

◆ INTRODUCTION

Aufhauser Aluminum 4043 is one of the oldest and most widely used welding and brazing alloys. AL4043 can be classed as a general purpose-type filler alloy. The silicon additions result in improved fluidity (wetting action) to make the alloy a preferred choice by welders. The alloy is less sensitive to weld cracking and produces brighter, almost smut free welds.

◆ APPLICATIONS

- Welding filler wire
- Spray and flame metallizing wire

◆ GENERAL INFORMATION

- Non-Heat treatable
- Principle alloying elements: Silicon
- ISO designation: AlSi5

◆ CHEMICAL COMPOSITION

<u>Silicon</u>	<u>Iron</u>	<u>Copper</u>	<u>Beryllium</u>	<u>Manganese</u>	<u>Magnesium</u>	<u>Zinc</u>	<u>Titanium</u>	<u>Others</u>		<u>Aluminum</u>
								<u>Each</u>	<u>Total</u>	<u>Remainder</u>
4.5-6.0	0.8	0.30	0.0003	0.05	0.05	0.10	0.20	0.05	0.15	

Note: All values are maximum percentage, unless shown in range.

◆ PHYSICAL PROPERTIES

Melting Range:	1065-1170°F
Density, at 68°F:	0.097 lb/in ³
Conductivity:	42% IACS (-O)
Resistance to Corrosion:	B (Gen) A (SCC)
Anodize Color:	Gray



◆ SPECIFICATIONS MEET or EXCEED

- ANSI/AWS A5.10 (ER & R 4043)
- AMS 4190

◆ STANDARD SIZES AND DIAMETERS

<u>Diameters</u>	<u>Package Form</u>
.030, .035, 3/64, 1/16, 3/32, 1/8	4 & 12 in. Spools
1/16, 3/32, 1/8, 5/32, 3/16, 1/4	Straight lengths

◆ TYPICAL MECHANICAL PROPERTIES OF GTAW GROOVE JOINT WELDS

<u>BASE ALLOY</u>	<u>BASE ALLOY</u>			<u>AS WELDED</u>			<u>POST WELD HEAT TREAT AND AGE¹</u>		
	<u>UTS (KSI)</u>	<u>UYS (KSI)</u>	<u>ELONG (%)</u>	<u>UTS (KSI)</u>	<u>UYS (KSI)</u>	<u>ELONG (%)</u>	<u>UTS (KSI)</u>	<u>UYS (KSI)</u>	<u>ELONG (%)</u>
2014-T6	70	60	13	34	28	4	50	-	2
6061-T4	35	21	22	27	18	8	35 ²	-	8 ²
6061-T6	45	40	12	27	18	8	44	40	5
6063-T4	25	22	22	20	10	12	30	-	13

1) Requires sufficient dilution of base metal into weld pool for heat treat and/or age response. Refer to alloy 4643 data sheet for additional information.

(2) postweld aged only.



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Aluminum 4043

◆ TYPICAL GMAW PARAMETERS

Wire diameter	Range		Base material thickness	Suggested		Wire feed	Gas flow	Consumption 100 ft of weld
	Inches	Amps		Volts	Amps			
0.030	60-170	13-24	0.062	90	22	260	25	1.5
			0.094	110	23	320		1.8
			0.125	130	23	380		2
			0.187	150	24	430		4
			0.250	175	24	510		6
0.035	70-180	15-26	0.062	90	23	250	35	1.5
			0.125	130	24	360		2
			0.250	170	25	470		6
0.047	140-260	20-29	0.094	110	25	215	45	1.8
			0.125	150	26	290		2
			0.250	190	26	370		6
			0.375	220	27	430		16
0.062	190-350	25-30	0.250	200	26	190	55	6
			0.375	230	27	215		16
			0.500	260	28	240		30
			0.750	280	29	261		50
			1.000	300	30	280		105
0.094	280-400	26-31	0.500	280	28	170	65	30
			0.750	290	29	175		50
			>1.000	300	30	180		150+

NOTE: Parameters based on flat position, groove joint, backing strip, and 100% argon gas.