



Product Data Sheet & General Processing Conditions

ZOVGOV® M21FR Polycarbonate (PC) Unreinforced Flame Retardant UL94 V-0

The MOLAN M21 series of flame retardant materials offer dimensional stability, rigidity, heat resistance and ignition resistance. MOLAN M21 FR possesses a UL94 5V-A certification.

PROPERTIES & AVERAGE VALUES OF INJECTION MOLDED SPECIMENS

PERMANENCE	English	SI Metric	ASTM TEST
Specific Gravity	1.22	1.22	D 792
Melt Flow Rate @ 300 °C, / 1.2 kg	10.00 - 12.00 g/10 min	10.00 - 12.00 g/10 min	D 1238
Molding Shrinkage 1/8 in (3.2 mm) section	0.0050 - 0.0080 in/in	0.50 - 0.80 %	D 955
Water Absorption, 24 hrs @ 23°C	0.150 %	0.150 %	D 570

MECHANICAL

Impact Strength, Izod notched 1/8 in (3.2 mm) section	12.0 ft-lbs/in	641 J/m	D 256
unnotched 1/8 in (3.2 mm) section	No Break	No Break	D 4812
Tensile Strength	9100 psi	63 MPa	D 638
Tensile Elongation	> 10.0 %	> 10.0 %	D 638
Tensile Modulus	0.33 x 10 ⁶ psi	2275 MPa	D 638
Flexural Strength	14000 psi	97 MPa	D 790
Flexural Modulus	0.35 x 10 ⁶ psi	2413 MPa	D 790
Hardness Rockwell, R	118	118	D 785

ELECTRICAL

Dielectric Constant, 1 MHz, Dry	3.0	3.0	D 150
Dissipation Factor, 1 MHz, Dry	0.0100	0.0100	D 150
Volume Resistivity	> 1E16 ohm.cm	> 1E16 ohm.cm	D 257

THERMAL

Deflection Temperature @ 264 psi (1820 kPa)	270 °F	132 °C	D 648
@ 66 psi (455 kPa)	280 °F	138 °C	D 648
Ignition Resistance*			
Flammability	V-0 @ 1/16 in	V-0 @ 1.5 mm	UL94
Flammability	5VA @ 1/8 in	5VA @ 3.0 mm	UL94
Limiting Oxygen Index	35.0 %	35.00 %	D 2863

PROPERTY NOTES

Data herein is typical and not to be construed as specifications.

Unless otherwise specified, all data listed is for natural or black colored materials. Pigments can affect properties.

* This rating is not intended to reflect hazards of this or any other material under actual fire conditions.

GENERAL PROCESSING FOR INJECTION MOLDING

	English	SI Metric
Injection Pressure	10000 - 15000 psi	69 - 103 MPa

Melt Temperature	550 - 600 °F	288 - 316 °C
Mold Temperature	180 - 250 °F	82 - 121 °C
Drying	4 hrs @ 250 °F	4 hrs @ 121 °C
Moisture Content	0.02 %	0.02 %
Dew Point	-20 °F	-29 °C

PROCESSING NOTES

Desiccant Type Dryer Required.

This information is intended to be used only as a guideline for designers and processors of modified thermoplastics. Because design and processing is complex, a set solution will not solve all problems. Observation on a "trial and error" basis may be required to achieve desired results.

Data are obtained from specimens molded under carefully controlled conditions from representative samples of the compound described herein. Properties may be materially affected by molding techniques applied and by the size and shape of the item molded. No assurance can be implied that all molded articles will have the same properties as those listed.