Vydyne® 25WSP
polyamide 66

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.

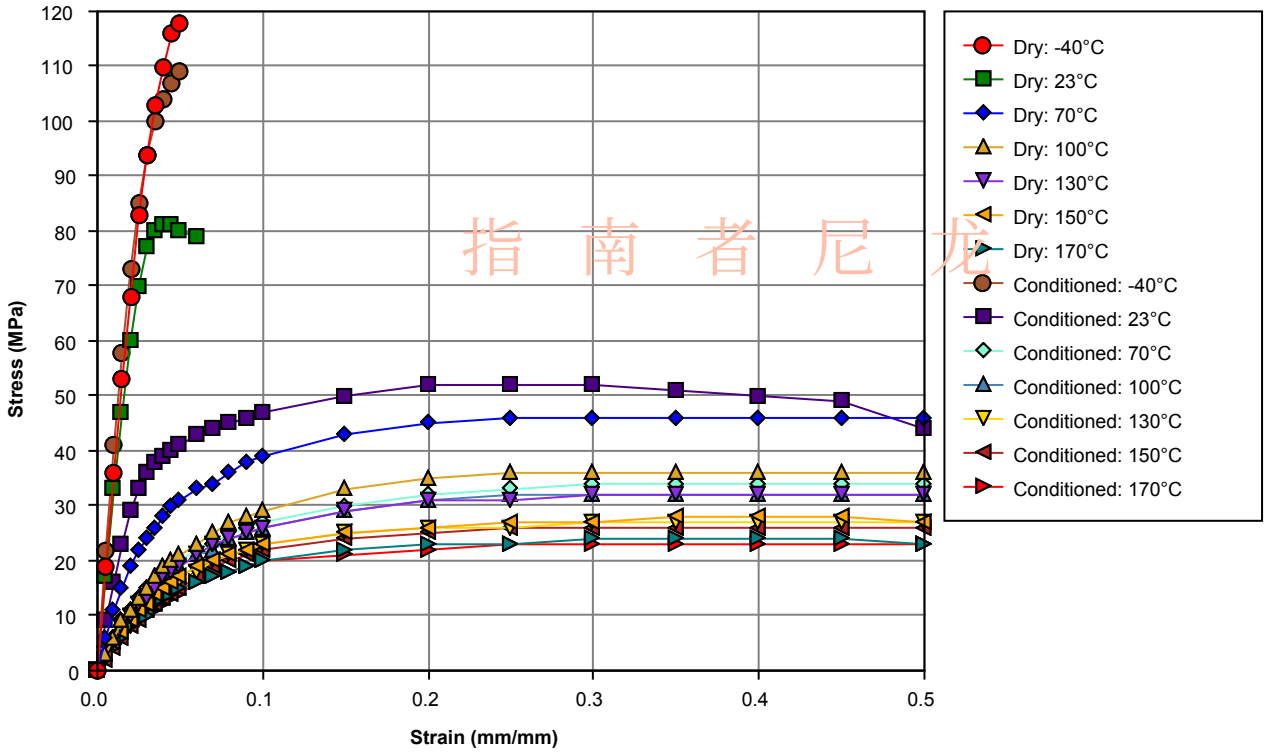
General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Additive	• Carbon Black	• Lubricant	
Features	• Abrasion Resistant • Chemical Resistant • Ductile • Gasoline Resistant • Good Flow	• Good Mold Release • Good Toughness • High Rigidity • High Strength • High Tensile Strength	• Lubricated • Oil Resistant • Solvent Resistant • Weather Resistant
Uses	• Electrical/Electronic Applications		
Agency Ratings	• ASTM D 4066 PA0191 • ASTM D 6779 PA0191	• MIL M-20693B • UL f1	
Automotive Specifications	• CHRYSLER MS-DB-41 CPN2017 Color: Black	• GM GMP.PA66.030	
UL File Number	• E70062		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1)		

Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	1.4	--	%	
Flow : 23°C, 2.00 mm	1.6	--	%	
Water Absorption (23°C, 24 hr)	1.2	--	%	ISO 62
Water Absorption (Equilibrium, 23°C, 50% RH)	2.4	--	%	ISO 62
Outdoor Suitability	f1	--		UL 746C
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (23°C)	3400	1550	MPa	ISO 527-2
Tensile Stress (Yield, 23°C)	83.0	77.0	MPa	ISO 527-2
Tensile Strain (Yield, 23°C)	4.5	25	%	ISO 527-2
Nominal Tensile Strain at Break (23°C)	20	60	%	ISO 527-2
Flexural Modulus (23°C)	3100	1400	MPa	ISO 178
Flexural Strength (23°C)	87.0	22.0	MPa	ISO 178
Flexural Stress (23°C)	87.0	22.0	MPa	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	4.8	--	kJ/m²	
23°C	6.0	--	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	No Break	--		
23°C	No Break	--		
Notched Izod Impact Strength (23°C)	6.0	--	kJ/m²	ISO 180

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
0.45 MPa, Unannealed	225	--	°C	
Heat Deflection Temperature				ISO 75-2/A
1.8 MPa, Unannealed	70.0	--	°C	
Melting Temperature	260	--	°C	ISO 11357-3
CLTE - Flow (23 to 55°C, 2.00 mm)	1.0E-4	--	cm/cm/°C	ISO 11359-2
CLTE - Transverse (23 to 55°C, 2.00 mm)	1.1E-4	--	cm/cm/°C	ISO 11359-2
RTI Elec				UL 746
0.75 mm	130	--	°C	
1.5 mm	130	--	°C	
3.0 mm	130	--	°C	
RTI Imp				UL 746
0.75 mm	85.0	--	°C	
1.5 mm	85.0	--	°C	
3.0 mm	85.0	--	°C	
RTI Str				UL 746
0.75 mm	75.0	--	°C	
1.5 mm	75.0	--	°C	
3.0 mm	75.0	--	°C	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Dielectric Strength (1.00 mm)	26	--	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	PLC 5	--		ASTM D495
Comparative Tracking Index (3.00 mm)	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.75 mm	PLC 0	--		
1.5 mm	PLC 0	--		
3.0 mm	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 0	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.75 mm	PLC 4	--		
1.5 mm	PLC 3	--		
3.0 mm	PLC 2	--		

Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.75 mm	V-2	--		
1.5 mm	V-2	--		
3.0 mm	V-2	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.75 mm	850	--	°C	
1.5 mm	875	--	°C	
3.0 mm	960	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.75 mm	700	--	°C	
1.5 mm	700	--	°C	
3.0 mm	725	--	°C	
Oxygen Index	23	--	%	ISO 4589-2

Isothermal Stress vs. Strain (ISO 11403-1)



Injection	Dry	Unit
Drying Temperature	< 70	°C
Drying Time	1.0 to 3.0	hr
Suggested Max Regrind	50	%
Rear Temperature	260 to 280	°C
Middle Temperature	270 to 285	°C
Front Temperature	280 to 290	°C
Nozzle Temperature	280 to 300	°C
Processing (Melt) Temp	285 to 300	°C
Mold Temperature	65 to 95	°C
Notes		
Typical properties: these are not to be construed as specifications.		

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