

MATERIAL DATASHEET

Meldin[®] 7021 HCM

Features: Black, self-lubricating grade, proprietary custom polyimide, Hot Compression Molded (HCM)

Benefits: Best choice for high temperature bearings, seals and other low wear applications

Working Temperature Range: -253° to +315°C [-423F° to +600°F]

Properties	Test Methods	Typical Values	Units
PHYSICAL			
Specific Gravity	ASTM D792	1.51	--
Hardness	ASTM D785	25-40	Rockwell E
Water Absorption, 24hr/48hr	ASTM D570	0.19/0.50	%
Limiting Oxygen Index	ASTM D2863	100	--
MECHANICAL			
Tensile Strength – RT / 260°C [500°F]	ASTM D638	66 [9,500] / 39 [5,700]	MPa [psi]
Elongation – RT / 260°C [500°F]	ASTM D638	4.7 / 3.2	%
Compressive Stress @ 1% Strain/@10% Strain	ASTM D695	30 [4,300] / 124 [18,000]	MPa [psi]
Compressive Modulus-RT	ASTM D695	3.1 [4.5]	GPa [psi x 10 ⁵]
Flexural Strength – RT/260°C [500°F]	ASTM D790	109 [15,800] / 59 [8,600]	MPa [psi]
Flexural Modulus – RT/260°C [500°F]	ASTM D790	3.7 [5.3] / 2.4 [3.5]	GPa [psi x 10 ⁵]
Deformation Under Load @ 2,000 psi	ASTM D621	0.1	%
THERMAL			
Coefficient of Thermal Expansion 23° to 260°C [73° to 500°F]	ASTM E831	4.0 [2.2]	m/m/°C [in/in/°F] x 10 ⁻⁵
Thermal conductivity	ASTM F433	0.72 [5.0]	GPa [psi x 10 ⁵]
Flammability	UL94	V-0, 5VA	--
ELECTRICAL			
Dielectric Strength, Short time 2.0 mm [0.08"] thick	ASTM D149	11 [280]	MV/m [V/mil]
Dielectric Constant 100Hz / 10kHz / 1mHz	ASTM D150	6.49 / 6.42 / 6.28	GPa [psi x 10 ⁵]
Dissipation Factor 100Hz / 10kHz / 1mHz	ASTM D150	0.003 / 0.007 / 0.011	GPa [psi x 10 ⁵]
Surface Resistivity	ASTM D257	10 ⁸ -10 ⁹	Ohm·sq

1. ASTM D6456-10 Standard Specification for Finished Parts Made from Polyimide Resin (Type II Class 1P)

2. SAE AMS 3644G Polyimide, Molded Rod, Bar and Tube, Plaque, and Formed Parts (Class 2 Form P)

The table above represents typical values, intended for reference only. They should NOT be used as a basis for design specifications or quality control.

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