

## Bellman-Melcor

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## #50 (BAg-1a)

### TECHNICAL DATA

<b>NOMINAL COMPOSITION</b>	<b>Silver</b>	50.0% ± 1.0
	<b>Copper</b>	15.5% ± 1.0
	<b>Zinc</b>	16.5% ± 2.0
	<b>Cadmium</b>	18.0% ± 1.0
	<b>Other Elements, Total</b>	0.15% Max
<b>PHYSICAL PROPERTIES</b>	<b>Color</b>	Light Yellow
	<b>Solidus</b>	1160°F (626°C)
	<b>Liquidus</b>	1175°F (635°C)
	<b>Recommended Brazing Temperature</b>	1225-1275°F (662-690°C)
	<b>Density (Troy oz/in<sup>3</sup>)</b>	4.98
	<b>Specific Gravity</b>	9.45
	<b>Electrical Conductivity (%IACS)</b>	23.9
	<b>Electrical Resistivity (Microhm-cm)</b>	7.0
<b>USES</b>	<p>#50 is a general purpose braze filler metal. The alloy can be used successfully on nearly all nickel, iron and copper based alloys. In certain instances, special fluxes may be required to obtain good wetting and bonding. In brazing gray cast iron, it is necessary to treat the surface prior to brazing to remove the graphite. This will ensure good wetting by the brazing filler metal.</p>	
	<p>#50 is a eutectic type, free-flowing filler metal that, because of its narrow melting range, is less sensitive to the rate of heating and should not liquate (separate into low and high melting constituents). This high fluidity makes well-fitted joints essential and prevents 'bridging' or large fillet formation. Some base metals when brazed under high stress may crack during brazing when the stressed base metal is wetted by the brazing filler metal. This is a form of stress corrosion cracking. The low flow temperature of #50 is below the stress relaxation temperature of some nickel-based alloys. The cure is to relieve the stress before the brazing ally is applied. A higher melting brazing filler metal may be preferred since stress relief will then occur before the filler metal melts,</p>	
<b>BRAZING CHARACTERISTICS</b>		
<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.</p>	
<b>SPECIFICATIONS</b>	<p>#50 conforms to: Unified Numbering System (UNS) P07500, American Welding Society (AWS) A5.8/A5.8M BAg-1a, and Society of Automotive Engineers (SAE)/AMS 4770, QQ-B-654 Grade IV, MIL-B-15345 Grade IV</p>	
<b>AVAILABLE FORMS</b>	<p>Wire, strip, engineered preforms, specialty preforms per customer specification, powder and paste.</p>	
<b>SAFETY INFORMATION</b>	<p>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."</p>	

**WARNING**

Contains cadmium – poisonous fumes may be formed when heated.

Do not breathe fumes. Use only with adequate ventilation such as fume collectors, exhaust ventilators, or air supplied respirators. See American National Standard Z49.1. If chest pain, cough or fever develops after use, call a physician immediately! Keep children away when using!

Bellman-Melcor (A Prince & Izant Company) recommends using **cadmium-free** alloys for brazing applications. If you are presently using cadmium bearing alloy and need assistance in identifying a suitable cadmium free substitute, please contact your sales representative.

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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