



STYRON™ 666D

Americas Styrenics LLC - General Purpose Polystyrene

Wednesday, December 8, 2021

General Information

General

Material Status	• Commercial: Active
Regional Availability	• North America
Features	• Crystal • Medium Flow • Food Contact Acceptable • Medium Heat Resistance
Uses	• Medical/Healthcare Applications • Packaging
Agency Ratings	• FDA 21 CFR 177.1640 • USP Class VI
UL File Number	• E326906
Processing Method	• Extrusion • Injection Molding

ASTM & ISO Properties ¹

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density / Specific Gravity	1.04	1.04	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	8.0 g/10 min	8.0 g/10 min	ASTM D1238
Molding Shrinkage - Flow	4.0E-3 to 7.0E-3 in/in	0.40 to 0.70 %	ASTM D955
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus (Injection Molded)	460000 psi	3170 MPa	ASTM D638
Tensile Strength			ASTM D638
Yield, Injection Molded	6240 psi	43.0 MPa	
Break, Injection Molded	6240 psi	43.0 MPa	
Tensile Elongation (Break, Injection Molded)	3.0 %	3.0 %	ASTM D638
Flexural Modulus (Injection Molded)	504000 psi	3480 MPa	ASTM D790
Flexural Strength (Injection Molded)	8850 psi	61.0 MPa	ASTM D790
Impact	Typical Value (English)	Typical Value (SI)	Test Method
Notched Izod Impact			ASTM D256
73°F (23°C), Injection Molded	0.39 ft-lb/in	21 J/m	
Hardness	Typical Value (English)	Typical Value (SI)	Test Method
Rockwell Hardness (L-Scale)	107	107	ASTM D785
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
66 psi (0.45 MPa), Unannealed	192 °F	89.0 °C	
264 psi (1.8 MPa), Unannealed	180 °F	82.0 °C	
Vicat Softening Temperature	210 °F	99.0 °C	ASTM D1525
CLTE - Flow	5.0E-5 in/in/°F	9.0E-5 cm/cm/°C	ASTM D696
Flammability	Typical Value (English)	Typical Value (SI)	Test Method
Flame Rating	HB	HB	UL 94

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Injection	Typical Value (English)	Typical Value (SI)
Rear Temperature	424 to 480 °F	218 to 249 °C
Middle Temperature	424 to 480 °F	218 to 249 °C
Front Temperature	390 to 415 °F	199 to 213 °C
Nozzle Temperature	415 to 469 °F	213 to 243 °C
Mold Temperature	60 to 150 °F	16 to 66 °C
Injection Rate	Fast	Fast
Back Pressure	29.0 to 174 psi	0.200 to 1.20 MPa
Cushion	0.250 in	6.35 mm
Extrusion	Typical Value (English)	Typical Value (SI)
Cylinder Zone 1 Temp.	351 to 379 °F	177 to 193 °C
Cylinder Zone 2 Temp.	360 to 399 °F	182 to 204 °C
Cylinder Zone 3 Temp.	370 to 410 °F	188 to 210 °C
Cylinder Zone 4 Temp.	390 to 421 °F	199 to 216 °C
Cylinder Zone 5 Temp.	399 to 430 °F	204 to 221 °C
Adapter Temperature	379 to 450 °F	193 to 232 °C
Melt Temperature	379 to 450 °F	193 to 232 °C
Die Temperature	390 to 450 °F	199 to 232 °C

Extrusion Notes

Zone 6 Temperature: 204 to 221°C

Melt Pump, Pipes, Screen Changer Temperature: 193 to 232°C

Polish Rolls Temperature: 66 to 104°C

Head Pressure: 10 to 21 MPa

Notes

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