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SILVER ALLOY 45 (BAg-1)

TECHNICAL DATA

NOMINAL COMPOSITION	**Silver**	45.0% ± 1.0
	Copper	15.0% ± 1.0
	Zinc	16.0% ± 2.0
	Cadmium	24.0% ± 1.0
	Other Elements, Total	0.15% Max
PHYSICAL PROPERTIES	**Color**	Light Yellow
	Solidus	1125°F (607°C)
	Liquidus	1145°F (618°C)
	Recommended Brazing Temperature	1195-1245°F (646-673°C)
	Density (Troy oz/in^3)	4.96
	Specific Gravity	9.42
	Electrical Conductivity (%IACS)	27.6
	Electrical Resistivity (Microhm-cm)	6.06

USES

Silver Alloy 45 is a general purpose brazing 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 graphite, in order to assure good wetting by the brazing filler metal.

BRAZING CHARACTERISTICS

Silver Alloy 45 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). The 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 the brazing process when the stressed base metal is wetted by the brazing filler metal. This is a form of stress corrosion cracking. The solution is to relieve the stress before the brazing alloy is applied. A higher melting brazing filler metal may be preferred since stress relief will then occur before the filler metals.

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.

SPECIFICATIONS

Silver Alloy 45 conforms to: Unified Numbering System (UNS) P07450, American Welding Society (AWS) A5.8/A5.8M BAg-1, and Society of Automotive Engineers (SAE)/AMS 4769

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.”

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!

The 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 Prince & Izant Company 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:

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