Starflam® P10002E

Polyamide 6

Ascend Performance Materials Operations LLC

PROSPECTOR®
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Technical Data

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		
UL Yellow Card [1]	• E340012-104537924 • E70062-104537263 • E340012-104537923 • E70062-104537262		
Search for UL Yellow Card	• Ascend Performance Materials Operations LLC • Starflam®		
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		

Physical	Dry	Conditioned	Unit	Test Method
Density	1.17	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	1.2	--	%	
Flow : 23°C, 2.00 mm	1.3	--	%	
Water Absorption				ISO 62
24 hr, 23°C	2.2	--	%	
Equilibrium, 23°C, 50% RH	2.1	--	%	
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (23°C)	3500	1400	MPa	ISO 527-1
Tensile Stress (Yield, 23°C)	78.0	43.0	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	5.5	32	%	ISO 527-2
Flexural Modulus (23°C)	3900	1200	MPa	ISO 178
Flexural Stress (23°C)	108	29.0	MPa	ISO 178
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-40°C	2.2	3.1	kJ/m²	
-30°C	3.9	4.0	kJ/m²	
23°C	3.5	10	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-40°C	41	98	kJ/m²	
-30°C	47	78	kJ/m²	
23°C	58 kJ/m²	No Break		
Notched Izod Impact Strength				ISO 180/1A
-40°C	2.0	3.8	kJ/m²	
-30°C	2.7	4.6	kJ/m²	
23°C	3.9	6.5	kJ/m²	
Unnotched Izod Impact Strength (23°C)	60	--	kJ/m²	ISO 180/1U
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load				
0.45 MPa, Unannealed	174	177	°C	ISO 75-2/B
1.8 MPa, Unannealed	75.0	91.0	°C	ISO 75-2/A

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Thermal	Dry	Conditioned	Unit	Test Method
Melting Temperature	224	--	°C	ISO 11357-3
RTI Elec				UL 746B
0.75 mm	120	--	°C	
1.5 mm	120	--	°C	
3.0 mm	120	--	°C	
RTI Imp				UL 746B
0.75 mm	65.0	--	°C	
1.5 mm	75.0	--	°C	
3.0 mm	75.0	--	°C	
RTI Str				UL 746B
0.75 mm	85.0	--	°C	
1.5 mm	85.0	--	°C	
3.0 mm	85.0	--	°C	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Electric Strength (1.00 mm)	27	27	kV/mm	IEC 60243-1
High Amp Arc Ignition (HAI)				UL 746A
0.75 mm	PLC 0	--		
1.5 mm	PLC 0	--		
3.0 mm	PLC 0	--		
Hot-wire Ignition (HWI) (0.75 mm)	PLC 4	--		UL 746A
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating				UL 94
0.40 mm	V-0	--		
0.75 mm	V-0	--		
1.5 mm	V-0	--		
3.0 mm	V-0	--		
Glow Wire Flammability Index (0.75 mm)	960	--	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (0.75 mm)	725	--	°C	IEC 60695-2-13
Oxygen Index [3]	35	--	%	ISO 4589-2
Smoke Density [3]	92	--	Ds	ISO 5659-2
Smoke Toxicity [3]	0.62	--	CIT NLP	NF X 70-100-1/2
Additional Information	**Dry**	**Conditioned**	**Unit**	**Test Method**
Railway Classification [3]	HL3 R22/R23	--		EN 45545-2

Injection	Dry Unit
Drying Temperature	75 to 85 °C
Drying Time	4.0 hr
Suggested Max Moisture	0.20 %
Rear Temperature	230 to 240 °C
Middle Temperature	235 to 245 °C
Front Temperature	240 to 260 °C
Processing (Melt) Temp	240 to 260 °C
Mold Temperature	60 to 80 °C

Notes

[1] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

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

[3] Railway Application

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Where to Buy

Supplier

Ascend Performance Materials Operations LLC
Houston, Houston USA
Telephone: 888-927-2363
Web: http://www.ascendmaterials.com/

Distributor

Chase Plastic Services, Inc.
Chase Plastics Services is a North American distributor with representatives throughout the region. Please find your rep here: http://www.chaseplastics.com/contact/locations
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Availability: North America

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