



Made of MAKROLON®

PRODUCT CAPABILITIES:

Sheet: 2mm, 3mm, 4mm, 5mm,
6mm (Customized)

ADVANTAGES:

- Resistance Temperature of -100° C to +120° C
- Extreme Impact Strength
- Exhibit High Optical Clarity
- Excellent Fire Rating
- UL94-V0 rated as of 2mm thickness, comply with EN 45545-2 (European fire standard for rail applications) requirement R4, R22, R23 and R24 and meet FAR 25.853 (a)(1)(i)

PRODUCT COLORS:

○ Clear

APPLICATIONS INCLUDE:

- Electro Technical Components and guards comply with UL94, EN45545-2 or FAR 25.853 requirements
- Lighting Fixtures on railway vehicles
- Any application where improved fire behavior is needed for fire safe solutions

GENERAL PROPERTIES	TEST METHOD	FR CLEAR 099 Typical Values
PHYSICAL		
Density (kg/m ³)	ISO 1183-1	1,200
Water Absorption Saturation at 23 °C (%)	ISO 62	0.30
MECHANICAL		
Tensile Modulus (MPa)	ISO 527-1, -2	2,400
Yield Stress (MPa)	ISO 527-1, -2	>60
Yield Strain (%)	ISO 527-1, -2	6
Strain at break (%)	ISO 527-1, -2	120
Flexural Modulus (MPa)	ISO 178	2,400
Flexural Strength (MPa)	ISO 178	>90
Charpy Impact Strength (Unnotched) (kJ/m ²)	ISO 179-1eU	Non-break
Charpy Impact Strength (Notched) (kJ/m ²)	ISO 179-1eU	70P
Izod Impact Strength, 23 °C (kJ/m ²)	ISO 180-A	60P
THERMAL		
Vicat Softening temperature (°F / °C)	ISO 306	295 / 146
Thermal Conductivity (W/(mK))	ISO 8302	0.20
Coefficient of Thermal Expansion(10 ⁻⁴ /K)	ISO 11359-1, -2	0.70
Temperature of deflection under load (1.80 Mpa) (°F / °C)	ISO 75-1, -2	261 / 127
Temperature of deflection under load (0.45 Mpa) (°F / °C)	ISO 75-1, -2	282 / 139
ELECTRICAL		
Electric Strength (kV/mm)	IEC 60243-1	34
Volume Resistivity (ohm.m)	IEC 60093	10 ¹⁴
Surface Resistivity (ohm)	IEC 60093	10 ¹⁶
Relative Permittivity (100 Hz/ 1MHz)	IEC 60250	3.1/ 3.0
Dissipation Factor (100 Hz/ 1 MHz)	IEC 60250	10 10 ⁻⁴ / 90 10 ⁻⁴
Light Transmission (%) (5mm)	DIN 5036	85

NOTE: The information contained here in is typical values intended for reference only. They should NOT be used as a basis for design specifications or quality control.