

AIM 47 Fusible Bismuth Alloy

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

Material Notes:

Uses: low -temperature solder; fixturing delicate parts for machining; lens blocking; proof casting of cavities; dental models; fusible element in safety devices and alarms; radiation blocking for x-rays. 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-47-Fusible-Bismuth-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.86 g/cc	0.320 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	12	12	
Tensile Strength, Ultimate	37.2 MPa	5400 psi	
Elongation at Break	1.5 %	1.5 %	

Thermal Properties	Metric	English	Comments
Heat of Fusion	14.0 J/g	6.02 BTU/lb	
CTE, linear	25.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 20.0 $^\circ\text{C}$	13.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 68.0 $^\circ\text{F}$	
Specific Heat Capacity	0.146 J/g- $^\circ\text{C}$	0.0350 BTU/lb- $^\circ\text{F}$	Liquid
	0.146 J/g- $^\circ\text{C}$	0.0350 BTU/lb- $^\circ\text{F}$	Solid
Melting Point	47.0 $^\circ\text{C}$	117 $^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Bismuth, Bi	44.7 %	44.7 %	
Cadmium, Cd	5.3 %	5.3 %	
Indium, In	19.1 %	19.1 %	
Lead, Pb	22.6 %	22.6 %	
Tin, Sn	8.3 %	8.3 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000380 ohm-cm	0.0000380 ohm-cm	

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