Vydyne® 25WSP

Ascend Performance Materials Operations LLC - *Polyamide 66*

General Information

Product Description

Vydyne 25WSP is a weather-resistant injection-molding grade PA66 resin meeting MIL Spec criteria. This resin offers a well-balanced combination of engineering properties characterized by high strength, rigidity, good toughness, high melt point, good surface lubricity and abrasion resistance. 25WSP maintains the chemical resistance typical of PA66 to many chemicals, machine and motor oils, solvents and gasoline.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Additive	• Lubricant		
Features	• Abrasion Resistant • Chemical Resistant • Ductile • Fast Molding Cycle • Gasoline Resistant	• General Purpose • Good Mold Release • Good Toughness • Good Weather Resistance • High Rigidity	• High Strength • Lubricated • Oil Resistant • Solvent Resistant
Agency Ratings	• ASTM D4066 PA0191	• ASTM D6779 PA0191	• MIL M-20693B
Automotive Specifications	• FRANKLIN PRECISION PA66	• STELLANTIS MS-DB-41 CPN2017	• TOYOTA TSM 5516G Color: Class 2, Rev 9
UL File Number	• E70062		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA66		

Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.4	--	%	
Flow : 73°F, 0.0787 in	1.6	--	%	
Water Absorption (24 hr, 73°F)	1.2	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	2.4	--	%	ISO 62
Outdoor Suitability	f1	--		UL 746C
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (73°F)	493000	232000	psi	ISO 527-1
Tensile Stress (Yield, 73°F)	12000	11200	psi	ISO 527-2
Tensile Strain (Yield, 73°F)	4.5	25	%	ISO 527-2
Tensile Strain (Break, 73°F)	20	60	%	ISO 527-2
Flexural Modulus (73°F)	450000	203000	psi	ISO 178
Flexural Stress (73°F)	12600	3190	psi	ISO 178
Poisson's Ratio (73°F)	0.40	--		ISO 527-2
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	2.3	--	ft·lb/in²	
73°F	2.9	--	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	No Break	--		
73°F	No Break	--		
Notched Izod Impact Strength (73°F)	2.9	--	ft·lb/in²	ISO 180/1A
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**

Deflection Temperature Under Load (66 psi, Unannealed)	437	--	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	158	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	5.6E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	6.1E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746B
0.030 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746B
0.030 in	167	--	°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)	660	--	V/mil	IEC 60243-1
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
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	--		
High Voltage Arc Tracking Rate (HVTR) (0.118 in)	PLC 0	--		UL 746A
Hot-wire Ignition (HWI)				UL 746A
0.030 in	PLC 4	--		
0.06 in	PLC 3	--		
0.12 in	PLC 2	--		
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating				UL 94
0.030 in	V-2	--		
0.06 in	V-2	--		
0.12 in	V-2	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.030 in	1560	--	°F	
0.06 in	1610	--	°F	
0.12 in	1760	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1290	--	°F	
0.06 in	1290	--	°F	
0.12 in	1340	--	°F	
Oxygen Index				ISO 4589-2
--	23	--	%	
-- [2]	23	--	%	

Processing Information

Injection	**Dry**	**Unit**
Drying Temperature	158	°F
Drying Time	1.0 to 3.0	hr
Rear Temperature	500 to 536	°F
Middle Temperature	518 to 545	°F
Front Temperature	536 to 554	°F
Nozzle Temperature	536 to 572	°F
Processing (Melt) Temp	545 to 572	°F
Mold Temperature	149 to 203	°F