

## Materion Beryllium Copper Alloy 190 Strip; 1/2HM (TM02) Temper (UNS C17200)

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

### Material Notes:

Treatment required for max strength: Mill Hardened Stress Relaxation-% Stress Remaining after 1000 hrs @ 100°C: 97% Stress Relaxation after 1000 hrs @ 200°C: 67% Formability Ratio, 90° Bend, Radius/Thickness (Good Way): 0.5 Formability Ratio (bad Way): 1 Superficial Hardness: 30N 44-51 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-190-Strip-12HM-TM02-Temper-UNS-C17200.php](http://www.lookpolymers.com/polymer_Materion-Beryllium-Copper-Alloy-190-Strip-12HM-TM02-Temper-UNS-C17200.php)

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

| Mechanical Properties      | Metric                                | English                                   | Comments              |
|----------------------------|---------------------------------------|-------------------------------------------|-----------------------|
| Hardness, Rockwell C       | 23 - 30                               | 23 - 30                                   |                       |
| Hardness, Vickers          | 250 - 301                             | 250 - 301                                 |                       |
| Tensile Strength, Ultimate | 820 - 940 MPa                         | 119000 - 136000 psi                       |                       |
| Tensile Strength, Yield    | 650 - 870 MPa                         | 94300 - 126000 psi                        |                       |
| Elongation at Break        | 12 - 22 %                             | 12 - 22 %                                 |                       |
| Modulus of Elasticity      | 131 GPa                               | 19000 ksi                                 |                       |
| Fatigue Strength           | 290 - 330 MPa<br>@# of Cycles 1.00e+8 | 42100 - 47900 psi<br>@# of Cycles 1.00e+8 | Reverse Bending (R=1) |

| Thermal Properties   | Metric                                        | English                                         | Comments |
|----------------------|-----------------------------------------------|-------------------------------------------------|----------|
| CTE, linear          | 17.0 Åµm/m-Å°C<br>@Temperature 20.0 - 200 Å°C | 9.44 Åµin/in-Å°F<br>@Temperature 68.0 - 392 Å°F |          |
| Thermal Conductivity | 105 W/m-K                                     | 729 BTU-in/hr-ftÅ²-Å°F                          |          |
| Melting Point        | 870 - 980 Å°C                                 | 1600 - 1800 Å°F                                 |          |
| Solidus              | 870 Å°C                                       | 1600 Å°F                                        |          |
| Liquidus             | 980 Å°C                                       | 1800 Å°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                    | 98 %        | 98 %        | as balance |
| Lead, Pb                      | <= 0.020 %  | <= 0.020 %  |            |

| Electrical Properties  | Metric                           | English                          | Comments                 |
|------------------------|----------------------------------|----------------------------------|--------------------------|
| Electrical Resistivity | 0.00000610 -<br>0.0000101 ohm-cm | 0.00000610 -<br>0.0000101 ohm-cm | 17-28% IACS Conductivity |

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China