

Generic PS (HIPS)

High Impact Polystyrene

Generic

Message:

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General Information			
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.03 - 1.05	g/cm ³	ASTM D792
23°C	1.04 - 1.05	g/cm ³	ISO 1183
--	1.04	g/cm ³	ASTM D1505
Apparent Density			
--	0.60 - 0.70	g/cm ³	ASTM D1895
--	0.60 - 0.65	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR)			
200°C/5.0 kg	2.4 - 10	g/10 min	ASTM D1238
200°C/5.0 kg	3.0 - 12	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (200°C/5.0 kg)	3.89 - 9.90	cm ³ /10min	ISO 1133
Spiral Flow	43.8 - 57.0	cm	
Molding Shrinkage			
Flow: 23°C	0.45 - 0.61	%	ASTM D955
23°C	0.54 - 0.55	%	ISO 294-4
Water Absorption			
23°C, 24 hr	0.036 - 0.11	%	ASTM D570
23°C, 24 hr	0.10	%	ISO 62
Saturated, 23°C	0.098 - 0.15	%	ASTM D570
Saturated, 23°C	0.088 - 0.11	%	ISO 62
Equilibrium, 23°C	0.099 - 0.10	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.098 - 0.10	%	ISO 62
Bound Styrene	0.1	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			
23°C	46 - 113		ASTM D785
23°C	54 - 101		ISO 2039-2
Ball Indentation Hardness	65.0 - 91.1	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
23°C	1530 - 2460	MPa	ASTM D638

23°C	1400 - 2230	MPa	ISO 527-2
Tensile Strength			
Yield, 23°C	17.1 - 31.2	MPa	ASTM D638
Yield, 23°C	16.0 - 32.6	MPa	ISO 527-2
Fracture, 23°C	18.3 - 28.3	MPa	ASTM D638
Fracture, 23°C	19.7 - 30.8	MPa	ISO 527-2
23°C	19.9 - 31.4	MPa	ASTM D638
Tensile Elongation			
Yield, 23°C	1.4 - 61	%	ASTM D638
Yield, 23°C	1.5 - 1.8	%	ISO 527-2
Fracture, 23°C	27 - 63	%	ASTM D638
Fracture, 23°C	28 - 61	%	ISO 527-2
Flexural Modulus			
23°C	1330 - 2630	MPa	ASTM D790
23°C	1900 - 2430	MPa	ISO 178
Flexural Strength			
23°C	31.7 - 53.7	MPa	ASTM D790
23°C	31.3 - 51.3	MPa	ISO 178
Yield, 23°C	29.4 - 53.7	MPa	ASTM D790
Fracture, 23°C	29.0 - 78.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	4.8 - 11	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength (23°C)	4.9 - 120	kJ/m ²	ISO 179
Notched Izod Impact			
23°C	62 - 150	J/m	ASTM D256
23°C	2.0 - 12	kJ/m ²	ISO 180
Unnotched Izod Impact (23°C)	53 - 810	J/m	ASTM D256
Dart Drop Impact (23°C)	10.2 - 18.3	J	ASTM D3029
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	74.7 - 96.9	°C	ASTM D648
0.45 MPa, annealed	86.9 - 93.9	°C	ASTM D648
0.45 MPa, annealed	84.8 - 89.0	°C	ISO 75-2/B
1.8 MPa, not annealed	70.9 - 87.5	°C	ASTM D648
1.8 MPa, not annealed	67.8 - 85.4	°C	ISO 75-2/A
1.8 MPa, annealed	80.9 - 98.9	°C	ASTM D648
1.8 MPa, annealed	76.6 - 94.1	°C	ISO 75-2/A
Vicat Softening Temperature			
--	84.3 - 105	°C	ASTM D1525
--	81.4 - 100	°C	ISO 306
CLTE - Flow			
--	8.9E-5 - 9.1E-5	cm/cm/°C	ASTM D696

--	8.0E-5 - 1.0E-4	cm/cm/°C	ISO 11359-2
Thermal Conductivity (23°C)	0.17	W/m/K	ISO 8302
RTI Imp	50.0 - 50.3	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			
--	1.0E+3 - 1.0E+16	ohms	ASTM D257
--	1.0E+13 - 1.5E+15	ohms	IEC 60093
Volume Resistivity			
23°C	50 - 1.3E+16	ohms · cm	ASTM D257
23°C	1.0E+15 - 1.0E+18	ohms · cm	IEC 60093
Dielectric Strength			
23°C	16 - 160	kV/mm	ASTM D149
23°C	49 - 160	kV/mm	IEC 60243-1
Dielectric Constant			
23°C	2.50 - 2.60		ASTM D150
23°C	2.50		IEC 60250
Dissipation Factor (23°C)	3.0E-4 - 4.1E-4		IEC 60250
Comparative Tracking Index	393 - 505	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Glow Wire Ignition Temperature	650 - 960	°C	IEC 60695-2-13
Optical	Nominal Value		Test Method
Gardner Gloss	14 - 98		ASTM D523
Injection	Nominal Value	Unit	
Drying Temperature	69.5 - 82.4	°C	
Drying Time	1.4 - 3.0	hr	
Suggested Max Moisture	0.010 - 0.021	%	
Rear Temperature	169 - 235	°C	
Middle Temperature	188 - 251	°C	
Front Temperature	199 - 272	°C	
Nozzle Temperature	204 - 228	°C	
Processing (Melt) Temp	203 - 250	°C	
Mold Temperature	34.4 - 60.6	°C	
Injection Pressure	84.2 - 155	MPa	
Back Pressure	0.258 - 44.1	MPa	
Screw Speed	45 - 47	rpm	
Injection instructions			
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Extrusion	Nominal Value	Unit	
Drying Temperature	70.0 - 70.3	°C	
Drying Time	1.5	hr	
Cylinder Zone 1 Temp.	180 - 185	°C	

Cylinder Zone 2 Temp.	193 - 200	°C
Cylinder Zone 3 Temp.	199 - 220	°C
Cylinder Zone 4 Temp.	208 - 221	°C
Cylinder Zone 5 Temp.	212 - 213	°C
Adapter Temperature	213	°C
Melt Temperature	212 - 225	°C
Die Temperature	202 - 216	°C

Extrusion instructions

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