Technical Data Sheet

Polyflam SDR 5000 NAT

Polystyrene, High Impact

Product Description

Flame-retardant high impact polystyrene (HIPS) without PBDE; without HBCD.

Processing Method	Injection Molding
Attribute	Good Flow; Good Processability; High Impact Resistance
Additive	Flame Retardant

Typical Properties	Nominal Value	Units	Test Method
Physical			
Melt Volume Flow Rate, (200 °C/5.0 kg)	13	cm³/10 min	ISO 1133
Density, (Method A)	1.08	g/cm³	ISO 1183
Mechanical			
Tensile Stress at Yield, (Type 1A, 50 mm/min)	28.0	MPa	ISO 527-2
Tensile Strain at Yield, (Type 1A, 50 mm/min)	1.7	%	ISO 527-2
Tensile Modulus, (1 mm/min, Type 1A)	2400	MPa	ISO 527-1
Impact			
Charpy Impact Strength - Notched			
(23 °C, Type 1, Edgewise, Notch A)	5.0	kJ/m²	ISO 179
(-30 °C, Type 1, Edgewise, Notch A)	3.0	kJ/m²	ISO 179
Charpy Impact Strength - Unnotched			
(23 °C, Type 1, Edgewise)	60	kJ/m²	ISO 179
(-30 °C, Type 1, Edgewise)	41	kJ/m²	ISO 179
Hardness			
Ball Pressure Test, (80 °C)	Pass		IEC 60695-10-2
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)	78.0	°C	ISO 75-2/B
Deflection Temperature Under Load Unannealed (1.80 MPa), (Flatwise)	70.0	°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)	650	°C	IEC 60695-2-13
(3.0 mm)	650	°C	IEC 60695-2-13
Oxygen Index	24	%	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