# Aluminum 4047

Aufhauser
Corporation
39 West Mall
Plainview, NY 11803
Telephone:
516-694-8696
800-645-9486
Fax:
516-694-8690

## ♦ INTRODUCTION

Aluminum 4047 was originally developed as a brazing alloy (BAlSi-4 or 718) to take advantage of its low melting point and narrow freezing range. In addition, it has a higher silicon content than AL4043, which provides for increased fluidity and reduced shrinkage. The alloy produces bright and almost smut free welds. Hot cracking is significantly reduced when AL4047 is used as a filler alloy. The alloy may be used in applications of sustained elevated temperatures.

## ♦ APPLICATIONS

- Welding filler wire

## ♦ GENERAL INFORMATION

- Non-Heat treatable
- Principle alloying elements: Silicon
- ISO designation: AlSi2

## ♦ CHEMICAL COMPOSITION

| | | | | | | | Others | | |
|---|---|---|---|---|---|---|---|---|---|
| Silicon | Iron | Copper | Beryllium | Manganese | Magnesium | Zinc | Each | Total | Aluminum |
| 11.0-13.0 | 0.8 | 0.30 | 0.0008 | 0.15 | 0.10 | 0.20 | 0.05 | 0.15 | Remainder |

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

## ♦ PHYSICAL PROPERTIES

| | |
|---|---|
| Melting Range: | 1070-1080°F |
| Density, at 68°F: | 0.096 lb/in$^3$ |
| Conductivity: | 41% IACS (-O) |
| Resistance to Corrosion: | B (Gen) A (SCC) |
| Anodize Color: | Gray-Black |

## ♦ SPECIFICATIONS MEET or EXCEED

- ANSI/AWS A5.10 (ER & R 4047)
- AMS 4185

## ♦ STANDARD SIZES AND DIAMETERS

| Diameters | Package Form |
|---|---|
| .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

| | BASE ALLOY | | | AS WELDED | | | POST WELD HEAT TREAT AND AGE[1] | | |
|---|---|---|---|---|---|---|---|---|---|
| BASE ALLOY | UTS (KSI) | UYS (KSI) | ELONG (%) | UTS (KSI) | UYS (KSI) | ELONG (%) | UTS (KSI) | UYS (KSI) | ELONG (%) |
| 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.

Aufhauser
Corporation
39 West Mall
Plainview, NY 11803
Telephone:
516-694-8696
800-645-9486
Fax:
516-694-8690

# Aluminum 4047

## ♦ TYPICAL GMAW PARAMETERS

| Wire diameter | Range | | Base material thickness | Suggested | | Wire feed | Gas flow | Consumption 100 ft of weld |
|---|---|---|---|---|---|---|---|---|
| Inches | Amps | Volts | Inches | Amps | Volts | Ipm | Cfh | pounds |
| 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.