

## Eagle Brass 521 Phosphor Bronzes 8% C, Extra Hard

Category : Metal , Nonferrous Metal , Copper Alloy , Bronze

**Material Notes:**

Alloy C521 is a high tin alloy of the phosphor bronze family. The additional tin relative to the more commonly used C510 results in higher mechanical properties with a modest reduction in electrical conductivity. Applications include electronic parts, springs, contacts, switch parts and fasteners. Information provided by Eagle Brass Company

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Eagle-Brass-521-Phosphor-Bronzes-8-C-Extra-Hard.php](http://www.lookpolymers.com/polymer_Eagle-Brass-521-Phosphor-Bronzes-8-C-Extra-Hard.php)

Physical Properties	Metric	English	Comments
Density	8.80 g/cc	0.318 lb/in <sup>3</sup>	Annealed

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell 30T	77 - 82	77 - 82	Thickness > 0.020 Inch
Tensile Strength, Ultimate	669 - 772 MPa	97000 - 112000 psi	
Tensile Strength, Yield	634 - 738 MPa	92000 - 107000 psi	0.2% offset
Elongation at Break	10 - 17 %	10 - 17 %	in 2 in.
Tensile Modulus	110 GPa	16000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	18.2 $\mu\text{m}/\text{m}\cdot\text{°C}$	10.1 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
Thermal Conductivity	62.3 W/m-K	432 BTU-in/hr-ft <sup>2</sup> -°F	

Component Elements Properties	Metric	English	Comments
Copper, Cu	91.9 %	91.9 %	
Phosphorous, P	0.10 %	0.10 %	
Tin, Sn	8.0 %	8.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000137 ohm-cm	0.0000137 ohm-cm	Annealed

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