



5656 S. Pennsylvania Avenue  
Cudahy, WI 53110  
Telephone: (414) 769-6000  
FAX: (414) 769-1093  
www.lucasmilhaupt.com



## Handy-One® Flux Cored Aluminum AL 718, 802 and 815

This proprietary new family of brazing & soldering products eliminates the need for a separate fluxing operation, which can result in a significant increase in productivity while minimizing flux exposure to your personnel and plant equipment.

### The Product

Handy One is a registered trademark for a family of flux-cored brazing/soldering materials that offers numerous advantages compared to traditional metal joining methods. It consists of a filler metal in strip form that is rolled around a powdered flux. Formulations currently exist for aluminum (and silver based) brazing and soldering filler metals and it is available on spools or coils for wire feed applications or as preformed rings and shapes for automated production lines.

Some of the primary advantages of Handy One cored wire include:

- It simplifies the brazing process by eliminating the manual fluxing operation; this also reduces flux exposure to your brazing personnel.
- Joint quality and throughput can be improved due to the consistent application of flux and filler metal.
- An environmentally friendly, non-corrosive fluxing system
- Formulations exist for torch, induction or atmospheric furnace

These materials will join 1100, 3000 and 6000 series Aluminum with torch, induction or atmospheric furnaces. While typically cored with Nocolok flux, the addition of Cesium is recommended for improved wetting on 6000 series aluminum alloys. These materials are also available with additional brazing alloy in the form of a fine diameter wire inside the core. This reduces the percentage of flux and increases the volume of alloy, which can be advantageous in some furnace brazing applications.

### Nominal Flux Percentage Chart

L-M Alloy Code	Core Constituents	Typical Application	Flux Percentage by Wire Diameter						
			1.2mm 0.047"	1.6mm 0.06"	2.0 mm 0.078"	2.2mm 0.087"	2.4mm 0.094"	2.6mm 0.1"	3.1mm 0.122"
Al 718	Nocolok flux	Torch & Induction	24%	24%	27%	38%	38%		
Al 718	Nocolok flux & wire	Furnace		15%	20%	25%	25%		30%
Al 718	Double Alloy wrap & Nocolok	Furnace - low flux		8%	13%				
Al 718	Nocolok with 3% Cesium	For 6000 series Al		27%	27%	38%	40%		
Al 718	Nocolok with Cesium & wire	6000 series in Furnace		23%	20%	28%	30%		
Al 718	Nocolok flux & wire	Torch or Furnace					20%	30%	
Al 802	Nocolok with Cesium	Solder for Repair		18%	18%				
Al 802	Nocolok with Cesium & wire	Solder for Repair			11%				
Al 815	Nocolok with Cesium & wire	Higher strength Solder			13%				

## ***TYPICAL FLUX-CORED FILLER METALS USED FOR JOINING ALUMINUM & AL-BASED ALLOYS***

---

<b><u>Filler Metal:</u></b>	<u>Al 718</u>	<u>Al 802</u>	<u>Al 815</u>
Aluminum	88.0%	2.0%	15.0%
Silicon	12.0%	-	-
Zinc	-	98.0%	85.0%
All Others	.15% total	.15% total	.15% total

## ***FILLER METAL PROPERTIES***

---

	<u>Al 718</u>	<u>Al 802</u>	<u>Al 815</u>
Solidus Temperature	1070°F (576°C)	710°F (377°C)	718°F (380°C)
Liquidus Temperature	1080°F (582°C)	725°F (385°C)	845°F (452°C)
Brazing/Soldering Range	1080 - 1120°F	740 - 755°F	850 - 875°F
Specific Gravity	2.66	6.91	5.72
Density	.096 lb/cu.in.	.25 lb/cu.in.	.21 lb/cu.in.

## ***BRAZING & SOLDERING CHARACTERISTICS***

---

AL 718 is a general purpose free flowing brazing filler metal for use with all brazeable aluminums, in all types of brazing processes.

AL 802 and AL 815 are general-purpose free flowing filler metals for use with all solderable aluminum and aluminum alloys when soldering with torch.

## ***PROPERTIES OF BRAZE & SOLDER JOINTS***

---

Joints made with Al 718 can be as strong as the base metal if designed and processed properly. Factors such as joint length and thickness, fluxing, heat treatment, amount of filler metal, cleanliness, and heating all have an impact on the final joint strength.

Zinc base solders (Al 802 & Al 815) develop the highest strengths of all commercial solders, exhibiting shear strength of 18,000 psi. and more. Factors such as joint length, joint clearance, fluxing, amount of filler metal, cleanliness and heating all have an impact on the final joint strength. The zinc base solders are most corrosion resistant, the greater the quantity of zinc in the solder the greater its corrosion resistance.

## ***USES***

---

AL 718 filler metal is generally used to join aluminum and aluminum alloys. It offers excellent corrosion resistance when joining aluminum base metals.

AL 802 and AL 815 solder filler metals are also generally used to join aluminum and aluminum alloys.

## ***AVAILABLE FORMS***

---

Wire (.047" diameter to .125"), Rod form (20" lengths of .062" to .125") and preformed rings and shapes

## ***SPECIFICATIONS***

---

AL 718 meets the requirements for the following specifications:

- Aluminum Association (AA) 4047
- American Welding Society (AWS) A5.8 BAISi-4
- Aerospace Material Specification (AMS) 4185
-

***WARRANTY CLAUSE***

---

Lucas-Milhaupt, Inc. believes the information contained herein to be reliable. However, the technical information is given by Lucas-Milhaupt, Inc. without charge and the user shall employ such information at its own discretion and risk. Lucas-Milhaupt, Inc. assumes no responsibility for results obtained or damaged incurred from the use of such information in whole or in part.