

Technical Data Sheet

Polyflam SDR 5005

General Purpose Polystyrene
LyondellBasell Industries
Engineering Plastics

Product Description

Flame retardant PS standard grade, without PBDE and HBCD, free of antimony

General

Features	• Antimony Free	• Flame Retardant
UL File Number	• E86615	
Processing Method	• Injection Molding	

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.06 g/cm ³	1.06 g/cm ³	ISO 1183/A
Melt Volume-Flow Rate (MVR) (200°C/5.0 Kg)	13 cm ³ /10min	13 cm ³ /10min	ISO 1133

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	370000 psi	2550 MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	4790 psi	33.0 MPa	ISO 527-2/1A/50
Break	3920 psi	27.0 MPa	ISO 527-2/50
Tensile Strain (Yield)	1.6 %	1.6 %	ISO 527-2/1A/50
Nominal Tensile Strain at Break	35 %	35 %	ISO 527-2/50
Flexural Modulus ¹	392000 psi	2700 MPa	ISO 178
Flexural Stress ¹			ISO 178
5.3% Strain	7250 psi	50.0 MPa	
3.5% Strain	7110 psi	49.0 MPa	

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	2.4 ft·lb/in ²	5.0 kJ/m ²	
73°F (23°C)	3.3 ft·lb/in ²	7.0 kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	29 ft·lb/in ²	60 kJ/m ²	
73°F (23°C)	33 ft·lb/in ²	70 kJ/m ²	

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 Psi (0.45 Mpa), Unannealed	174 °F	79.0 °C	ISO 75-2/Bf
264 Psi (1.8 Mpa), Unannealed	163 °F	73.0 °C	ISO 75-2/Af
Vicat Softening Temperature			
--	185 °F	85.0 °C	ISO 306/B50
--	198 °F	92.0 °C	ISO 306/A50
RTI Elec			UL 746B
0.06 In (1.5 Mm)	122 °F	50.0 °C	
0.12 In (3.0 Mm)	122 °F	50.0 °C	
RTI Imp			UL 746B
0.06 In (1.5 Mm)	122 °F	50.0 °C	
0.12 In (3.0 Mm)	122 °F	50.0 °C	
RTI Str			UL 746B
0.06 In (1.5 Mm)	122 °F	50.0 °C	
0.12 In (3.0 Mm)	122 °F	50.0 °C	

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Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	> 1.0E+15 ohms	> 1.0E+15 ohms	IEC 60093
Volume Resistivity	> 1.0E+13 ohms·m	> 1.0E+13 ohms·m	IEC 62631-3-1
Comparative Tracking Index	375 V	375 V	IEC 60112
High Amp Arc Ignition (HAI)			UL 746A
0.06 In (1.5 Mm)	PLC 1	PLC 1	
0.12 In (3.0 Mm)	PLC 1	PLC 1	
Hot-wire Ignition (HWI)			UL 746A
0.06 In (1.5 Mm)	PLC 3	PLC 3	
0.12 In (3.0 Mm)	PLC 2	PLC 2	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Burning Rate			
0.0787 In (2.00 Mm), Self-extinguishing	0.0 in/min	0.0 mm/min	ISO 3795
0.0787 In (2.00 Mm), Self-extinguishing	0.0 in/min	0.0 mm/min	FMVSS 302
Flame Rating			UL 94 IEC 60695-11-10, -20
0.06 In (1.5 Mm)	V-2	V-2	
0.12 In (3.0 Mm)	V-2	V-2	
Glow Wire Flammability Index			IEC 60695-2-12
0.06 In (1.5 Mm)	1760 °F	960 °C	
0.12 In (3.0 Mm)	1760 °F	960 °C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.06 In (1.5 Mm)	1560 °F	850 °C	
0.12 In (3.0 Mm)	1250 °F	675 °C	
Oxygen Index	25 %	25 %	ISO 4589-2

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Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	158 to 176 °F	70 to 80 °C
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr
Processing (Melt) Temp	356 to 410 °F	180 to 210 °C
Mold Temperature	86 to 140 °F	30 to 60 °C
Injection Rate	Slow-Moderate	Slow-Moderate
Back Pressure	725 to 1450 psi	5.00 to 10.0 MPa
Screw Speed	< 591 in/min	< 15 m/min

Injection Notes

Mould surface contacting melt should
be of non-corrosive steel (content of chrome > 12%)

Notes

¹ 0.079 in/min (2.0 mm/min)

Notes

These are typical property values not to be construed as specification limits.