

# TPX™ RT18

Polymethylpentene Copolymer  
Mitsui Chemicals America, Inc.

**PROSPECTOR®**

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## Technical Data

### Product Description

TPX™ RT18 is a Polymethylpentene Copolymer (PMP Copolymer) material. It is available in North America for extrusion, fiber (spinning) extrusion, injection molding, pipe extrusion, or profile extrusion. Primary attribute of TPX™ RT18: High Stiffness.

### General

Material Status	• Commercial: Active
Literature <sup>1</sup>	• <a href="#">Processing - Extrusion (English)</a> • <a href="#">Processing - Injection Molding (English)</a> • <a href="#">Technical Datasheet (English)</a>
UL Yellow Card <sup>2</sup>	• <a href="#">E52579-242973</a>
Search for UL Yellow Card	• <a href="#">Mitsui Chemicals America, Inc.</a> • <a href="#">TPX™</a>
Availability	• North America
Features	• High Stiffness
Appearance	• Clear/Transparent
Forms	• Pellets
Processing Method	• Extrusion • Fiber (Spinning) Extrusion • Injection Molding • Pipe Extrusion • Profile Extrusion

Physical	Nominal Value Unit	Test Method
Density / Specific Gravity	0.833 g/cm <sup>3</sup>	Internal Method
Melt Mass-Flow Rate (MFR) (260°C/5.0 kg)	26 g/10 min	Internal Method
Spiral Flow <sup>4</sup>	51.0 cm	Internal Method
Molding Shrinkage <sup>5</sup>		Internal Method
Flow : 2.00 mm	1.6 %	
Across Flow : 2.00 mm	1.3 %	
Water Absorption (Saturation)	< 0.010 %	ASTM D570
Mechanical	Nominal Value Unit	Test Method
Tensile Modulus <sup>6</sup> (23°C, Injection Molded)	1900 MPa	ASTM D638
Tensile Strength <sup>6</sup>		ASTM D638
Yield, 23°C, Injection Molded	30.0 MPa	
Break, 23°C, Injection Molded	25.0 MPa	
Tensile Elongation <sup>6</sup>		ASTM D638
Break, 23°C, Injection Molded	22 %	
Flexural Modulus <sup>7</sup>		ASTM D790
3.20 mm, Injection Molded, 51.0 mm Span	1450 MPa	
Flexural Strength <sup>7</sup>		ASTM D790
3.20 mm, Injection Molded, 51.0 mm Span	36.0 MPa	
Impact	Nominal Value Unit	Test Method
Notched Izod Impact (Injection Molded)	24 J/m	ASTM D256
Unnotched Izod Impact		ASTM D4812
23°C, Injection Molded	10 J/m	
Hardness	Nominal Value Unit	Test Method
Rockwell Hardness (R-Scale)	83	ASTM D785
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load <sup>8</sup>		ASTM D648
0.45 MPa, Unannealed, 6.35 mm	127 °C	
Vicat Softening Temperature	168 °C	ASTM D1525 <sup>9</sup>
Peak Crystallization Temperature (DSC)	232 °C	ASTM D3418
CLTE - Flow (-10 to 160°C)	1.2E-4 cm/cm/°C	Internal Method



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Electrical	Nominal Value Unit	Test Method
Volume Resistivity <sup>10</sup> (2.00 mm)	> 1.0E+16 ohms·cm	ASTM D257
Dielectric Strength <sup>10</sup> (2.00 mm)	32 kV/mm	ASTM D149
Dielectric Constant <sup>10</sup> (2.00 mm, 1 MHz)	2.11	ASTM D150

Optical	Nominal Value Unit	Test Method
Refractive Index <sup>11</sup>	1.462	ASTM D542
Light Transmittance (Injection Molded)	94.0 %	ASTM D1003
Haze (Injection Molded)	0.700 %	ASTM D1003

Injection	Nominal Value Unit
Rear Temperature	270 °C
Middle Temperature	280 °C
Front Temperature	300 °C
Mold Temperature	20 to 60 °C
Injection Pressure	30.0 to 40.0 MPa
Holding Pressure	30.0 MPa

### Injection Notes

Zone 4 Temperature: 300°C

Extrusion	Nominal Value Unit
Cylinder Zone 1 Temp.	280 °C
Cylinder Zone 2 Temp.	290 °C
Cylinder Zone 3 Temp.	290 °C
Cylinder Zone 4 Temp.	290 °C
Adapter Temperature	290 °C
Die Temperature	290 °C

### Notes

<sup>1</sup> These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

<sup>2</sup> A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

<sup>3</sup> Typical properties: these are not to be construed as specifications.

<sup>4</sup> Mold Temperature: 73°C, Melt Temperature: 310°C

<sup>5</sup> 260 to 280°C

<sup>6</sup> Type IV, 50 mm/min

<sup>7</sup> 1.3 mm/min

<sup>8</sup> 120°C/hr

<sup>9</sup> Rate A (50°C/h), Loading 1 (10 N)

<sup>10</sup> Injection Molded

<sup>11</sup> Injection Molded, 2 mm, 589 nm wavelength



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### Where to Buy

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#### Supplier

##### Mitsui Chemicals America, Inc.

Purchase, Purchase USA

Telephone: 914-253-0777

Web: <http://www.mitsuichechemicals.com/>

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#### Distributor

##### Chase Plastic Services, Inc.

*Chase Plastics Services is a North American distributor with representatives throughout the region. Please find your rep here: <http://www.chaseplastics.com/contact/locations>*

Telephone: 800-232-4273

Web: <http://www.chaseplastics.com/>

Availability: North America

##### Formerra (Formerly Avient Distribution)

*Formerra is a next generation distributor of performance material solutions for the world's leading brand owners and manufacturers. Bringing you commercial and technical expertise, industry know-how, and access to more than 5,000 materials from 40+ premium suppliers faster and easier than ever before.*

Telephone: 1.888.502.0951 (USA); +86-21-60284936 (China)

Web: <https://www.formerra.com>

Availability: Global

##### PolySource

*PolySource is a North American resin and plastics distributor. Please feel to reach out to your Technical Sales Account Manager. <https://polysource.net/our-team/>*

Telephone: 816-540-5300

Web: <http://www.polysource.net/>

Availability: Canada, Mexico, United States

