Bellman-Melcor LLC
7575 West 183rd Street
Tinley Park, Illinois 60477
Phone: 1-800-367-6024 • **Fax:** 1.888.BRAZE-IT-272.9348
Email: sales@bellmanmelcor.com • **Website:** www.bellmanmelcor.com

Item # BrazeIt 50N, Cadmium Bearing Brazing Alloys

Primarily used for the brazing 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 50N is a modification of Brazeit 50. It was originally introduced because of somewhat better corrosion resistance than Brazeit 50 for certain conditions, and is still used for such purposes. It has proven successful on many marine applications and for dairy equipment which must withstand strong cleaning solutions. The 3% nickel content of this alloy also improves its wetting of stainless steel and tungsten carbide tool tips. At the present time, the largest use of this brazing alloy is for attaching carbide cutting tips to tool shanks.

Nominal Composition · Specifications · Physical Constants · Properties of Brazed Joints · Applications · Safety Information · Available Forms

Nominal Composition

Silver (Ag)	50.0 ± 1.0%
Copper (Cu)	15.5 ± 1.0%
Zinc (Zn)	15.5 ± 2.0%
Cadmium (Cd)	16.0 ± 1.0%
Nickel (Ni)	3.0 ± 0.5%
Total Other Elements	0.15% Max.

Specifications

Melting Pt.	1170 ºF 632 ºC
Flow Pt.	1270 ºF 688 ºC
MBT[1]	1500
AWS A5.8	BAg-3
ASME	BAg-3
AMS	4771
QQ-B-654	Grade V
MIL-B-15395	Grade V
Preform Options	Brazing Discs Brazing Rings Brazing Washers Cut-Offs
Resale Options[2]	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 29 in; 0.093 diameter 65 in; 0.062 diameter

[1] Recommended Brazing Temperature

[2] Rod - Flux Coating Available

Physical Constants

Solidus	1170 ºF 632 ºC
Liquidus	1270 ºF 688 ºC
Brazing Range	1270 to 1500 ºF 688 to 816 ºC
Specific Gravity	9.49
Density	5.02 T.oz./cu.in.
Electrical Conductivity	18 % IACS
Electrical Resistivity	9.58 Micro ohm-cm
Color	Light Yellow

Properties of Brazed Joints

Generally, the joint strength using Brazeit 50N 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 50N is up to 400 ºF in continuous service and up to 600 ºF in intermittent service.

Applications

When melting, Brazeit 50N passes from the solid state to a mushy or plastic range and progressively to a liquid. The largest portion of Brazeit 50N melts in the upper section of its temperature range. Therefore, the alloy has a good body while in the plastic range and is suitable for building fillets or bridging large gaps. Late melting of the major portion of the alloy also helps minimize any separation of the solid and liquid portions by liquation during melting.

Universal alloy for the brazing of carbide tool assemblies. Nickel addition improves corrosion resistance in marine environment and caustic media.

Safety Information

Brazeit 50N 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 further information refer to the Material Safety Data Sheet for Brazeit 50N.

Available Forms

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