Starflam® P10002E

Ascend Performance Materials Operations LLC - *Polyamide 6*

General Information

Product Description

Starflam P10002E is an unfilled, flame retardant PA6 for injection molded applications. The material is halogen free and red phosphorus free.

General			
Material Status	• Commercial: Active		
Availability	• Europe	• North America	
Additive	• Flame Retardant	• Heat Stabilizer	• Mold Release
Features	• Bromine Free • Flame Retardant	• Halogen Free • Heat Stabilized	
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA6 FR		

Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.17	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.2	--	%	
Flow : 73°F, 0.0787 in	1.3	--	%	
Water Absorption (24 hr, 73°F)	2.2	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	2.1	--	%	ISO 62
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (73°F)	508000	203000	psi	ISO 527-1
Tensile Stress (Yield, 73°F)	11300	6240	psi	ISO 527-2
Tensile Strain (Break, 73°F)	5.5	32	%	ISO 527-2
Flexural Modulus (73°F)	566000	174000	psi	ISO 178
Flexural Stress (73°F)	15700	4210	psi	ISO 178
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-40°F	1.0	1.5	ft·lb/in²	
-22°F	1.9	1.9	ft·lb/in²	
73°F	1.7	4.8	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-40°F	20	47	ft·lb/in²	
-22°F	22	37	ft·lb/in²	
73°F	28 ft·lb/in²	No Break		
Notched Izod Impact Strength				ISO 180/1A
-40°F	0.95	1.8	ft·lb/in²	
-22°F	1.3	2.2	ft·lb/in²	
73°F	1.9	3.1	ft·lb/in²	
Unnotched Izod Impact Strength (73°F)	29	--	ft·lb/in²	ISO 180/1U
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load (66 psi, Unannealed)	345	351	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	167	196	°F	ISO 75-2/A
Melting Temperature	435	--	°F	ISO 11357-3
RTI Elec				UL 746B

0.030 in	248	--	°F	
0.06 in	248	--	°F	
0.12 in	248	--	°F	
RTI Imp				UL 746B
0.030 in	149	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746B
0.030 in	185	--	°F	
0.06 in	185	--	°F	
0.12 in	185	--	°F	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Electric Strength (0.0394 in)	690	690	V/mil	IEC 60243-1
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) (0.030 in)	PLC 4	--		UL 746A
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating				UL 94
0.016 in	V-0	--		
0.030 in	V-0	--		
0.06 in	V-0	--		
0.12 in	V-0	--		
Glow Wire Flammability Index (0.030 in)	1760	--	°F	IEC 60695-2-12
Glow Wire Ignition Temperature (0.030 in)	1340	--	°F	IEC 60695-2-13
Oxygen Index [2]	35	--	%	ISO 4589-2
Smoke Density [2]	92	--	Ds	ISO 5659-2
Smoke Toxicity [2]	0.62	--	CIT NLP	NF X 70-100-1/2
Additional Information	**Dry**	**Conditioned**	**Unit**	**Test Method**
Railway Classification [2]				EN 45545-2
R22	HL3	--		
R23	HL3	--		

Processing Information

Injection	**Dry**	**Unit**
Drying Temperature	167 to 185	°F
Drying Time	4.0	hr
Suggested Max Moisture	0.20	%
Rear Temperature	446 to 464	°F
Middle Temperature	455 to 473	°F
Front Temperature	464 to 500	°F
Processing (Melt) Temp	464 to 500	°F
Mold Temperature	140 to 176	°F

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Railway Application