—	ER5356	ER5356	ER5556	—	ER5356	ER5556											
6005,6061 6063,6101 6151,6201 6351,6951	ER4145	ER4145	ER4043	ER5356	ER5356	ER4043	ER4043												
6009,6010 6070	ER4145	ER4145	ER4043	ER4043	ER4043	ER4043													
7004,7005 7039,710 712	—	ER4043	ER4043	ER5356	ER5356														
511,512 513,514 535	—	—	ER4043	ER5356															
356,A356 357,A357 413,443,A444	ER4145	ER4145	ER4043																
319,333 354,355 C355	ER4145	ER4145																	
201,206 224	ER2319																		

SHIELDING GAS SELECTION

GAS TUNGSTEN-ARC (TIG)

BASE THICKNESS	SHIELDING GAS	
	MANUAL	MECHANIZED
Less than 1"	Ar ¹	Ar ¹ , He ²
Greater than 1"	Ar ¹	75He + 25Ar ¹ , He ²
	1= High Frequency AC 2= Straight polarity DC	

GAS METAL ARC (MIG)

BASE THICKNESS	SHIELDING GAS	
	SPRAY TRANSFER	SHORT CIRCUIT
Less than 1"	Ar	Ar
From 1" to 3"	Ar + 35 to 65He	*
Greater than 3"	75He + 25Ar	*
	* = Not Recommended	

RANGE OF GMA (MIG) WELDING PARAMETERS (WITH Ar)

DIAMETER	VOLTS	AMPS	WIRE FEED (IPM)
.030"	22-28	90-205	465-685
.035"	22-28	115-225	345-480
3/64"	22-28	135-295	230-380
1/16"	24-30	165-365	175-305

MIDALLOY 4043 • 5356 • 5556

ALLOY SYMBOL			CHEMICAL COMPOSITION IN WEIGHT PERCENT ^{a,b}														
AWS (A5.10) Classification	ISO 18273 Numerical	ISO 18273 Chemical	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ga, V	Ti	Zr	Al _{min.}	Be	Other Each	Other Total	
ER4043, R4043	Al 4043	AlSi5	4.5-6.0	0.8	0.30	0.05	0.05	—	0.10	—	0.20	—	Rem	0.0003	0.05	0.15	
ER5356, R5356	Al 5356	AlMg5Cr(A)	0.25	0.40	0.10	0.05-0.20	4.5-5.5	0.05-0.20	0.10	—	0.06-0.20	—	Rem	0.0003	0.05	0.15	
ER5556, R5556	Al 5556	AlMg5Mn1Ti	0.25	0.40	0.10	0.50-1.0	4.7-5.5	0.05-0.20	0.25	—	0.05-0.20	—	Rem	0.0003	0.05	0.15	

a Single values shown in the table are maximum values, except for Al.

b The results shall be rounded to the same number of significant figures as in the specified value using the rules in accordance with ISO 80000-1 or ASTM E29.

* Chart reproduced from AWS A5.10/A5.10M:2017

STANDARD PACKAGE:

- MIG – 4" diameter level wound 1 lb. spool, 20 spools per carton
12" diameter level wound 15 lb. spool, 1 per carton
- TIG – 5 lb. tube, in 15 lb. or 30 lb. carton

* Chart reproduced from AWS A5.10/A5.10M:2017

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