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### Item # Brazelt 50, Cadmium Bearing Brazing Alloys

Primarily used for the joining of tungsten carbide to steel, this alloy also offers good wetting characteristics on stainless steel, tool steels and nickel alloys. the 3% nickel content provides good corrosion resistance. Brazeit 50 is one of the lower melting brazing alloys composed of silver, copper, zinc and cadmium. It is suitable for use on most metals except aluminum and magnesium. It is used for joining steel, stainless steel, copper, copper alloys, nickel, nickel alloys or combinations of these metals. It has wide acceptance by industrial users, as well as being included in Federal and military specifications on brazing alloys. It has a narrow melting range which is not apparent in most brazing operations, making it flow freely through a capillary.

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#### Nominal Composition

Silver (Ag)	50.0 ± 1.0%
Copper (Cu)	15.5 ± 1.0%
Zinc (Zn)	16.5 ± 2.0%
Cadmium (Cd)	18.0 ± 1.0%
Total Other Elements	0.15% Max.

#### Specifications

Melting Pt.	1160 °F 627 °C
Flow Pt.	1175 °F 635 °C
MBT <sup>1</sup>	1400
AWS A5.8	BAG-1a
ASME	BAG-1a
AMS	4770
QQ-B-654	Grade IV
MIL-B-15345	Grade IV
Preform Options	Brazing Discs Brazing Rings Brazing Washers Cut-Offs
Resale Options <sup>2</sup>	Brazing Rod Brazing Strip Brazing wire
Pricing & availability	We offer competitive pricing backed up by an extensive in-house inventory. For custom formulations, consult our technical support team for assistance.
Approx. Wire Length (BCuP/lb.) (BAG/Tr.oz)	260 in; 0.031 diameter 28 in; 0.093 diameter 65 in; 0.062 diameter

<sup>1</sup> Recommended Brazing Temperature

<sup>2</sup> Rod - Flux Coating Available

#### Physical Constants

<b>Solidus</b>	1160 °F 627 °C
<b>Liquidus</b>	1175 °F 635 °C
<b>Brazing Range</b>	1200 to 1400 °F 648 to 760 °C
<b>Specific Gravity</b>	9.45
<b>Density</b>	4.98 T.oz./cu.in.
<b>Electrical Conductivity</b>	23.9 % IACS
<b>Electrical Resistivity</b>	7.00 Micro ohm-cm
<b>Color</b>	Light Yellow

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### Properties of Brazed Joints

Generally, the joint strength using Brazeit 50 will surpass the strengths of the base metals. Strength is a function of the base metals being joined, type of joint, design of joint, joint clearances and brazing procedures. The recommended maximum operating temperature for Brazeit 50 is up to 400 °F in continuous service and up to 600 °F in intermittent service. Where improved corrosion resistance is needed, Brazeit A-50N and Brazeit A-40N2 are recommended over silver base filler metals not containing nickel.

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### Applications

Typical applications are the brazing of ferrous, nonferrous and dissimilar metals and alloys close joint clearances.

Similar to Sil. 45 properties with narrower melt range. Used on some base metals.

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### Safety Information

Brazeit 50 contains cadmium and therefore upon heating may produce toxic fumes. It is essential that adequate ventilation be provided so that personnel will not inhale gases and fumes while brazing. The operation and maintenance of brazing equipment of facility should conform to the provisions of American National Standard (ANSI) Z49.1, "Safety in Welding and Cutting." For more complete information, refer to the Material Safety Data Sheet for Brazeit 50.

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### Available Forms

Standard forms of Brazeit 50 are brazing wire, brazing strip and brazing preforms.