



Material Data Sheet

700XX

Pb	Zn	Ni	Fe	Al	Cu
0.1%	8.5%	15%	1.25%	9.5%	Balance

Applications:

700XX is used as a mold material in the glass container industry and other high temperature controlled heat transfer applications which experience severe wear conditions at elevated temperatures. The higher nickel content gives 700XX increased resistance to wear and corrosion compared to alloy 690, thereby making this alloy an excellent choice for neck rings and bottom plates.



Physical Properties

Density:	0.285 lbs/in ³ (7.889 grams/cm ³)
Tensile Strength:	88,000 psi typical at room temp.
Yield Strength:	44,000 psi typical at room temp. (0.5% Ext. under load)
Elongation:	4% (in 2 inches) typical at room temp.
Modulus of Elasticity:	Tension: 17,300 ksi typical
Melting Temperature:	Approx. 1950° F
Specific Gravity:	7.65
Machinability Rating:	55 (Free Cutting Brass = 100)
Typical Hardness:	Brinell Hardness @ 3000 Kg load = 180 - 210

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700X

Corrosion Resistance:

Over many years, 700XX has proven itself effective in the extremely corrosive atmosphere of glass bottle production. However, when using 700XX, avoid using a sulfur based swabbing compound as a release agent. When the sulfur in the swabbing compound comes into contact with 700XX time after time on a production cycle, a reaction called dezincification occurs. Sulfur attacks the zinc content in 700XX, thus creating pits on the surface. To increase component cycle life, always use a non-sulfur swabbing compound on both the blank and finish side of your operation.

Welding Instructions:

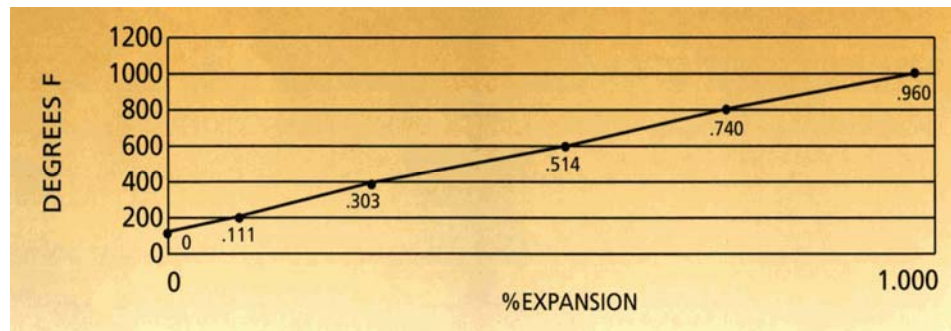
Spray welding is the recommended procedure for the repair of a 700XX casting. Use a nickel based powder for filler metal in the spray welding application. Castings being repaired using this method are to be pre-heated to 500° F - 800° F, depending on the casting size.

Elevated Thermal Properties:

Temperature Degrees F	Thermal Diffusivity cm ² /Sec	Density g/cm ³	Specific Heat cal/g-°C	Thermal Conductivity	
				W/m-K	Btu-ft/hr-ft ² -Degree F
600	0.1566	7.889	0.107	50.6632	29.27
800	0.1595	7.889	0.113	54.4949	31.49
1000	0.1478	7.889	0.117	52.2850	30.21

Test conducted in accordance with ASTM E-1461.

Thermal Expansion:



Test conducted in accordance with test Specification ASTM E-228. Sample size of 0.25 inches in diameter by 2.00 inches

Nickel Insert Information:

Nickel inserts are available in 700XX neck rings. Nickel inserts are placed in the high abrasion areas of the neck ring to increase the casting life span. The inserts are mechanically bonded during the casting process. Nickel inserts are typically made from alloy FB-30 or FB-40. The inserts inside diameter can be no larger than 1.750 inches. Insert placement will need to be reviewed and approved by EBA Engineering for proper seating and mechanical locking assurance. Typical chemical composition is shown below.

B	Si	Fe	Cr	C	Ni
2%	3%	0.75%	0.5%	0.2%	Remainder

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