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AL 103 (BAISi-5) TECHNICAL DATA

NOMINAL COMPOSITION	Aluminum	Balance
	Silicon	10.0% ± 1.0
	Copper	0.3% Max
	Iron	0.8% Max
	Magnesium	0.05% Max
	Manganese	0.05% Max
	Zinc	0.1% Max
	Other Elements, Each	0.05% Max
	Other Elements, Total	0.15% Max
PHYSICAL PROPERTIES	Color	Grayish-White
	Solidus	1065°F (574°C)
	Liquidus	1110°F (599°C)
	Recommended Brazing Temperature	1110-1120°F (585-604°C)
	Density (Lbs/in ³)	0.097
	CTE, at 20-100°C (µm/(m•°C))	21.1
	Thermal Conductivity (W/(m•K))	171
	Electrical Conductivity (%IACS)	45
Electrical Resistivity (ohm-cm x 10 ⁻⁶)	3.82	
USES	AL 103 is a general purpose filler metal for joining aluminum and aluminum alloys. The 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 103 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.	
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 103 alloy conforms to: Unified Numbering System (UNS) A94045, American Welding Society (AWS) A5.8/A5.8M BAISi-5, Aluminum Association 7075 and Aerospace Material Specification (AMS) 4045	
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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