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AL 4147 (BAlSi-9)

TECHNICAL DATA

NOMINAL COMPOSITION	**Aluminum**	Balance
	Silicon	12.0% ± 1.0
	Magnesium	0.3% ± 0.2
	Copper	0.25% Max
	Iron	0.8% Max
	Manganese	0.1% Max
	Zinc	0.2% Max
	Other Elements, Each	0.05% Max
	Other Elements, Total	0.15% Max
PHYSICAL PROPERTIES	**Color**	Grayish-White
	Solidus	1044°F (562°C)
	Liquidus	1080°F (582°C)
	Recommended Brazing Temperature	1080-1180°F (582-638°C)
	Density (Lbs/in^3)	0.096
	Specific Gravity	2.66
	Electrical Conductivity (%IACS)	N/A
	Electrical Resistivity (Microhm-cm)	N/A

USES

AL 4147 is a general-purpose filler metal for joining aluminum and aluminum alloys. Solution temperature during heat treating must be below the solidus of the braze alloy in order to ensure integrity of the joint is maintained.

BRAZING CHARACTERISTICS

AL 4147 has a wider melt range than that of 718, therefore assemblies should be heated quickly through the melt range in order to prevent liquation. The increased silicon content compared to other aluminum filler metals provides increased fluidity as well as reduced shrinkage. The use of AL 4147 also significantly reduces hot cracking during the brazing process.

PROPERTIES OF BRAZED 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” (0.076-0.127 mm) per side ideal for achieving the highest joint strength in aluminum brazed assemblies.

SPECIFICATIONS

AL 4147 alloy conforms to: Unified Numbering System (UNS) A94147, American Welding Society (AWS) A5.8/A5.8M BAlSi-9 and Aluminum Association 4147

AVAILABLE FORMS

Wire, strip, engineered preforms, specialty preforms per customer specification, powder and paste.

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.”

Individuals requiring further information and Engineering Specification Documents may wish to contact the Engineering Society for Advanced Mobility, Land Sea Air and Space, The Society of Automotive Engineers http://www.sae.org/ (SAE AMS) or The American Welding Society (AWS) http://aws.org/

NOTE:

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