

Materion Beryllium Copper Alloy M25 Rod and Bar; HT (TH04) Temper; over 9.5 to 25.4 mm (UNS C17300)

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

Material Notes:

Treatment required for max strength: 2-3 hrs @ 315-330°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-M25-Rod-and-Bar-HT-TH04-Temper-over-95-to-254-mm-UNS-C17300.php

| Physical Properties | Metric | English | Comments |
|---------------------|-----------|--------------------------|----------|
| Density | 8.36 g/cc | 0.302 lb/in ³ | |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|-----------------|---------------------|----------|
| Hardness, Rockwell C | 38 - 44 | 38 - 44 | |
| Tensile Strength, Ultimate | 1240 - 1520 MPa | 180000 - 220000 psi | |
| Tensile Strength, Yield | 1060 - 1350 MPa | 154000 - 196000 psi | |
| Elongation at Break | 2.0 - 9.0 % | 2.0 - 9.0 % | |
| Modulus of Elasticity | 131 GPa | 19000 ksi | |

| Thermal Properties | Metric | English | Comments |
|----------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------|
| CTE, linear | 17.0 $\mu\text{m/m-}^\circ\text{C}$ @Temperature 20.0 - 200 $^\circ\text{C}$ | 9.44 $\mu\text{in/in-}^\circ\text{F}$ @Temperature 68.0 - 392 $^\circ\text{F}$ | |
| Thermal Conductivity | 105 W/m-K | 729 BTU-in/hr-ft ² - $^\circ\text{F}$ | |
| Melting Point | 870 - 980 $^\circ\text{C}$ | 1600 - 1800 $^\circ\text{F}$ | |
| Solidus | 870 $^\circ\text{C}$ | 1600 $^\circ\text{F}$ | |
| Liquidus | 980 $^\circ\text{C}$ | 1800 $^\circ\text{F}$ | |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|---------------|---------------|------------|
| Beryllium, Be | 1.8 - 2.0 % | 1.8 - 2.0 % | |
| Co + Ni | ≥ 0.20 % | ≥ 0.20 % | |
| Co + Ni + Fe | ≤ 0.60 % | ≤ 0.60 % | |
| Copper, Cu | | | as balance |

| Component Elements Properties | 97.5 % Metric | 97.5 % English | Comments |
|-------------------------------|------------------|-------------------|----------|
| Lead, Pb | 0.20 - 0.60 % | 0.20 - 0.60 % | |

| Electrical Properties | Metric | English | Comments |
|------------------------|-----------------------------------|-----------------------------------|--------------------------|
| Electrical Resistivity | 0.00000610 - 0.00000780 ohm-cm | 0.00000610 - 0.00000780 ohm-cm | 22-28% IACS Conductivity |

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