

Technical Data Sheet



Polyflam HSF 33 E

General Purpose Polystyrene
LyondellBasell Industries
Engineering Plastics

Product Description

Flame-retardant PS grade; without PBDE

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
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.

Processing Techniques

Specific recommendations for resin type and processing conditions can only be made when the end use, required properties and fabrication equipment are known.

Product Storage and Handling

- Product should be stored in dry conditions at temperatures below 50°C and protected from UV-light
- Improper storage may bring damage to the packaging and can negatively affects on the quality of this product
- Keep material completely dry for good processing

Company Information

For further information regarding the LyondellBasell company, please visit <http://www.lyb.com/>.

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