

Ascend Performance Materials Vydne® 25WSP Nylon 66, Dry as Molded

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Unreinforced

Material Notes:

Vydne® 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. Vydne 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 25 WSP frequently exhibit higher ductility and practical toughness compared with other black, weather-resistant, non-impact-modified PA66 molded parts. Vydne 25WSP resin is internally and externally lubricated for improved machine feed and exceptional mold release. Vydne 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. Vydne 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, Vydne 25 WSP 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. Availability: Asia Pacific Europe North America Additive: Carbon Black Lubricant Features: Ductile Gasoline Resistance Good Abrasion Resistance Good Chemical Resistance Good Flow Good Mold Release Good Toughness Good Weather Resistance High Rigidity High Strength High Tensile Strength Lubricated Oil Resistant Solvent Resistant Uses: Electrical/Electronic Applications Appearance: Black Forms: Pellets Processing Method: Injection Molding

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http://www.lookpolymers.com/polymer_Ascend-Performance-Materials-Vydne-25WSP-Nylon-66-Dry-as-Molded.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.14 g/cc	1.14 g/cc	ISO 1183
Water Absorption	1.2 % @Time 86400 sec	1.2 % @Time 24.0 hour	ISO 62
Moisture Absorption at Equilibrium	2.4 %	2.4 %	50% RH; ISO 62
Linear Mold Shrinkage	0.014 cm/cm @Thickness 2.00 mm	0.014 in/in @Thickness 0.0787 in	ISO 294-4
Linear Mold Shrinkage, Transverse	0.016 cm/cm @Thickness 2.00 mm	0.016 in/in @Thickness 0.0787 in	ISO 294-4

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	83.0 MPa	12000 psi	ISO 527-2

Mechanical Properties	Metric	English	Comments
Elongation at Yield	4.5 %	4.5 %	ISO 527-2
Tensile Modulus	3.40 GPa	493 ksi	ISO 527-2
Flexural Strength	87.0 MPa	12600 psi	ISO 178
Flexural Modulus	3.10 GPa	450 ksi	ISO 178
Poissons Ratio	0.40	0.40	ISO 527-2
Izod Impact, Notched (ISO)	6.00 kJ/m ²	2.86 ft-lb/in ²	ISO 180
Charpy Impact Unnotched	NB	NB	ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	0.480 J/cm ²	2.28 ft-lb/in ²	ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.600 J/cm ²	2.86 ft-lb/in ²	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 µm/m-°C	5.56 µin/in-°F	ISO 11359-2
	@Thickness 2.00 mm, Temperature 23.0 - 55.0 °C	@Thickness 0.0787 in, Temperature 73.4 - 131 °F	
CTE, linear, Transverse to Flow	11.0 µm/m-°C	6.11 µin/in-°F	ISO 11359-2
	@Thickness 2.00 mm, Temperature 23.0 - 55.0 °C	@Thickness 0.0787 in, Temperature 73.4 - 131 °F	
Melting Point	260 °C	500 °F	ISO 11359-2
Deflection Temperature at 0.46 MPa (66 psi)	225 °C	437 °F	ISO 75-2/B
Deflection Temperature at 1.8 MPa (264 psi)	70.0 °C	158 °F	ISO 75-2/A
UL RTI, Electrical	130 °C	266 °F	UL 746
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	130 °C	266 °F	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	

Thermal Properties	Metric	English	Comments
	@Thickness 3.00 mm	@Thickness 0.118 in	UL 746
UL RTI, Mechanical with Impact	75.0 °C	167 °F	UL 746
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	85.0 °C	185 °F	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	85.0 °C	185 °F	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	
UL RTI, Mechanical without Impact	75.0 °C	167 °F	UL 746
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	75.0 °C	167 °F	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	75.0 °C	167 °F	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	
Flammability, UL94	V-2	V-2	
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	V-2	V-2	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-2	V-2	
	@Thickness 3.00 mm	@Thickness 0.118 in	
Oxygen Index	23 %	23 %	ASTM D2863
	23 %	23 %	ISO 4589-2
Glow Wire Test	700 °C	1290 °F	Ignition Temperature; IEC 60695-2-12
	@Thickness 0.710 mm	@Thickness 0.0280 in	
	700 °C	1290 °F	Ignition Temperature; IEC 60695-2-12
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	725 °C	1340 °F	Ignition Temperature; IEC 60695-2-12
	@Thickness 3.00 mm	@Thickness 0.118 in	
	850 °C	1560 °F	Flame Index; IEC 60695-2-12
	@Thickness 0.710 mm	@Thickness 0.0280 in	

Thermal Properties	875 °C Metric	1610 °F English	Comments
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	960 °C	1760 °F	Flame Index; IEC 60695-2-12
	@Thickness 3.00 mm	@Thickness 0.118 in	

Electrical Properties	Metric	English	Comments
Dielectric Strength	26.0 kV/mm	660 kV/in	IEC 60243
	@Thickness 3.00 mm	@Thickness 0.118 in	
Arc Resistance	120 - 179 sec	120 - 179 sec	ASTM D495
	@Thickness 3.00 mm	@Thickness 0.118 in	
Comparative Tracking Index	>= 600 V	>= 600 V	IEC 60112
	@Thickness 3.00 mm	@Thickness 0.118 in	
Hot Wire Ignition, HWI	7.0 - 14 sec	7.0 - 14 sec	UL 746
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	15 - 29 sec	15 - 29 sec	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	30 - 59 sec	30 - 59 sec	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	UL 746
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	>= 120 arcs	>= 120 arcs	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	>= 120 arcs	>= 120 arcs	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	
High Voltage Arc-Tracking Rate, HVTR	0.000 - 10.0 mm/min	0.000 - 0.394 in/min	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	

Processing Properties	Metric	English	Comments
Processing Temperature	285 - 300 °C	545 - 572 °F	Melt
Rear Barrel Temperature	260 - 280 °C	500 - 536 °F	
Middle Barrel Temperature	270 - 285 °C	518 - 545 °F	
Front Barrel Temperature	280 - 290 °C	536 - 554 °F	

Processing Properties	Metric	English	Comments
Nozzle Temperature	280 - 300 °C	536 - 572 °F	
Mold Temperature	65.0 - 95.0 °C	149 - 203 °F	
Drying Temperature	<= 70.0 °C	<= 158 °F	
Dry Time	1.00 - 3.00 hour	1.00 - 3.00 hour	

Descriptive Properties	Value	Comments
Suggested Max Regrind	50%	

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