



STYRON™ 685P

Americas Styrenics LLC - General Purpose Polystyrene

Tuesday, November 5, 2019

General Information

General

Material Status	• Commercial: Active		
Availability	• Latin America	• North America	
Features	• Disposable • Food Contact Acceptable	• High Heat Resistance • High Tensile Strength	
Uses	• Consumer Applications • Electrical/Electronic Applications	• Foam • Medical Devices	• Packaging
Agency Ratings	• FDA 21 CFR 177.1640	• USP Class VI	
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

ASTM & ISO Properties¹

	Nominal Value	Unit	Test Method
Physical			
Density / Specific Gravity	1.04		ASTM D792
Melt Mass-Flow Rate (200°C/5.0 kg)	2.2	g/10 min	ASTM D1238
Molding Shrinkage - Flow	4.0E-3 to 8.0E-3	in/in	ASTM D955
Mechanical			
Tensile Modulus (Injection Molded)	460000	psi	ASTM D638
Tensile Strength (Yield, Injection Molded)	7400	psi	ASTM D638
Tensile Strength (Break, Injection Molded)	7540	psi	ASTM D638
Tensile Elongation (Break, Injection Molded)	3.0	%	ASTM D638
Flexural Modulus (Injection Molded)	470000	psi	ASTM D790
Flexural Strength (Injection Molded)	13100	psi	ASTM D790
Impact			
Notched Izod Impact (73°F, Injection Molded)	0.39	ft·lb/in	ASTM D256
Hardness			
Rockwell Hardness (L-Scale)	107		ASTM D785
Thermal			
Deflection Temperature Under Load (66 psi, Unannealed)	208	°F	ASTM D648
Deflection Temperature Under Load 264 psi, Unannealed			ASTM D648
Vicat Softening Temperature	192	°F	
CLTE - Flow	5.0E-5	in/in/°F	ASTM D696
Flammability			
Flame Rating	HB		UL 94

Processing Information

	Nominal Value	Unit	
Injection			
Rear Temperature	446 to 473	°F	
Middle Temperature	419 to 446	°F	
Front Temperature	392 to 419	°F	
Nozzle Temperature	446 to 473	°F	
Mold Temperature	60 to 150	°F	

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Injection	Nominal Value	Unit
Back Pressure	25.0 to 215	psi
Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	351 to 379	°F
Cylinder Zone 2 Temp.	360 to 399	°F
Cylinder Zone 3 Temp.	370 to 410	°F
Cylinder Zone 4 Temp.	390 to 421	°F
Cylinder Zone 5 Temp.	399 to 430	°F
Melt Temperature	379 to 450	°F
Die Temperature	390 to 450	°F

Extrusion Notes

Zoone 6: 204°C - 221°C

Polish Rolls: 66°C to 104°C

Head Pressure: 10-21 MPa

Notes

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

² Rate B (120°C/h), Loading 1 (10 N)