

TPX™ DX820

Mitsui Chemicals America, Inc. - *Polymethylpentene Copolymer*
General Information
General

Material Status	• Commercial: Active
Availability	• North America
Features	• High Stiffness
Appearance	• Clear/Transparent
Forms	• Pellets
Processing Method	• Extrusion Coating • Fiber (Spinning) Extrusion • Injection Molding

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.834		Internal Method
Melt Mass-Flow Rate (MFR) (260°C/5.0 kg)	180	g/10 min	Internal Method
Water Absorption (Saturation)	< 0.010	%	ASTM D570
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ² (73°F, Injection Molded)	283000	psi	ASTM D638
Tensile Strength ² (Yield, 73°F, Injection Molded)	4640	psi	ASTM D638
Tensile Strength ² (Break, 73°F, Injection Molded)	3630	psi	ASTM D638
Tensile Elongation ² (Break, 73°F, Injection Molded)	7.0	%	ASTM D638
Flexural Modulus ³ (0.126 in, Injection Molded, 2.01 in Span)	232000	psi	ASTM D790
Flexural Strength ³ (0.126 in, Injection Molded, 2.01 in Span)	5800	psi	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (Injection Molded)	0.19	ft·lb/in	ASTM D256
Unnotched Izod Impact (73°F, Injection Molded)	0.17	ft·lb/in	ASTM D4812
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	90		ASTM D785
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load ⁴ (66 psi, Unannealed, 0.250 in)	270	°F	ASTM D648
Vicat Softening Temperature	342	°F	ASTM D1525 ⁵
Peak Crystallization Temperature (DSC)	450	°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 ⁶ (0.0787 in)	> 1.0E+16	ohms·cm	ASTM D257
Dielectric Strength ⁶ (0.0787 in)	810	V/mil	ASTM D149
Dielectric Constant ⁶ (0.0787 in, 1 MHz)	2.14		ASTM D150
Optical	Nominal Value	Unit	Test Method
Refractive Index ⁷	1.461		ASTM D542
Light Transmittance (Injection Molded)	92.0	%	ASTM D1003
Haze (Injection Molded)	2.10	%	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 Type IV, 2.0 in/min

³ 0.051 in/min

⁴ 120°C/hr

⁵ Rate A (50°C/h), Loading 1 (10 N)

⁶ Injection Molded

⁷ Injection Molded, 2 mm, 589 nm wavelength

