Technical Data Sheet

Polyflam SDR 5005 NAT

Polystyrene, General Purpose

Product Description

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

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	cm³/10 min	ISO 1133
Density, (Method A)	1.06	g/cm³	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/m²	ISO 179
(-30 °C, Type 1, Edgewise, Notch A)	5.0	kJ/m²	ISO 179
Charpy Impact Strength - Unnotched			
(23 °C, Type 1, Edgewise)	70	kJ/m²	ISO 179
(-30 °C, Type 1, Edgewise)	60	kJ/m²	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