



**T H E H A R R I S P R O D U C T S G R O U P**  
**A L I N C O L N E L E C T R I C C O M P A N Y**  
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## TECHNICAL INFORMATION SHEET

### 4043 ALUMINUM WELDING WIRE & ROD

#### DESCRIPTION:

4043 is an aluminum/silicon filler metal designed for welding heat treatable base metals and is a common choice for welding 6061. 4043 offers good fluidity and less crack sensitivity than 5356 when welding 6000 series base metals. It is often used to for repair welding aluminum/silicon cast alloys such as grades 353/A356.

#### NOMINAL COMPOSITION:

Aluminum	BALANCE	Titanium	0.20 % max.
Magnesium	0.05 % max.	Copper	0.30 % max.
Manganese	0.05 % max.	Silicon	4.5-6.0 %
Beryllium	0.0008 % max.	Zinc	0.10 % max.
Others	Each 0.05% max.	Iron	0.80% max.
Total	0.15 % max.		

#### PHYSICAL/MECHANICAL PROPERTIES:

Solidus	1065 °F (574 °C)	Density lbs/cu in	0.097
Liquidus	1170 °F (632 °C)	Post Anodize Color	Gray

#### *As Welded 6061 Base Plate*

Tensile Strength	27,000 psi
Yield Strength	18,000 psi
Elongation in 2"	8%

#### SPECIFICATION COMPLIANCE:

ANSI/AWS A5.10 Class R/ER 4043, ASME SFA 5.10, QQ-R-566B, AMS 4190 (Chemistry Only)

#### RECOMMENDED WELDING PARAMETERS:

##### \* GMAW (MIG)

(DC Reverse Polarity)

Electrode Positive Spray transfer

Metal Thickness	Wire Diameter	Amps	Volts	Argon
1/16"	.030	70-110	15-20	25
1/8"	.030-3/64	120-150	20-24	30
3/16"	.030-3/64	130-210	22-26	30-35
1/4"	3/64-1/16	170-225	24-28	40
	1/16	225-300	26-29	50

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**\*GTAW (TIG)**

AC) hemisphere tip  
shape tungsten  
electrode

Thickness	Pure or zirconiated Tungsten	<u>Filler Wire</u> <u>Size</u>	Amps	Volts ACHF	Gas Cup	Argon (cfh)
1/16"	1/16"- 3/32"	1/16"-3/32"	70-100	15	3/8	20
1/8"	1/8"-5/32"	1/8"-5/32"	125-175	15	7/16	20
3/16"	5/32"-3/16"	5/32-3/16"	170-225	15	7/16-1/2	25
1/4	3/16"-1/4"	3/16"	220-275	15	1/2	30
3/8"	1/4"	3/16"-1/4"	330-380	15	5/8	35
1/2"	1/4"	1/4"	400-450	25	5/8	35

\* All parameters are suggested as basic guidelines and will vary depending on joint design, number of passes and other factors.

WARNING: PROTECT yourself and others. Read and understand this information.

FUMES AND GASES can be hazardous to your health.

ARC RAYS can injure eyes and burn skin.

ELECTRIC SHOCK can KILL.

- Before use, read and understand the manufacturer's instructions, Material Safety Data Sheets (MSDSs), and your employer's safety practices.
- Keep your head out of fumes.
- Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
- Wear correct eye, ear, and body protection.
- Do not touch live electrical parts.
- See American National Standard Z49.1, *Safety in Welding, Cutting, and Allied Processes*, published by the American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126; OSHA Safety and Health Standards, available from the U.S. Government Office, Washington, DC 20402

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