Technical Data Sheet

HANDY ONE® AL 718

This proprietary family of Handy One 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.

NOMINAL COMPOSITION

Aluminum	Remainder
Silicon	12.0% ± 1.0%
Copper	0.30% Max
Iron	0.80% Max
Magnesium	0.10% Max
Manganese	0.15% Max
Zinc	0.20% Max
Other Elements (Each)	0.05% Max
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Grayish-White
Melting Point (Solidus)	1070°F (577°C)
Flow Point (Liquidus)	1080°F (582°C)
Brazing/Soldering Range	1080°F - 1120°F (582°C - 604°C)
Specific Gravity	2.66
Density (Lbs/in^3)	0.096 (solid wire)
Electrical Conductivity (%IACS) [(1)]	N/A
Electrical Resistivity (Microhm-cm)	N/A

[(1)] IACS = International Annealed Copper Standard

PRODUCT USES

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 of aluminum with torch, induction or atmospheric furnaces. While typically cored with our proprietary KX flux, our CX alternatives can be used when more tenacious oxide base materials like 6000 series are difficult to reduce.

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PRODUCT USES (CONT.)

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.

BRAZING / SOLDERING CHARACTERISTICS

AL 718 is a general purpose brazing filler metal that provides excellent joint integrity and corrosion resistance when joining aluminum and aluminum alloys. When joining dissimilar metals thought should be given to the galvanic potential between the metals to avoid potential galvanic corrosion problems. To maintain joint integrity on heat treatable aluminum alloys, the solution temperature must be below the solidus of the filler metal.

PROPERTIES OF BRAZE JOINTS

The properties of a brazed joint are dependent upon numerous factors including base metal properties, joint design, metallurgical interaction between the base metal and the filler metal. Joint clearances of 0.003 – 0.005 in. (0.076-0.127 mm) per side are optimum for achieving highest joint strength. Joints with increased clearances can still produce adequate joint strengths depending on final operating conditions.

AVAILABLE FORMS

Round wire, oval wire, triangular wire, rod, engineered rings, and other specialty preforms per customer specification.

SPECIFICATIONS

AL 718 alloy conforms to the following specifications:

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

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 30-718, 30-719, 30-722, 30-724, 30-728.

SAFETY INFORMATION

The operation and maintenance of brazing equipment or facility should conform to the provisions of American National Standard (ANSI) Z49.1, "Safety in Welding and Cutting". For more complete information refer to the Material Safety Data Sheet for Handy One Al 718.

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