

## C220 (CuZn10)

### Composition

Cu* (%)	Fe (%)	Pb (%)	Zn (%)
89.0-91.0	0.05 max	0.05 max	rem

\*) Cu + sum of named elements min 99.8 %

### Physical Properties

Temper	Melting point (liquidus)	Density	Specific heat cap. at 68 F (20 °C)	Electrical cond. Nom in black	Thermal cond. at 68 F (20 °C)	Mod. of elasticity	Coef. of therm.exp at 68 F (20 °C)
	°F °C						
All	1910	0.318	0.09	44	109	17	10.2
	1043						

### Mechanical Properties

At max 0.040" (1 mm)

Temper	R <sub>p0.2</sub> Yield strength ksi N/mm <sup>2</sup>	R <sub>m</sub> Tensile strength ksi N/mm <sup>2</sup>	A <sub>50</sub> Elongation 2" %	Hardness for reference HR30T HV	Min bend ratio 90°		Min bend ratio 180°	
					GW	BW	GW	BW
Soft	12 83	36-42 248-290	47		0.0	0.0	0.0	0.0
H02 (1/2H)	47 324	47-57 324-393	12	57	0.0	0.0	1.0	1.0
H04 (H)	58 400	57-66 393-455	4	66	0.0	1.0	1.5	3.0
H06 (EH)	63 435	64-72 441-497	4	68	1.0	2.0	1.5	
H08 (SH)	68 469	69-77 476-531	1	69	1.5		2.0	
H10 (ES)	70 483	72-80 497-552	1	70	1.5		3.0	

Other tempers are available upon request.

Data for information only and not for use as purchase specification.

Yield strength, Elongation and Hardness are typical values for each temper.

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### Alloy attributes

Commercial Bronze, 90% - 220 alloy with a nominal composition of 90% copper and 10 % zinc has a rich and pleasing bronze color together with such practical properties as excellent malleability, ductility, and corrosion resistance. Its strength exceeds Gilding, 95 % - 210 alloy. 220 Alloy is the standard bronze color alloy for builder's hardware. Its excellent resistance to stress-corrosion cracking as well as dezincification makes it suitable as an engineering alloy, being widely used for ammunition components and applications requiring outdoor exposure. The alloy has a high capacity for being cold worked and does not work harden as rapidly as higher zinc alloys, 240 and 260. Thus requiring fewer anneals between operations.

**Excellent formability**  
**Excellent electrical and thermal conductivity**  
**Excellent corrosion resistance**

### Typical applications

Architectural metalwork, weather-strip, base metal for bronze colored builders hardware, escutcheons, knobs, strikes, roses, hinges, compacts, lipstick cases, cosmetic containers, marine hardware, screw shells, bullet jackets, primer caps, costume jewelry, ornamental trim, vitreous enamel base, outside lighting fixtures, electric meter jaws, sprinkler brackets, caskets.

### Design limitations

Exposure to high sulfide media should be avoided.

### Applicable specifications

ASTM B36, B694