

# TX-2020-M1 BLACK

- **Product Summary:** TX-2020-M1 BLACK is a glass fiber and mineral filled PPS compound with electric insulating and high thermal conductive property.
- **Color:** Black

## Engineering Properties

Properties	Test Method	Unit	Typical value
			GF/Filler
General Information			High thermal conductivity, Electric Insulating
<b>Physical</b>			
Density	ISO 1183-1	g/cm <sup>3</sup>	2.10
Water absorption, 23°C /24hrs.	ISO 62	%	0.02
Mold shrinkage <sup>a</sup>	ISO 294-4	%	0.5/0.7
<b>Mechanical</b>			
Tensile strength	ISO 527-1,2	MPa	90
Tensile modulus	ISO 527-1,2	GPa	16
Tensile strain at break	ISO 527-1,2	%	0.7
Flexural strength	ISO 178	MPa	155
Flexural modulus	ISO 178	GPa	18
Flexural strain at flexural strength	ISO 178	%	1.0
Charpy impact strength, notched	ISO 179/1eA	kJ/m <sup>2</sup>	4
unnotched	ISO 179/1eU	kJ/m <sup>2</sup>	15
Co-eff. of friction <sup>b</sup> , static/dynamic	-	-	-
<b>Thermal</b>			
Temperature of deflection under load, 1.80MPa	ISO 75-1,2	°C	274
Co-eff. of linear thermal expansion <sup>a</sup> , -50~50 °C	ISO 11359-2	x 10 <sup>-5</sup> /K	1.7/2.8
Co-eff. of linear thermal expansion <sup>a</sup> , 100~200 °C	ISO 11359-2	x 10 <sup>-5</sup> /K	1.8/6.3
Flammability <sup>c</sup> /thickness (mm)	UL-94	-	V-0/0.75
Thermal Conductivity (In-plane)	HotDisk Method	W/m·K	1.0
Thermal Conductivity (Through-plane)	Xe Flash Method	W/m·K	1.0
<b>Electrical</b>			
Electric strength, t=1.0mm	IEC 60243-1	kV/mm	20
Relative permittivity, 1MHz	IEC 62631-2-1	-	5
Dielectric dissipation factor, 1MHz	IEC 62631-2-1	-	0.005
Comparative Tracking Index (CTI)	IEC 60112	V	175
Volume resistivity	IEC 62631-3-1	Ω·cm	10 <sup>15</sup>
<b>Molding Condition</b>			
Cylinder temperature	-	°C	300-340
Mold temperature	-	°C	130-160

a: Flow direction/Transverse direction

b: P=150kPa, V=0.3m/s, PPS vs. carbon steel

c: UL file No. E53829