

STYRON™ 414

High Impact Polystyrene
Americas Styrenics LLC

Message:

STYRON™414 is a high impact polystyrene material. This product is available in North America and is processed by injection molding.

STYRON™The main features of the 414 are:

flame retardant/rated flame

accessible food

Good toughness

Impact resistance

Typical application areas include:

food contact applications

additive/masterbatch

General Information			
Features	Ultra high toughness		
	Impact resistance, high		
	Good liquidity		
	Compliance of Food Exposure		
Uses	Masterbatch		
Agency Ratings	FDA 21 CFR 177.1640		
UL File Number	E326906		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.04	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	13	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.40 - 0.80	%	ASTM D955
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	89		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (Injection Molded)	1500	MPa	ASTM D638
Tensile Strength			ASTM D638
Fracture, injection molding	16.0	MPa	ASTM D638
Injection Molding	19.0	MPa	ASTM D638
Tensile Elongation (Break, Injection Molded)	70	%	ASTM D638
Flexural Modulus (Injection Molded)	1420	MPa	ASTM D790
Flexural Strength (Injection Molded)	24.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			ASTM D256
23°C, molded	94	J/m	ASTM D256
23°C, injection molding	120	J/m	ASTM D256

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, not annealed	83.0	°C	ASTM D648
1.8 MPa, not annealed	70.0	°C	ASTM D648
Vicat Softening Temperature	96.0	°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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