

Materion Beryllium Copper Alloy 3 Rod and Bar; AT (TF00) Temper; All Sizes (UNS C17510)

Category : Metal , Nonferrous Metal , Beryllium Alloy , Copper Alloy

Material Notes:

Treatment required for max strength: 3 hrs @ 480°C or Mill Hardened Tabulated properties apply to products after age hardening.

Information supplied by Brush Wellman. Brush Engineered Materials Inc. changed its name to Materion Corporation in March 2011.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Materion-Beryllium-Copper-Alloy-3-Rod-and-Bar-AT-TF00-Temper-All-Sizes-UNS-C17510.php

| Physical Properties | Metric | English | Comments |
|---------------------|-----------|--------------------------|----------|
| Density | 8.83 g/cc | 0.319 lb/in ³ | |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|---------------|--------------------|----------|
| Hardness, Rockwell B | 92 - 100 | 92 - 100 | |
| Tensile Strength, Ultimate | 680 - 900 MPa | 98600 - 131000 psi | |
| Tensile Strength, Yield | 550 - 690 MPa | 79800 - 100000 psi | |
| Elongation at Break | 10 - 25 % | 10 - 25 % | |
| Modulus of Elasticity | 138 GPa | 20000 ksi | |

| Thermal Properties | Metric | English | Comments |
|----------------------|--|--|----------|
| CTE, linear | 18.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature 20.0 - 200 $\text{Å}^\circ\text{C}$ | 10.0 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature 68.0 - 392 $\text{Å}^\circ\text{F}$ | |
| Thermal Conductivity | 240 W/m-K | 1670 BTU-in/hr-ft ² - $\text{Å}^\circ\text{F}$ | |
| Melting Point | 1040 - 1080 $\text{Å}^\circ\text{C}$ | 1900 - 1980 $\text{Å}^\circ\text{F}$ | |
| Solidus | 1040 $\text{Å}^\circ\text{C}$ | 1900 $\text{Å}^\circ\text{F}$ | |
| Liquidus | 1080 $\text{Å}^\circ\text{C}$ | 1980 $\text{Å}^\circ\text{F}$ | |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|---------------|---------------|------------|
| Beryllium, Be | 0.20 - 0.60 % | 0.20 - 0.60 % | |
| Copper, Cu | 98 % | 98 % | as balance |
| Nickel, Ni | 1.4 - 2.2 % | 1.4 - 2.2 % | |

| Electrical Properties | Metric | English | Comments |
|------------------------|-----------------------------------|-----------------------------------|--------------------------|
| Electrical Resistivity | 0.00000290 - 0.00000380 ohm-cm | 0.00000290 - 0.00000380 ohm-cm | 45-60% IACS Conductivity |

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