

Technical Data Sheet

Polyflam SDR 5005 NAT



Polystyrene, General Purpose

Product Description

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

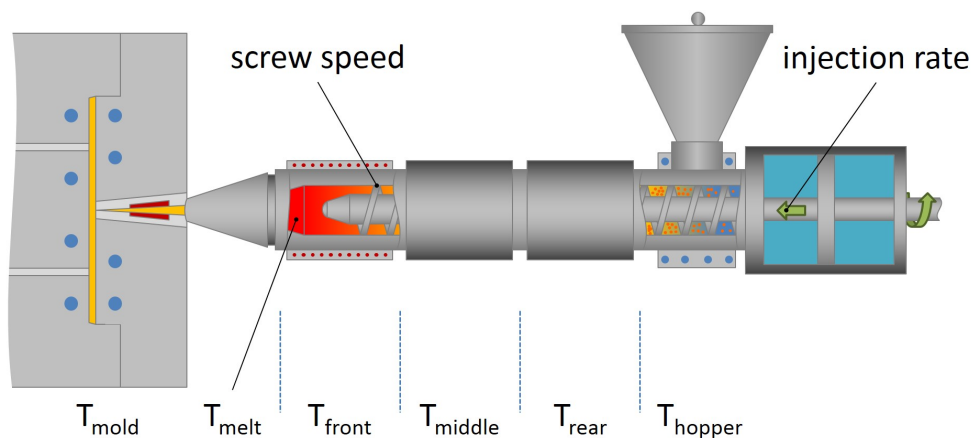
Regulatory Status

For regulatory compliance information, see Polyflam SDR 5005 NAT [Product Stewardship Bulletin \(PSB\)](#) and [Safety Data Sheet \(SDS\)](#).

Status	Commercial: Active
Availability	Africa-Middle East; Asia-Pacific; Europe; Latin America; North America
Processing Method	Injection Molding
Attribute	Antimony Free
Additive	Flame Retardant

Typical Properties	Nominal Value	Units	Test Method
Physical			
Melt Volume Flow Rate, (200 °C/5.0 kg)	13	cm ³ /10 min	ISO 1133
Density, (Method A)	1.06	g/cm ³	ISO 1183
Mechanical			
Tensile Stress at Yield, (Type 1A, 50 mm/min)	33.0	MPa	ISO 527-2
Nominal Tensile Strain at Break, (50 mm/min)	35	%	ISO 527-2
Flexural Modulus, (2.0 mm/min)	2700	MPa	ISO 178
Tensile Strain at Yield, (Type 1A, 50 mm/min)	1.6	%	ISO 527-2
Tensile Stress at Break, (50 mm/min)	27.0	MPa	ISO 527-2
Tensile Modulus, (1 mm/min, Type 1A)	2550	MPa	ISO 527-1
Flexural Stress			
(2.0 mm/min, 3.5%)	49.0	MPa	ISO 178
(2.0 mm/min, 5.3%)	50.0	MPa	ISO 178
Impact			
Charpy Impact Strength - Notched			
(23 °C, Type 1, Edgewise, Notch A)	7.0	kJ/m ²	ISO 179
(-30 °C, Type 1, Edgewise, Notch A)	5.0	kJ/m ²	ISO 179
Charpy Impact Strength - Unnotched			
(23 °C, Type 1, Edgewise)	70	kJ/m ²	ISO 179
(-30 °C, Type 1, Edgewise)	60	kJ/m ²	ISO 179
Thermal			
Vicat Softening Temperature			
(B (50N), 50 °C/h)	85.0	°C	ISO 306
(A (10N), 50 °C/h)	92.0	°C	ISO 306
Deflection Temperature Under Load Unannealed (0.45 MPa), (Flatwise)	79.0	°C	ISO 75-2/B
Deflection Temperature Under Load Unannealed (1.80 MPa), (Flatwise)	73.0	°C	ISO 75-2/A

RTI Elec			
(1.5 mm)	50.0	°C	UL 746B
(3.0 mm)	50.0	°C	UL 746B
RTI Imp			
(1.5 mm)	50.0	°C	UL 746B
(3.0 mm)	50.0	°C	UL 746B
RTI Str			
(1.5 mm)	50.0	°C	UL 746B
(3.0 mm)	50.0	°C	UL 746B
Electrical			
Volume Resistivity	>1.0E+13	ohm*m	IEC 62631-3-1
Comparative Tracking Index (CTI)	375	V	IEC 60112
High Amp Arc Ignition			UL 746A
Surface Resistivity	>1.0E+15	ohm	IEC 60093
Flammable			
Hot-wire Ignition (HWI)			UL 746A
Burning Rate			
(2.00 mm, Self-Extinguishing)	0.0	mm/min	FMVSS 302
(2.00 mm, Self-Extinguishing)	0.0	mm/min	ISO 3795
Glow Wire Flammability Index			
(1.5 mm)	960	°C	IEC 60695-2-12
(3.0 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			
(1.5 mm)	850	°C	IEC 60695-2-13
(3.0 mm)	675	°C	IEC 60695-2-13
Oxygen Index	25	%	ISO 4589-2
UL Information			
Flame Rating			
(1.5 mm)	V-2		UL 94
(3.0 mm)	V-2		UL 94
Flammability Classification			
(1.5 mm)	V-2		IEC 60695-11-10, -20
(3.0 mm)	V-2		IEC 60695-11-10, -20
UL File Number	E86615		



Injection Parameters	Nominal Value	Units
Drying Time	2.0 to 4.0	hr
Drying Temperature	70 to 80	°C
Screw Speed	<250	mm/sec
Processing (Melt) Temp	180 to 210	°C
Injection Rate	Slow-Moderate	
Back Pressure	5.00 to 10.0	MPa
Mold Temperature	30 to 60	°C

Notes

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

Processing notes

Melt contacting surfaces should be made of a high quality, corrosive resistant steel. Positive experiences have been made with steel qualities containing > 12% chromium.

Avoid processing at very barrel high temperatures or above the recommended melt temperature range as this can increase risk of deposit onto the tool surfaces. Avoid long residence times. At start and end of production, it is recommended to purge clean with non-flame retardant polymer or a polyolefin.

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.

Company Information

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

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