

STYRON 478

Dow Plastics - Polystyrene, High Impact

 Units: English ▼

Actions

 - E-mail a Data Sheet

Product Description

STYRON 478 is a high impact polystyrene with high flow, good gloss, excellent stiffness, high heat and impact resistance compared with other Dow high impact polystyrene resins. It is used in applications such as toys, appliances, housewares, medical and consumer electronics.

Product Characteristics

Material Status	<ul style="list-style-type: none"> Commercial: Active
Availability	<ul style="list-style-type: none"> North America Latin America
Test Standards Available	<ul style="list-style-type: none"> ASTM ISO 10350
Recycled Content	<ul style="list-style-type: none"> No
Agency Ratings	<ul style="list-style-type: none"> UL 94 USP XXIII, Class VI ¹ FDA 21 CFR 177.1640 ²
Forms	<ul style="list-style-type: none"> Pellets
Processing Method	<ul style="list-style-type: none"> Injection Molding Extrusion
Multi-Point Data	<ul style="list-style-type: none"> Viscosity vs. Shear Rate (ISO 11403-2) Shear Modulus vs. Temperature (ISO 11403-2) Isothermal Stress vs. Strain (ISO 11403-1) Tensile Stress vs. Strain (ASTM D638)

Properties ³

Physical	Nominal Values (English)	Test Method
Density -Specific Gravity	1.04 sp gr 23/23°C	ASTM D792
Melt Flow Rate (200°C/5.0 kg - G)	6.00 g/10 min	ASTM D1238
Mold Shrink, Linear-Flow	0.0030 to 0.0070 in/in	ASTM D955
Mechanical	Nominal Values (English)	Test Method
Tensile Modulus ⁴	306000 psi	ASTM D638
Tensile Strength @ Yield ⁴	3300 psi	ASTM D638
Tensile Strength @ Break ⁴	3300 psi	ASTM D638
Tensile Elongation @ Brk ⁴	45 %	ASTM D638
Flexural Modulus ⁵	327000 psi	ASTM D790
Flexural Strength ⁵	7000 psi	ASTM D790
Impact	Nominal Values (English)	Test Method
Notched Izod Impact (0 °F, 0.125 in) ⁶	1.00 ft-lb/in	ASTM D256
(73 °F, 0.125 in) ⁶	2.30 ft-lb/in	
Gardner Impact (73 °F)	100 in-lb	ASTM D3029
Hardness	Nominal Values (English)	Test Method
Rockwell Hardness (R-Scale)	105	ASTM D785
(L-Scale)	70	
Thermal	Nominal Values (English)	Test Method
DTUL @264psi - Unannealed (0.125 in)	172 °F	ASTM D648
DTUL @66psi - Unannealed (0.125 in)	188 °F	ASTM D648
Vicat Softening Point	217 °F	ASTM D1525
CLTE, Flow (-40 to 180°F (-40 to 82°C))	5.0E-005 in/in/°F	ASTM D696
Ignition Characteristics	Nominal Values (English)	Test Method

Mold Filling Analysis Parameters	Nominal Values (English)	Test Method
Melt Density	0.875 g/cm ³	
Melt Specific Heat	0.434 Btu/lb/°F	ASTM C351
Melt Thermal Conductivity	0.92 BTU-in/hr/ft ² /°F	ASTM C177
No Flow Temperature	266 °F	
Ejection Temperature	203 °F	

Processing Information		
Injection Molding Parameters	Nominal Values (English)	Test Method
Rear Temperature	350 to 450 °F	
Front Temperature	375 to 500 °F	
Mold Temperature	70.0 to 150 °F	
Injection Pressure	5000 to 40000 psi	
Back Pressure	10.0 to 500 psi	
Clamp Tonnage	2.0 to 4.0 tons/in ²	

Notes

- 1 These materials have been tested according to Dow's biocompatibility protocol, which is based on U.S.P. XXIII Class VI guidelines. (Test results relate to resins and not to finished products. Manufacturers of medical devices, equipment and packaging are responsible for determining the suitability of resins for their intended use.)
- 2 When used unmodified for the manufacture of food contact articles, STYRON 478 will comply with Food Additive Regulations FDA 21 CFR 177.1640 under the U.S. Food , Drug and Cosmetic Act. Such uses are subject to good manufacturing practices and any other limitations which are part of the statute or regulations. These should be consulted for complete details.
- 3 Typical properties; not to be construed as specifications.
- 4 Type I, 2 in/min
- 5 Type I, 0.05 in/min
- 6 10 mil notch



Copyright ©, 2003 [IDES "The World's Source for Materials Information"](#)

Copyright ©, 2002 PolyOne Distribution Company The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or the results to be obtained therefrom. The information is based on laboratory work with small-scale equipment and does not necessarily indicate end product performance. Because of the variation in methods, conditions and equipment used commercially in processing these materials, no warranties or guarantees are made as to the suitability of the products for the application disclosed. Full-scale testing and end product performance are the responsibility of the user. PolyOne Distribution Company shall not be liable for and the customer assumes all risk and liability of any use or handling of any material beyond PolyOne Distribution Company's direct control. PolyOne Distribution Company **MAKES NO WARRANTIES, EXPRESS OR IMPLIED, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.** Nothing contained herein is to be considered as permission, recommendations, nor as an inducement to practice any patented invention without permission of the patent owner.

1.800.894.4266

PolyOne Distribution Company

www.PolyOneDistribution.com