

## Prince & Izant Company

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## AL 718CR (FLUX-LOADED COMPOSITE ROD)

### TECHNICAL DATA

<b>NOMINAL COMPOSITION</b>	<b>Aluminum</b>	Balance
	<b>Silicon</b>	12.0% ± 1.0
	<b>Copper</b>	0.3% Max
	<b>Iron</b>	0.8% Max
	<b>Magnesium</b>	0.1% Max
	<b>Manganese</b>	0.15% Max
	<b>Zinc</b>	0.2% Max
	<b>Other Elements, Each</b>	0.05% Max
	<b>Other Elements, Total</b>	0.15% Max
<b>PHYSICAL PROPERTIES</b>	<b>Color</b>	Metallic aluminum
	<b>Solidus</b>	1070°F (577°C)
	<b>Liquidus</b>	1080°F (582°C)
	<b>Recommended Brazing Temperature</b>	1080-1120°F (582-604°C)
	<b>Density (Lbs/in<sup>3</sup>)</b>	0.096
	<b>Specific Gravity</b>	2.66
	<b>Tensile Strength (MPa)</b>	140
	<b>Elongation (%)</b>	20
	<b>Electrical Conductivity (%IACS)</b>	N/A
<b>Electrical Resistivity (Microhm-cm)</b>	N/A	
<b>USES</b>	<p>AL 718CR is a composite rod consisting of a homogenous mixture of aluminum and non-corrosive flux at a metal load of 86%. It is typically used for torch and induction brazing of 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.</p> <p>Typical applications include: heat exchangers, radiators, aluminum connectors, automotive assemblies, and air conditioning and refrigeration systems. AL 718CR can also be used for joining aluminum to copper.</p>	
	<b>BRAZING CHARACTERISTICS</b>	<p>AL 718CR has a low melting point and narrow melt range which makes it suitable for brazing aluminum alloys without the need to apply any additional flux. The high cesium content of the flux component is more aggressive than other non-corrosive fluxes, improving the fluidity of the alloy under capillary conditions. Given the non-corrosive nature of this flux no cleaning is required post-brazing. In addition, the increased silicon content compared to other aluminum filler metals provides increased fluidity as well as reduced shrinkage. The use of AL 718 also significantly reduces hot cracking during the brazing process.</p>
<b>PROPERTIES OF BRAZED JOINTS</b>	<p>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 are ideal for achieving the highest joint strength in aluminum brazed assemblies.</p>	

**SPECIFICATIONS**

AL 718CR alloy conforms to: Unified Numbering System (UNS) A94047, American Welding Society (AWS) A5.8/A5.8M BAlSi-4, Aluminum Association 4047, Aerospace Material Specification (AMS) 4185, German Institute for Standardization (DIN 8513) L-Al Si 12, and European Standard (EN ISO 3677) B- Al88Si-550-585.

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**AVAILABLE FORMS**

Rod, engineered preforms, and specialty preforms per customer specification.

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**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."

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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:****DISCLAIMER**

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