

## Goodfellow Manganin® Copper Resistance Alloy

Category : Metal , Electronic/Magnetic Alloy , Nonferrous Metal , Copper Alloy

### Material Notes:

Resistance alloy with moderate resistivity and low temperature coefficient. The resistance/temperature curve is not as flat as the constantans nor are the corrosion resistance properties as good. Information provided by Goodfellow.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Goodfellow-Manganin-Copper-Resistance-Alloy.php](http://www.lookpolymers.com/polymer_Goodfellow-Manganin-Copper-Resistance-Alloy.php)

| Physical Properties | Metric    | English                  | Comments |
|---------------------|-----------|--------------------------|----------|
| Density             | 8.40 g/cc | 0.303 lb/in <sup>3</sup> |          |

| Mechanical Properties     | Metric        | English           | Comments             |
|---------------------------|---------------|-------------------|----------------------|
| Tensile Strength at Break | 300 - 600 MPa | 43500 - 87000 psi |                      |
| Elongation at Break       | <= 50 %       | <= 50 %           |                      |
| Tensile Modulus           | 124 - 159 GPa | 18000 - 23100 ksi |                      |
| Izod Impact, Unnotched    | 1.07 J/cm     | 2.00 ft-lb/in     | Notch Status Unknown |

| Thermal Properties               | Metric                     | English                           | Comments |
|----------------------------------|----------------------------|-----------------------------------|----------|
| CTE, linear                      | 14.0 - 19.0 µm/m-°C        | 7.78 - 10.6 µin/in-°F             |          |
|                                  | @Temperature 20.0 - 100 °C | @Temperature 68.0 - 212 °F        |          |
| Thermal Conductivity             | 22.0 W/m-K                 | 153 BTU-in/hr-ft <sup>2</sup> -°F |          |
| Melting Point                    | 960 °C                     | 1760 °F                           |          |
| Maximum Service Temperature, Air | 300 °C                     | 572 °F                            |          |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|--------|---------|----------|
| Copper, Cu                    | 86 %   | 86 %    |          |
| Manganese, Mn                 | 12 %   | 12 %    |          |
| Nickel, Ni                    | 2.0 %  | 2.0 %   |          |

| Electrical Properties  | Metric                       | English                      | Comments                             |
|------------------------|------------------------------|------------------------------|--------------------------------------|
| Electrical Resistivity | 0.0000430 - 0.0000480 ohm-cm | 0.0000430 - 0.0000480 ohm-cm | Temperature Coefficient of 0.00001/K |

## Contact Songhan Plastic Technology Co.,Ltd.

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