

Technical Data Sheet

Polyflam HSF 33 E

General Purpose Polystyrene
LyondellBasell Industries
Engineering Plastics

Product Description

Flame-retardant PS grade; without PBDE

General

Features	• Flame Retardant	• High Viscosity
UL File Number	• E86615	
Processing Method	• Extrusion	• Injection Molding

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.22 g/cm ³	1.22 g/cm ³	ISO 1183/A
Melt Volume-Flow Rate (MVR) (200°C/5.0 Kg)	2.0 cm ³ /10min	2.0 cm ³ /10min	ISO 1133

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	305000 psi	2100 MPa	ISO 527-1/1A/1
Tensile Stress (Yield)	4060 psi	28.0 MPa	ISO 527-2/1A/50
Tensile Strain (Yield)	2.5 %	2.5 %	ISO 527-2/1A/50

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	0.95 ft·lb/in ²	2.0 kJ/m ²	
73°F (23°C)	3.8 ft·lb/in ²	8.0 kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	11 ft·lb/in ²	24 kJ/m ²	
73°F (23°C)	19 ft·lb/in ²	40 kJ/m ²	

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 Psi (0.45 Mpa), Unannealed	190 °F	88.0 °C	ISO 75-2/Bf
264 Psi (1.8 Mpa), Unannealed	172 °F	78.0 °C	ISO 75-2/Af
Vicat Softening Temperature			
--	192 °F	89.0 °C	ISO 306/B50
--	219 °F	104 °C	ISO 306/A50
Ball Pressure Test (176°F (80°C))	Pass	Pass	IEC 60695-10-2
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	

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	500 V	500 V	IEC 60112

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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
0.06 In (1.5 Mm)	V-0	V-0	IEC 60695-11-10, -20
0.12 In (3.0 Mm)	V-0	V-0	
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)	1160 °F	625 °C	
0.12 In (3.0 Mm)	1160 °F	625 °C	
Oxygen Index	27 %	27 %	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	374 to 428 °F	190 to 220 °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	< 709 in/min	< 18 m/min

Injection Notes

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

Notes

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