



Vydyne® 25WSP

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne 25WSP is a black, weather-resistant injection-molding grade PA66 resin. 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. Vydyne 25WSP maintains the chemical resistance typical of PA66 to many chemicals, machine and motor oils, solvents and gasoline.

Weather resistance is obtained by incorporating finely divided, well-dispersed carbon black particles in the PA66 matrix. While the presence of carbon black usually increases brittleness, this resin has been formulated to minimize loss of ductility properties such as elongation and Izod impact strength. As a result, parts molded from 25WSP frequently exhibit higher ductility and practical toughness compared with other black, weather-resistant, non-impact-modified PA66 molded parts.

Vydyne 25WSP resin is internally and externally lubricated for improved machine feed and exceptional mold release. Vydyne 25WSP is intended for use in high-productivity applications. In many applications, the molding cycle can be reduced because molded parts may be removed from the cavity at higher temperatures. In difficult molds where parts have a tendency to stick in the cavity, Vydyne 25WSP can reduce or eliminate the need for mold release sprays. Critical molded part dimensions should be checked against specifications before implementing shorter molding cycles on a routine production basis.

Typical Applications/End Uses:

Lubricated for machine feed and mold release, Vydyne 25WSP provides very good flow and easy moldability. Typical applications include cable ties/tie straps, where its combination of easy flow, good ductility and high tensile strength is particularly attractive, and a wide variety of electrical/electronic and miscellaneous applications requiring weather resistance.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Additive	• Carbon Black	• Lubricant	
Features	• Abrasion Resistant • Chemical Resistant • Fast Molding Cycle • Gasoline Resistant • General Purpose	• Good Mold Release • Good Toughness • Good Weather Resistance • High Rigidity • High Strength	• Lubricated • Oil Resistant • Solvent Resistant
Uses	• Electrical/Electronic Applications	• Fasteners	• General Purpose
Agency Ratings	• ASTM D4066 PA0191 • ASTM D6779 PA0191	• MIL M-20693B • UL f1	
Automotive Specifications	• CHRYSLER MS-DB-41 CPN2017	• GM GMP.PA66.030	
UL File Number	• E70062		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm ³	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

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Physical	Dry	Conditioned	Unit	Test Method
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.4	--	%	
Outdoor Suitability (Black)	f1	--		UL 746C
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	493000	225000	psi	ISO 527-2
Tensile Stress (Yield, 73°F)	12000	11200	psi	ISO 527-2
Tensile Strain (Yield, 73°F)	4.5	25	%	ISO 527-2
Nominal Tensile Strain at Break				ISO 527-2
73°F	20	60	%	
Flexural Modulus (73°F)	450000	203000	psi	ISO 178
Flexural Strength (73°F)	12600	3190	psi	ISO 178
Flexural Stress (73°F)	12600	3190	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	2.3	--	ft-lb/in ²	
73°F	2.9	--	ft-lb/in ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	No Break	--		
73°F	No Break	--		
Notched Izod Impact Strength				ISO 180
73°F	2.9	--	ft-lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	437	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	158	--	°F	
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 746
0.030 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746
0.030 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746
0.030 in	185	--	°F	
0.06 in	185	--	°F	
0.12 in	185	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Dielectric Strength (0.0394 in)	660	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	600	--	V	

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Electrical	Dry	Conditioned	Unit	Test Method
High Amp Arc Ignition (HAI)				UL 746
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 0	--		UL 746
Hot-wire Ignition (HWI)				UL 746
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	23	--	%	ISO 4589-2

Processing Information

Injection	Dry	Unit
Drying Temperature	< 158	°F
Drying Time	1.0 to 3.0	hr
Suggested Max Regrind	50	%
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

Notes

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