Starflam® AFR450X2

Ascend Performance Materials Operations LLC - *Polyamide 66*

General Information

Product Description			
Starflam AFR450X2 is a 25% glass filled, red phosphorous flame retardant PA66 for injection molded applications.			
General			
Material Status	• Commercial: Active		
Availability	• Europe	• North America	
Filler / Reinforcement	• Glass Fiber, 25% Filler by Weight		
Additive	• Flame Retardant	• Heat Stabilizer	• Mold Release
Features	• Flame Retardant	• Halogen Free	• Heat Stabilized
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA66-GF25 FR		

Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.38	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.0	--	%	
Flow : 73°F, 0.0787 in	0.50	--	%	
Water Absorption (24 hr, 73°F)	1.0	--	%	ISO 62
Water Absorption (Saturation, 73°F)	6.0	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	1.7	--	%	ISO 62
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (73°F)	1.25E+6	812000	psi	ISO 527-1
Tensile Stress (Break, 73°F)	20200	13100	psi	ISO 527-2
Tensile Strain (Break, 73°F)	2.6	4.8	%	ISO 527-2
Flexural Modulus (73°F)	1.19E+6	740000	psi	ISO 178
Flexural Stress (73°F)	29400	17300	psi	ISO 178
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-40°F	3.5	3.3	ft·lb/in²	
-22°F	3.7	3.7	ft·lb/in²	
73°F	5.2	6.7	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-40°F	28	27	ft·lb/in²	
-22°F	29	28	ft·lb/in²	
73°F	32	34	ft·lb/in²	
Notched Izod Impact Strength				ISO 180/1A
-40°F	3.5	3.2	ft·lb/in²	
-22°F	3.5	3.5	ft·lb/in²	
73°F	4.6	6.2	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load (66 psi, Unannealed)	496	493	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	462	437	°F	ISO 75-2/A
Melting Temperature	502	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	1.6E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	5.0E-5	--	in/in/°F	ISO 11359-2

RTI Elec				UL 746B
0.030 in	230	--	°F	
0.06 in	230	--	°F	
0.12 in	230	--	°F	
RTI Imp				UL 746B
0.030 in	230	--	°F	
0.06 in	230	--	°F	
0.12 in	230	--	°F	
RTI Str				UL 746B
0.030 in	239	--	°F	
0.06 in	239	--	°F	
0.12 in	248	--	°F	

Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Surface Resistivity (0.0394 in)	1.0E+16	--	ohms	IEC 62631-3-2
Volume Resistivity (0.0394 in)	1.0E+15	--	ohms·cm	IEC 60093
Electric Strength (0.0394 in)	610	560	V/mil	IEC 60243-1
Comparative Tracking Index (0.118 in)	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746A
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
Hot-wire Ignition (HWI)				UL 746A
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		

Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating				UL 94
0.030 in	V-2	--		
0.06 in	V-0	--		
0.12 in	V-0	--		

Processing Information

Injection	**Dry**	**Unit**
Drying Temperature	167 to 185	°F
Drying Time	4.0	hr
Suggested Max Moisture	0.10	%
Rear Temperature	527 to 545	°F
Middle Temperature	527 to 545	°F
Front Temperature	518 to 545	°F
Processing (Melt) Temp	527 to 545	°F
Mold Temperature	140 to 194	°F