

STYRON™ 421

High Impact Polystyrene

Americas Styrenics LLC

Message:

STYRON™421 is a high impact polystyrene material. This product is available in North America and is processed by extrusion or injection molding.

STYRON™The main features of the 421 are:

- flame retardant/rated flame
- accessible food
- Good stiffness
- Heat resistance
- Transparency

Typical application areas include:

- electrical appliances
- packing
- Electrical/electronic applications
- food contact applications

General Information	
UL YellowCard	E326906-100171509
Features	Rigid, good
	Good liquidity
	Heat resistance, high
	Compliance of Food Exposure
	Transparent appearance
Uses	Packaging
	Electrical/Electronic Applications
	Electrical appliances
	Home appliance components
Agency Ratings	FDA 21 CFR 177.1640
UL File Number	E326906
Forms	Particle
Processing Method	Extrusion
	Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.04	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	3.9	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.40 - 0.80	%	ASTM D955
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	115		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (Injection Molded)	2200	MPa	ASTM D638

Tensile Strength			ASTM D638
Fracture, injection molding	31.0	MPa	ASTM D638
Injection Molding	34.0	MPa	ASTM D638
Tensile Elongation (Break, Injection Molded)	60	%	ASTM D638
Flexural Modulus (Injection Molded)	2300	MPa	ASTM D790
Flexural Strength (Injection Molded)	43.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			ASTM D256
23°C, molded	77	J/m	ASTM D256
23°C, injection molding	100	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, not annealed	92.0	°C	ASTM D648
1.8 MPa, not annealed	82.0	°C	ASTM D648
Vicat Softening Temperature	103	°C	ASTM D1525
CLTE - Flow	9.0E-5	cm/cm/°C	ASTM D696
Flammability	Nominal Value		Test Method
Flame Rating	HB		UL 94
Injection	Nominal Value	Unit	
Rear Temperature	218 - 249	°C	
Middle Temperature	218 - 249	°C	
Front Temperature	199 - 213	°C	
Nozzle Temperature	213 - 243	°C	
Mold Temperature	15.6 - 65.6	°C	
Injection Rate	Fast		
Back Pressure	0.200 - 1.20	MPa	
Cushion	6.35	mm	
Extrusion	Nominal Value	Unit	
Cylinder Zone 1 Temp.	177 - 193	°C	
Cylinder Zone 2 Temp.	182 - 204	°C	
Cylinder Zone 3 Temp.	188 - 210	°C	
Cylinder Zone 4 Temp.	199 - 216	°C	
Cylinder Zone 5 Temp.	204 - 221	°C	
Adapter Temperature	193 - 232	°C	
Melt Temperature	193 - 232	°C	
Die Temperature	199 - 232	°C	
Extrusion instructions			
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			

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