

AIM 58 Fusible Alloy

Category : Metal , Nonferrous Metal , Bismuth Alloy , Solder/Braze Alloy

Material Notes:

Uses: lens blocking; proof casting; fusible element in safety devices; anchoring parts for machining; sealing adjustment screws; holding jet engine blades for machining and broaching; filler for supporting castings in interrupted cuts. These silvery white alloys expand only ~3.3% of their volume when changing from liquid to solid form, which makes these alloys ideal for many industrial applications. AIM fusible alloys are rarely consumed in an operation and therefore can be remelted and used multiple times. These alloys are normally used in gravity casting but also can be used in other casting methods. Information provided by AIM Specialty Materials.

Order this product through the following link:

http://www.lookpolymers.com/polymer_AIM-58-Fusible-Alloy.php

| Physical Properties | Metric | English | Comments |
|---------------------|-----------|--------------------------|----------|
| Density | 8.58 g/cc | 0.310 lb/in ³ | |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|----------|----------|----------|
| Hardness, Brinell | 14 | 14 | |
| Tensile Strength, Ultimate | 43.4 MPa | 6300 psi | |
| Elongation at Break | 50 % | 50 % | |

| Thermal Properties | Metric | English | Comments |
|------------------------|-------------------------------------------|---------------------------------------------|----------|
| Heat of Fusion | 18.6 J/g | 8.00 BTU/lb | |
| CTE, linear | 23.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ | 12.8 $\mu\text{in}/\text{in}\cdot\text{°F}$ | |
| | @Temperature 20.0 °C | @Temperature 68.0 °F | |
| Specific Heat Capacity | 0.134 J/g-°C | 0.0320 BTU/lb-°F | Liquid |
| | 0.134 J/g-°C | 0.0320 BTU/lb-°F | Solid |
| Melting Point | 58.0 °C | 136 °F | |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|--------|---------|----------|
| Bismuth, Bi | 49 % | 49 % | |
| Indium, In | 21 % | 21 % | |
| Lead, Pb | 18 % | 18 % | |
| Tin, Sn | 12 % | 12 % | |

| Electrical Properties | Metric | English | Comments |
|------------------------|------------------|------------------|----------|
| Electrical Resistivity | 0.0000710 ohm-cm | 0.0000710 ohm-cm | |

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