Product Comparison

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Technical Data

Product Description	
Vydyne® 47 NT (Dry)	Vydyne 47 NT is a general-purpose, medium impact-modified PA66 resin. 47 NT is recognized for all the processing and property advantages inherent to PA66 with the addition of improved impact strength. This resin offers a well balanced combination of engineering properties characterized by high melt point, good surface lubricity, abrasion resistance and resistance to many chemicals, machine and motor oils, solvents and gasoline. 47 NT is designed to meet the critical low-temperature impact requirements called out in many automotive specifications.
Generic Nylon 66	This data represents typical values that have been calculated from all products classified as: Generic Nylon 66 This information is provided for comparative purposes only.

General	Vydyne® 47 NT (Dry)	Generic Nylon 66
Manufacturer / Supplier	• Ascend Performance Materials Operations LLC	• Generic
Generic Symbol	• Nylon 66	• Nylon 66
Material Status	• Commercial: Active	• Commercial: Active
UL Yellow Card [1]	• E70062-100757496	--
Search for UL Yellow Card	• Ascend Performance Materials Operations LLC • Vydyne®	--
Availability	• Asia Pacific • Europe • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Additive	• Impact Modifier	--
Features	• Abrasion Resistant • Chemical Resistant • Gasoline Resistant • General Purpose • Good Processability • Good Toughness • High Impact Resistance • Impact Modified • Low Temperature Impact Resistance • Low Temperature Toughness • Oil Resistant • Solvent Resistant	--

General	Vydyne® 47 NT (Dry)	Generic Nylon 66
Agency Ratings	• ASTM D4066 PA0151 • ASTM D6779 PA0151	--
UL File Number	• E70062	--
Appearance	• Natural Color	--
Forms	• Pellets	--
Processing Method	• Injection Molding	--
Resin ID	• PA66-I	--
Also Available In	--	• Asia Pacific • Europe • Latin America • North America

Physical	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Density / Specific Gravity					
--	--	--	1.07 to 1.19		ASTM D792
--	1.10	--	1.08 to 1.14	g/cm³	ISO 1183
--	--	--	0.0400	lb/in³	ISO 1183 [3]
--	--	--	1.13 to 1.15	g/cm³	ASTM D1505
Apparent (Bulk) Density	--	--	0.70	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR)					
270°C/5.0 kg	--	--	4.8 to 84	g/10 min	ASTM D1238
275°C/0.325 kg	--	--	1.0 to 4.7	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	--	--	1.0 to 140	cm³/10min	ISO 1133
Molding Shrinkage					
Flow	--	--	1.9E-3 to 0.021	in/in	ASTM D955
Across Flow	--	--	0.013 to 0.025	in/in	ASTM D955
--	--	--	0.96 to 2.0	%	ISO 294-4
Across Flow : 73°F, 0.0787 in	1.6	--	--	%	ISO 294-4
Flow : 73°F, 0.0787 in	1.8	--	--	%	ISO 294-4

Form No. TDS-245614-118365-en
Document Created: Tuesday, March 5, 2024

Physical	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Water Absorption					
24 hr	--	--	0.57 to 1.3	%	ASTM D570
24 hr, 73°F	1.2	--	0.64 to 1.5	%	ISO 62
Saturation	--	--	1.9 to 8.5	%	ASTM D570
Saturation, 73°F	--	--	6.9 to 9.0	%	ISO 62
Equilibrium	--	--	0.10 to 3.0	%	ASTM D570
Equilibrium, 73°F, 50% RH	2.3	--	1.2 to 3.0	%	ISO 62
Viscosity Number (Reduced Viscosity)	--	--	144.0 to 150.0	ml/g	ISO 1628
Viscosity Number	--	--	137 to 155	cm³/g	ISO 307
Relative Viscosity	--	--	2.33 to 56.0		

Mechanical	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Tensile Modulus					
--	--	--	6530 to 686000	psi	ASTM D638
--	--	--	196000 to 588000	psi	ISO 527-1
73°F	406000	247000	--	psi	ISO 527-1
--	--	--	384000	psi	ISO 527-2 [3]
Tensile Strength					
Yield	--	--	6310 to 13600	psi	ASTM D638
Yield	--	--	7180 to 13300	psi	ISO 527-2
Yield, 73°F	8700	6530	--	psi	ISO 527-2
Break	--	--	5000 to 13100	psi	ASTM D638
Break	--	--	6310 to 13100	psi	ISO 527-2
Break, 73°F	7540	5800	--	psi	ISO 527-2
--	--	--	5000 to 18700	psi	ASTM D638
--	--	--	6350 to 13400	psi	ISO 527-2

Mechanical	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Tensile Elongation					
Yield	--	--	1.0 to 12	%	ASTM D638
Yield	--	--	3.9 to 5.1	%	ISO 527-2
Break	--	--	0.40 to 67	%	ASTM D638
Break	--	--	0.50 to 50	%	ISO 527-2
Break, 73°F	22	60	--	%	ISO 527-2
Nominal Tensile Strain at Break	--	--	9.7 to 51	%	ISO 527-2
Flexural Modulus					
--	--	--	440 to 691000	psi	ASTM D790
--	--	--	202000 to 470000	psi	ISO 178
73°F	334000	116000	--	psi	ISO 178
Flexural Strength					
--	--	--	7230 to 20400	psi	ASTM D790
--	--	--	1600 to 24700	psi	ISO 178
73°F	10200	3480	--	psi	ISO 178
Yield	--	--	9220 to 18300	psi	ASTM D790
Break	--	--	12900 to 19000	psi	ASTM D790
Compressive Strength					
--	--	--	1200 to 28000	psi	ASTM D695
--	--	--	4600 to 14500	psi	ISO 604
Shear Strength	--	--	10000 to 11600	psi	ASTM D732
Poisson's Ratio	--	--	0.37 to 0.40		ASTM E132
Coefficient of Friction	--	--	0.084 to 0.60		ASTM D1894
Wear Factor	--	--	-1.0 to 89	10^-10 in³·min/ft·lb·hr	ASTM D3702

Films	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Tensile Elongation (Yield)	--	--	4.4 to 4.5	%	ISO 527-3

Impact	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Charpy Notched Impact Strength					
--	--	--	0.26 to 4.9	ft·lb/in²	ISO 179
-40°F	5.2	8.6	--	ft·lb/in²	ISO 179/1eA
-22°F	8.1	11	--	ft·lb/in²	ISO 179/1eA
73°F	9.0	30	--	ft·lb/in²	ISO 179/1eA
73°F	--	--	1.92	ft·lb/in²	ISO 179/1eA [3]
Charpy Unnotched Impact Strength					
--	--	--	-0.48 to 52	ft·lb/in²	ISO 179
-22°F	No Break	No Break	--		ISO 179/1eU
73°F	No Break	No Break	--		ISO 179/1eU
Notched Izod Impact					
--	--	--	0.10 to 1.7	ft·lb/in	ASTM D256
--	--	--	1.8 to 2.9	ft·lb/in²	ISO 180
-40°F	5.7	8.6	--	ft·lb/in²	ISO 180/1A
-22°F	7.6	11	--	ft·lb/in²	ISO 180/1A
73°F	8.6	21	--	ft·lb/in²	ISO 180/1A
Notched Izod Impact (Area)	--	--	1.43 to 2.46	ft·lb/in²	ASTM D256
Unnotched Izod Impact					
--	--	--	1.0 to 31	ft·lb/in	ASTM D4812
--	--	--	1.4 to 140	ft·lb/in²	ISO 180
Instrumented Dart Impact					
--	--	--	8.85 to 673	in·lb	ASTM D3763
--	--	--	0.738 to 56.8	ft·lb	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force	--	--	539 to 1380	lbf	ISO 6603-2

Form No. TDS-245614-118365-en
Document Created: Tuesday, March 5, 2024

Hardness	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Rockwell Hardness					
--	--	--	84 to 122		ASTM D785
--	--	--	110 to 122		ISO 2039-2
Durometer Hardness					
--	--	--	72 to 85		ASTM D2240
--	--	--	79 to 94		ISO 868
Ball Indentation Hardness	--	--	13100 to 26500	psi	ISO 2039-1

Thermal	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Deflection Temperature Under Load					
66 psi, Unannealed	--	--	364 to 505	°F	ASTM D648
66 psi, Unannealed	365	--	354 to 451	°F	ISO 75-2/B
66 psi, Annealed	--	--	364 to 482	°F	ISO 75-2/B
264 psi, Unannealed	--	--	137 to 201	°F	ASTM D648
264 psi, Unannealed	145	--	140 to 187	°F	ISO 75-2/A
264 psi, Annealed	--	--	146 to 162	°F	ISO 75-2/A
264 psi	--	--	154	°F	ISO 75-2 [3]
1160 psi, Unannealed	--	--	121 to 140	°F	ISO 75-2/C
Continuous Use Temperature	--	--	184 to 268	°F	ASTM D794
Glass Transition Temperature	--	--	41.0 to 176	°F	ISO 11357-2
Vicat Softening Temperature					
--	--	--	409 to 500	°F	ASTM D1525
--	--	--	392 to 484	°F	ISO 306
Melting Temperature					
--	--	--	488 to 505	°F	
--	--	--	500 to 509	°F	DSC
--	500	--	499 to 509	°F	ISO 11357-3
--	--	--	488 to 501	°F	ASTM D3418
--	--	--	500	°F	ISO 3146
Peak Crystallization Temperature (DSC)	--	--	417 to 430	°F	ASTM D3418

Thermal	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
CLTE					
Flow	--	--	1.3E-5 to 4.7E-5	in/in/°F	ASTM D696
Flow	--	--	3.6E-5 to 6.8E-5	in/in/°F	ASTM E831
Flow	--	--	1.7E-6 to 1.7E-4	in/in/°F	ISO 11359-2
Flow : 73 to 131°F, 0.0787 in	6.2E-5	--	--	in/in/°F	ISO 11359-2
Transverse	--	--	5.1E-5 to 6.2E-5	in/in/°F	ASTM E831
Transverse	--	--	3.3E-5 to 2.3E-4	in/in/°F	ISO 11359-2
Transverse : 73 to 131°F, 0.0787 in	7.6E-5	--	--	in/in/°F	ISO 11359-2
Specific Heat	--	--	0.394 to 0.502	Btu/lb/°F	ASTM C351
Thermal Conductivity					
--	--	--	1.4 to 12	Btu·in/hr/ft²/°F	ASTM C177
--	--	--	1.4 to 4.8	Btu·in/hr/ft²/°F	ISO 8302
RTI Elec					UL 746B
--	--	--	149 to 268	°F	
0.030 in	257	--	--	°F	
0.06 in	257	--	--	°F	
0.12 in	257	--	--	°F	
RTI Imp					UL 746B
--	--	--	149 to 223	°F	
0.030 in	167	--	--	°F	
0.06 in	167	--	--	°F	
0.12 in	167	--	--	°F	
RTI Str					UL 746B
--	--	--	149 to 267	°F	
0.030 in	185	--	--	°F	
0.06 in	185	--	--	°F	
0.12 in	185	--	--	°F	

Electrical	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Surface Resistivity					
--	--	--	55 to 2.5E+15	ohms	ASTM D257
--	--	--	1.0E+3 to 2.5E+16	ohms	IEC 60093
--	--	--	1.0E+12 to 1.0E+15	ohms	IEC 62631-3-2
Volume Resistivity					
--	--	--	5.0 to 2.5E+16	ohms·cm	ASTM D257
--	--	--	1.0 to 2.5E+17	ohms·cm	IEC 60093
0.0394 in	1.0E+12	--	--	ohms·cm	IEC 60093
--	--	--	1.0E+10 to 2.5E+14	ohms·m	IEC 62631-3-1
Dielectric Strength					
--	--	--	370 to 600	V/mil	ASTM D149
--	--	--	400 to 820	V/mil	IEC 60243-1
0.0394 in	610	--	--	V/mil	IEC 60243-1
Dielectric Constant					
--	--	--	2.88 to 4.06		ASTM D150
--	--	--	2.86 to 3.85		IEC 60250
--	--	--	3.44		IEC 60250
--	--	--	3.41		IEC 62631-2-1
Dissipation Factor					
--	--	--	0.010 to 0.030		ASTM D150
--	--	--	3.0E-3 to 0.033		IEC 60250
--	--	--	5.0E-3 to 0.023		IEC 62631-2-1
Arc Resistance	--	--	60.0 to 190	sec	ASTM D495
Arc Resistance (0.118 in)	PLC 5	--	--		ASTM D495
Comparative Tracking Index (CTI)	--	--	588 to 600	V	UL 746A
Comparative Tracking Index					IEC 60112
--	--	--	597 to 608	V	
0.118 in	600	--	--	V	
High Amp Arc Ignition (HAI)	--	--	87.6 to 200		UL 746A

Electrical	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
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)					UL 746A
0.118 in	PLC 1	--	--		
Hot-wire Ignition (HWI)	--	--	8.0 to 46	sec	UL 746A
Hot-wire Ignition (HWI)					UL 746A
0.030 in	PLC 4	--	--		
0.06 in	PLC 4	--	--		
0.12 in	PLC 2	--	--		

Flammability	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Burning Rate	--	--	3.9 to 4.0	in/min	ISO 3795
Flame Rating					UL 94
0.030 in	HB	--	--		
0.06 in	HB	--	--		
0.12 in	HB	--	--		
Glow Wire Flammability Index					IEC 60695-2-12
--	--	--	1190 to 1760	°F	
0.030 in	1380	--	--	°F	
0.06 in	1430	--	--	°F	
0.12 in	1340	--	--	°F	
Glow Wire Ignition Temperature					IEC 60695-2-13
--	--	--	1290 to 1760	°F	
0.030 in	1430	--	--	°F	
0.06 in	1470	--	--	°F	
0.12 in	1380	--	--	°F	

Flammability	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Oxygen Index					
--	--	--	21 to 33	%	ASTM D2863
--	--	--	26 to 28	%	ISO 4589-2

Optical	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit	Test Method
Yellowness Index	--	--	-8.1 to 4.4	YI	ASTM D1925

Fill Analysis	Vydyne® 47 NT (Dry)	(Conditioned)	Generic Nylon 66	Unit
Melt Density	--	--	0.967 to 1.01	g/cm³
Ejection Temperature	--	--	374	°F

Injection	Vydyne® 47 NT (Dry)	Generic Nylon 66	Unit
Drying Temperature	176	175 to 178	°F
Drying Time	4.0	2.8 to 5.3	hr
Drying Time, Maximum	--	8.0	hr
Dew Point	--	-22 to 0	°F
Suggested Max Moisture	--	0.095 to 0.24	%
Suggested Shot Size	--	50	%
Hopper Temperature	--	158 to 176	°F
Rear Temperature	536 to 590	505 to 536	°F
Middle Temperature	536 to 590	506 to 567	°F
Front Temperature	536 to 590	509 to 576	°F
Nozzle Temperature	536 to 590	522 to 564	°F
Processing (Melt) Temp	545 to 581	514 to 565	°F
Mold Temperature	149 to 203	139 to 189	°F
Injection Pressure	--	9980 to 14400	psi
Holding Pressure	--	10800 to 10900	psi
Back Pressure	--	20.0 to 382	psi
Screw Speed	--	44 to 400	rpm

Injection	Vydyne® 47 NT (Dry)	Generic Nylon 66	Unit
Cushion	--	0.187 to 0.197	in
Vent Depth	--	7.5E-4 to 9.4E-4	in

Injection Notes	
Generic Nylon 66	This data represents typical values that have been calculated from all products classified as: Generic Nylon 66 This information is provided for comparative purposes only.

Extrusion	Vydyne® 47 NT (Dry)	Generic Nylon 66	Unit
Drying Temperature	--	176	°F
Drying Time	--	3.0 to 5.0	hr
Suggested Max Moisture	--	0.050 to 0.20	%
Cylinder Zone 1 Temp.	--	522 to 523	°F
Cylinder Zone 2 Temp.	--	523 to 524	°F
Cylinder Zone 3 Temp.	--	523 to 524	°F
Cylinder Zone 5 Temp.	--	523 to 524	°F
Melt Temperature	--	540 to 541	°F
Die Temperature	--	533 to 543	°F

Extrusion Notes	
Generic Nylon 66	This data represents typical values that have been calculated from all products classified as: Generic Nylon 66 This information is provided for comparative purposes only.

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] Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

Where to Buy

Supplier	
Vydyne® 47 NT	**Ascend Performance Materials Operations LLC** Houston, Houston USA Telephone: 888-927-2363 Web: http://www.ascendmaterials.com/
Generic Nylon 66	**Generic**

Distributor	
Vydyne® 47 NT	**Channel Prime Alliance** Telephone: 800-247-8038 Web: http://www.channelpa.com/ Availability: North America **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* Telephone: 800-232-4273 Web: http://www.chaseplastics.com/ Availability: North America **INTERPOLIMERI S.P.A.** Telephone: +39-0497-663811 Web: https://interpolimeri.com/ Availability: Italy, Portugal, Spain **SNETOR** *SNETOR is a Pan European distribution company. Contact SNETOR for availability of individual products by country.* Telephone: +33-1-4904-8888 Web: http://www.snetor.com/ Availability: Belgium, Czech Republic, Denmark, Finland, France, Italy, Netherlands, Norway, Poland, Romania, Slovakia, Spain, Sweden, United Kingdom
Generic Nylon 66	Please contact the supplier to find a distributor for Generic Nylon 66