



HSM Wire International, Inc

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Alloy 220 - Commercial Bronze

Nominal Composition:	Cu%	Zn%		
	90%	10%		
Composition Limits:	Cu%	Zn%	Pb%	Fe%
	89 -91%	Balance	0.05% Max	0.05% Max

Physical Properties

	English Units	Metric Units
Melting Point, Liquidus	1910°F	1045°C
Melting Point, Solidus	1870°F	1020°C
Density	0.318 lb/cu in @ 68°F	8.80 gm/cu cm
Thermal Conductivity, Annealed	109 BTU ft/sq ft-hr-°F @ 68°F	0.45 cal cm/sq cm-sec-°C @ 20°C
Coefficient of Thermal Expansion	0.0000102 per °F (77 - 572°F)	0.0000184 per °C (25 - 300°C)
Electrical Resistivity, Annealed	24 ohms (circ mil/ft) @ 68°F	3.99 microhm/cm @ 20°C
Electrical Conductivity, Annealed	44% I.A.C.S	0.255 megmho/cm @ 20 °C
Thermal Capacity (Specific Heat)	0.09 BTU/lb-°F @ 68°F	0.09 cal-gm-°C @ 20°C
Modulus of Rigidity	6,400,000 psi	4500 kg/sq mm
Modulus of Elasticity (Tension)	17,000,000 psi	12,000 kg/sq mm

Typical Mechanical Property Data - Annealed Tempers (Soft)

Average Grain Size mm (a)	Tensile Strength ksi (b)	Yeild Strength x 1000 psi (c) ksi (c)	Elongation % in 2" (d)	Hardness Range (e) Rockwell F
.040/.060	36/37	8/9	48/49	57/62
.020/.040	37/39	9/12	48/49	62/67
.015/.030	38/40	10/14	48/49	57/69
.010/.025	38/41	11/15	47/48	65/72
.005/.015	39/42	13/17	46/48	69/74

*To be used as a guideline only.

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