TPX™ MX004

Mitsui Chemicals America, Inc. - *Polymethylpentene Copolymer*

General Information

General			
Material Status	• Commercial: Active		
Availability	• North America		
Features	• Good Stiffness		
Appearance	• Clear/Transparent		
Forms	• Pellets		
Processing Method	• Blow Molding • Extrusion	• Fiber (Spinning) Extrusion • Injection Molding	• Pipe Extrusion • Profile Extrusion

Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.835		Internal Method
Melt Mass-Flow Rate (MFR) (260°C/5.0 kg)	25	g/10 min	Internal Method
Spiral Flow [2]	20.9	in	Internal Method
Molding Shrinkage - Flow [3] (0.0787 in)	0.017	in/in	Internal Method
Molding Shrinkage - Across Flow [3] (0.0787 in)	0.014	in/in	Internal Method
Water Absorption (Saturation)	< 0.010	%	ASTM D570
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [4] (73°F, Injection Molded)	189000	psi	ASTM D638
Tensile Strength [4] (Yield, 73°F, Injection Molded)	3630	psi	ASTM D638
Tensile Strength [4] (Break, 73°F, Injection Molded)	2900	psi	ASTM D638
Tensile Elongation [4] (Break, 73°F, Injection Molded)	27	%	ASTM D638
Flexural Modulus [5] (0.126 in, Injection Molded, 2.01 in Span)	109000	psi	ASTM D790
Flexural Strength [5] (0.126 in, Injection Molded, 2.01 in Span)	3630	psi	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (Injection Molded)	0.51	ft·lb/in	ASTM D256
Unnotched Izod Impact (73°F, Injection Molded)	0.41	ft·lb/in	ASTM D4812
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (R-Scale)	66		ASTM D785
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load [6] (66 psi, Unannealed, 0.250 in)	212	°F	ASTM D648
Vicat Softening Temperature	327	°F	ASTM D1525 [7]
Peak Crystallization Temperature (DSC)	442	°F	ASTM D3418
CLTE - Flow (14 to 320°F)	6.5E-5	in/in/°F	Internal Method
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity [8] (0.0787 in)	> 1.0E+16	ohms·cm	ASTM D257
Dielectric Strength [8] (0.0787 in)	810	V/mil	ASTM D149
Dielectric Constant [8] (0.0787 in, 1 MHz)	2.14		ASTM D150
Optical	**Nominal Value**	**Unit**	**Test Method**
Refractive Index [9]	1.462		ASTM D542
Light Transmittance (Injection Molded)	94.0	%	ASTM D1003
Haze (Injection Molded)	0.700	%	ASTM D1003

Processing Information

Injection	Nominal Value	Unit
Rear Temperature	518	°F

Middle Temperature	536	°F
Front Temperature	572	°F
Mold Temperature	68 to 140	°F
Injection Pressure	4350 to 5800	psi
Holding Pressure	4350	psi

Injection Notes
Zone 4 Temperature: 300°C

Extrusion	**Nominal Value**	**Unit**
Cylinder Zone 1 Temp.	536	°F
Cylinder Zone 2 Temp.	554	°F
Cylinder Zone 3 Temp.	554	°F
Cylinder Zone 4 Temp.	554	°F
Adapter Temperature	554	°F
Die Temperature	554	°F

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Mold Temperature: 163°F, Melt Temperature: 590°F

[3] 260 to 280°C

[4] Type IV, 2.0 in/min

[5] 0.051 in/min

[6] 120°C/hr

[7] Rate A (50°C/h), Loading 1 (10 N)

[8] Injection Molded

[9] Injection Molded, 2 mm, 589 nm wavelength