

Maverick Superimide[®] SM-438

HIGH TEMP ~ LIGHT WEIGHT ~ EXTENDED LIFE

SUPERIOR STRENGTH

Superimide[®] SM-438 is a high temperature, high strength, polyimide resin composite system designed for service in extreme conditions such as jet engine and industrial heavy machinery. SM-438 must be considered when strength is your primary design concern.

Fully certified components made from Superimide[®] SM-438 are available exclusively from Maverick Molding Co.

Typical Properties

Mechanical Properties	Temperature	Test Method	Units	Typical Values
Tensile Strength	RT	ASTM D638	Ksi	17.5
Tensile Modulus	RT	ASTM D638	Msi	1.5
Tensile Elongation @ Break	RT	ASTM D638	%	1.3
Tensile Strength	500°F	ASTM D638	Ksi	6.1
Tensile Elongation @ Break	500°F	ASTM D695	%	1.2
Compressive Strength	RT	ASTM D695	Ksi	55
Compressive Modulus	RT	ASTM D695	Msi	2.4
Compressive Strength	500°F	ASTM D695	Ksi	35
Compressive Modulus	500°F	ASTM D695	Msi	1.3
Shear Strength	RT	ASTM D5379	Ksi	7.5

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Typical Properties

Mechanical Properties	Temperature	Test Method	Units	Typical Values
Flexural Strength	RT	ASTM D790	Ksi	30
Flexural Modulus	RT	ASTM D790	Msi	1.9
Flexural Strength	500°F	ASTM D790	Ksi	11.5
Physical Properties	Temperature	Test Method	Units	Typical Values
Density	RT	ASTM D792	(g/cm ³)	1.52
Hardness, Rockwell "E"	RT	ASTM D785	-	100
Glass Transition Temperature, Dry Tg	RT – 750°F	ASTM E1640	°F	644
Glass Transition Temperature, Wet Tg	RT – 750°F	ASTM E1640	°F	545
CTE Parallel to Molding Direction	RT to 450°F	ASTM E831	In-inE-6/°F	22
CTE Transverse to Molding Direction	RT to 450°F	ASTM E831	In-inE-6/°F	11
TOS (700°F, 100 hrs, 70 psi) Weight Loss	700°F	Pressurized TOS E50TF534	%	5.2
TOS (600°F, 120 hrs, 150 psi) Weight Loss	600°F	Pressurized TOS E50TF534	%	2.3

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Wear Properties	Temperature	Test Method	Units	Typical Values
Coefficient of Friction	RT to 700°F	ASTM G99	-	0.25
Wear @ Temp 30N Load, 500 rpm, 2 hours	400°F	ASTM G99	μm	8
Wear @ Temp 30N Load, 500 rpm, 2 hours	500°F	ASTM G99	μm	75
Wear @ Temp 30N Load, 500 rpm, 2 hours	600°F	ASTM G99	μm	175
Thermal Conductivity	RT	ASTM E1225-04	BTU/Hrs.ft°F	0.76
Thermal Conductivity	662°F	ASTM E1225-05	BTU/Hrs.ft°F	1.05
Specific Heat Capacity	RT	ASTM E1269-05	W/mK	1.35
Specific Heat Capacity	662°F	ASTM E1269-06	J/kg°C	1.86

Disclaimer: The data listed herein fall within the normal range of properties but should not be used to establish specification limits or used alone as the basis of design. Maverick Molding Co. assumes no obligations or liabilities for any advice furnished or for any results obtained with respect to this information. All such advice is given and accepted at buyer's risk.



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