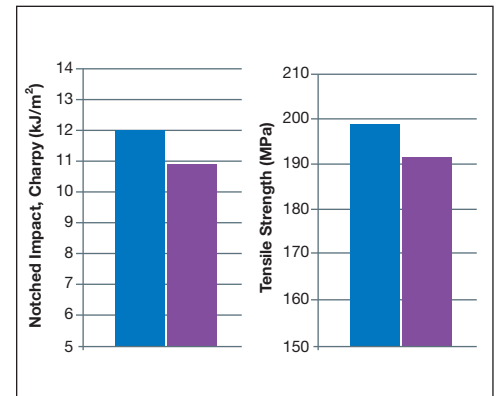
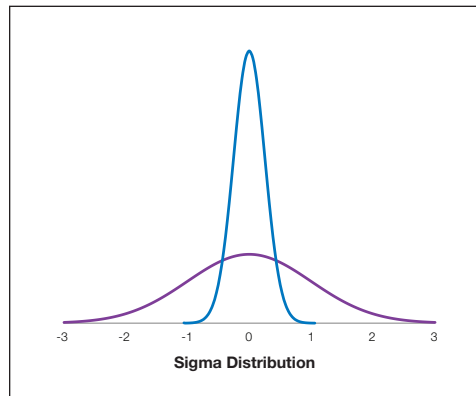
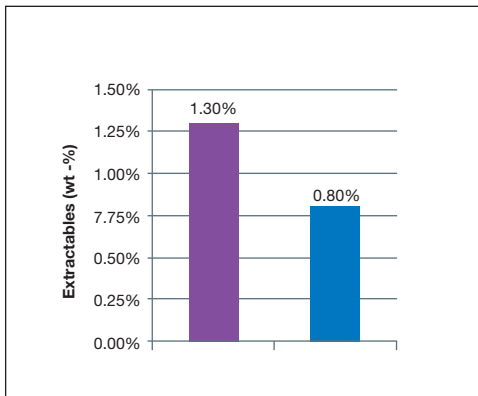




The Vydyne Difference

New compounding technology delivers class-leading cleanliness and process consistency

PENSACOLA COMPOUNDING versus TRADITIONAL COMPOUNDING



Clean Compounds

- Reduced mold cleaning and maintenance
- Higher production yields
- Lower operating costs
- Lower scrap rates

Precise Viscosity Control

- Less shot-to-shot variation
- Reduced non-conforming parts with dimension control
- Full access of molding capacity

Improved Physical Properties

- Increased part strength
- Higher safety margin in part assemblies
- Ability for thin wall design



Ascend Literature

The following application profiles and other documents are available at www.ascendmaterials.com/brochures

Automotive

Cooling Systems

- 1 Radiator End Tanks
- 2 Charge Air Cooler
- 3 Fan Shroud
- 4 Cooling Fan
- 5 Engine Cooling Inlet

Under the Hood

- 1 Fasteners
- 2 Clips
- 3 Carbon Canister
- 4 Air Suspension Piston
- 5 Thermostat Housing
- 6 Bearing Cage Retainer
- 7 Auto Fuse Box
- 8 Power Steering Reservoir
- 9 Fuel Filter Housing
- 10 Oil Fill Cap Base
- 11 Sensor

Powertrain

- 1 Cylinder Head Covers
- 2 Transmission Cover
- 3 Transmission Filter
- 4 Oil Module and Filter
- 5 Oil Fill Tube
- 6 Idler Pulley
- 7 Fuel Rail
- 8 Engine Cover
- 9 Clutch Cylinder Housing

Interiors

- 1 Air Bag Separation Bolt
- 2 Cable Ties
- 3 Assist Handle Bracket
- 4 Shifter Module
- 5 Door Panel Support
- 6 Safety Belt Retractor
- 7 Hand Rest Bracket

Exteriors

- 1 Mirror Bracket
- 2 Wheel Cover
- 3 Fuel Filler Cap
- 4 Mirror Base Plate

Consumer & Electronic

Consumer

- 1 Film and Packaging
- 2 Spray Canister Nozzles
- 3 Cigarette Lighters

Electronic

- 1 Cable Glands
- 2 Battery Seals
- 3 Lighting Parts
- 4 Solar Photovoltaics
- 5 Wall Plates and Receptacles
- 6 Electrical Connectors
- 7 Micromotors
- 8 Terminal Blocks

Cable Ties & Fasteners

White Papers

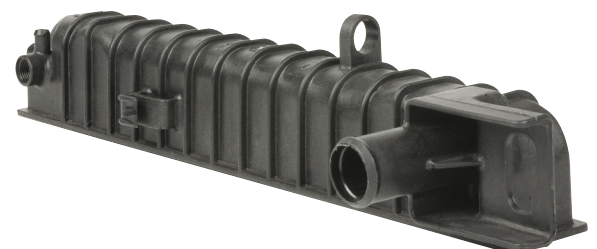
- 1 Pensacola Compounds
- 2 Connectors
- 3 Compounders Feedstock
- 4 Energy Economics of ADN

Automotive

Product Options



Air Intake ManifoldR530H/533H
 Brake Release LeverR533H/633H
 Carbon Canister.....22HSP, 21SPF, 47H
 Charge Air Cooler.....R530H/535H/550H/530HT/535HT/550HT
 Cover - CowlR862H
 Cover - Cylinder HeadR530H/535H
 Cover - EngineR228
 Cover - Rocker.....R533H/535H/860H
 Fan and ShroudR525H/530H/533H/535H/860/862H
 Headlamp Bezel.....22HSP, 21SPG1
 Mirror AssemblyR543H/860
 Power Steering Reservoir.....R533T/533H
 Radiator End TankR525H/530H/533H/535H/530HR
 Shifter ModulesR530H/533H/543H
 Timing Guide66H



New Products

DESCRIPTION | APPLICATION

30% and 33% GF PA66 with improved impact strength
[Oil pan](#), [Transmission pan](#)

CUSTOMER BENEFITS

- Designed to meet stone impact requirement
- Targeted for metal replacement applications

30% and 35% GF PA66 with enhanced thermal resistance
[Charge air cooler](#), [Radiator end tanks](#), [UTH components](#)

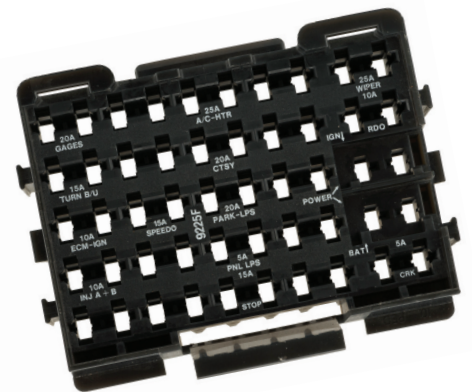
- Designed to meet new and emerging global automotive requirements for heat aging performance
- Property retention up to 1000 hrs @ 210 °C

Electric & Electronics

Product Options



Appliance Parts	R513/525/533/543, ECO315/366H, 909
Battery Seals	21SPF/SPC, 20NSP, 41/47/49H
Bobbins	909, ECO315/366H
Cable Gland / Cord Grip.....	21SPF/SPC, ECO315/366H
Connectors (Automotive)	21SPF/SPC, 20NSP, 22HSP, R513/525/533/543/550/515J/535J
Connectors (Ind./Cons.)	21SPF, 22HSP, 41/47/49H, 21SPF/SPC, R513/525/533/543/550/515J/535J, 20NSP, 22HSP, ECO315/366H
Electrical Plugs	21SPF/SPC, 20NSP, 22HSP, M344,
Electrical Sockets	21SPF/SPC, M344, ECO315/366H
Gears	ECO315/366H
Lamp Contact Holders	21SPF/SPC, 909, 21SPC, 22HSP, ECO315/366H
Motors	R533/543/550
Office Equipment	R513/525/533/543/550
Power Cords	21SPF/SPC, 20NSP, 22HSP, ECO315/366H ECO315/366H, 909, R515J/535J
Terminal Blocks	R513/525/533/543
Switches.....	21SPF/SPC, 20NSP
Wall Plates	21SPF/SPC, 20NSP, M344, ECO315/366H



New Products

DESCRIPTION APPLICATION	CUSTOMER BENEFITS
ECO FR PA66 (unreinforced and GF versions) Connectors, Terminal blocks, Switch-gear	<ul style="list-style-type: none"> Regulatory compliance (non-halogen FR) Process productivity (high flow, low plateout) Design freedom (high thermal resistance)
Reinforced PA66 Connectors	<ul style="list-style-type: none"> Process productivity (high flow, low plateout) Design freedom (high thermal resistance)
15 % and 35 % GF PA66, Electrically Neutral Connectors, Electrical housings	<ul style="list-style-type: none"> Design freedom from low electrical conductivity combined with thermal stability



Cable Ties & Fasteners

Product Options



General Purpose	21SPC1, 21SPF1, 21SPC, 21SPF, 21SPG1, 88XD
Impact Modified.....	47H
Weatherable	25WSP
Impact Modified/Weatherable	47H BK0644
Flame Retardant	ECO315
Heat Stabilized	22HSP

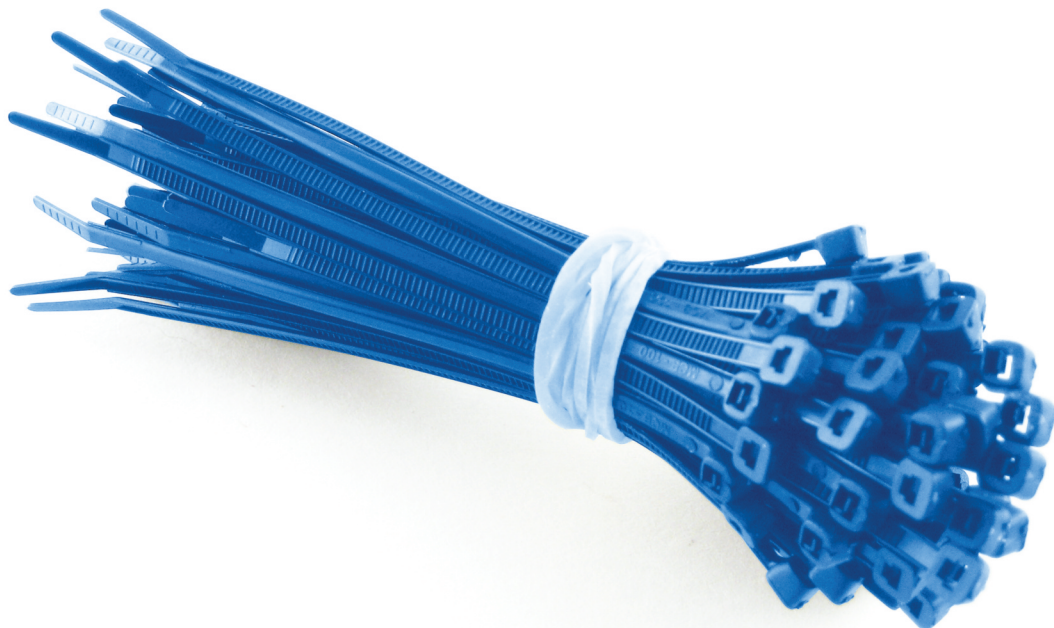
New Products

DESCRIPTION | APPLICATION

CUSTOMER BENEFITS

Tough weatherable PA66
Cable ties for solar, wind, heavy equipment and automotive industries

- Higher RTI heat resistance compared to competitive grades
- UV resistance for outdoor exposure
- Excellent processability



Compounders

Product Options



Homopolymer (low viscosity)21LS, 21ZLV
Homopolymer (medium viscosity)21MST, 21Z, 21Z-NT01A2,
50BW, 50BWFS
Homopolymer (high viscosity)21FSR, 52BWMS, 63A, 65B
Copolymers (medium viscosity)85XFS, 86XFS, 88X

New Products

DESCRIPTION APPLICATION	CUSTOMER BENEFITS
21LS Compounding feedstock	<ul style="list-style-type: none">• Low viscosity – high flow grade for shear/temperature sensitive additives
21Z-NT01A2 Compounding feedstock	<ul style="list-style-type: none">• High amine end groups for functional requirements
21MST Compounding feedstock	<ul style="list-style-type: none">• Melt stable through compounding process
52BWMS High viscosity PA66 feedstock resin Compounding feedstock	<ul style="list-style-type: none">• Consistent process at high viscosity• Aesthetics – improved color stability
65B Compounding feedstock	<ul style="list-style-type: none">• High viscosity resin to improve melt strength
88X Medium viscosity PA66,6 copolymer feedstock Compounding feedstock	<ul style="list-style-type: none">• Design freedom from improved low-temperature toughness• Aesthetics – better surface finish and color stability than PA66 homopolymer



Consumer & Industrial

Product Options



Aerosol Valves	21SPC, 21SPF, 20NSP1
Buckles	22HSP, 21SPC, 21SPF, 20NSP1, 47H
Casters / Wheels	21SPC, 21SPF, 20NSP1
Film / Food Pkg	63A, 65A, 65B, 66B/J/R
Gears	21SPC, 21SPF, 20NSP1
Gun Stocks	R525/530/535
Hardware	21SPC, 21SPF, 20NSP1
Kitchenware	21SPC, R515/525/530/535
Lacrosse Head	41/47H
Lighters	21SPC, 21SPF, 20NSP1
Monofilament	63A, 65A, 65B, 66B, 75HF
Oven Bags / Pan Liners	66J/R
Pulleys	21SPC, 21SPF, 20NSP1
Rail Fasteners.....	50BWFS, 22HSP, 21SPC, 41/47/49H, R525/530, 65A, 67R
Sausage Casings	65B, 66B/J/R
Skates (Hockey)	41/47H
Ski & Snowboard	41/47H
Stock Shapes.....	65A, 66B/J/R, 67B
Strollers	22HSP, 21SPC, 21SPF, 47H, R525/530
Thermal Breaks	50BWFS, R525/530/535/540/550
Utility Meters, Pumps	R530/535/540/550
Vacuum Film (ind.)	65A, 65B, 75HF, 66B/J/R
Wheel & Hubs	41/47/49H



New Products

DESCRIPTION APPLICATION	CUSTOMER BENEFITS
High viscosity PA66 Food packaging film, Vacuum film, Stock shapes, Corrugated tubing, Wire coating	<ul style="list-style-type: none"> Regulatory compliance (FDA CFR 177.1500, NSF Standard 61, 3A Sanitary, ASTM D6779) Consistent viscosity control delivers high productivity. Excellent color (low YI)
High viscosity, High thermal stability PA6633% GF Automotive timing chain guide	<ul style="list-style-type: none"> High abrasion resistance

— Continued on back.

New Products

DESCRIPTION | APPLICATION

CUSTOMER BENEFITS

Impact modified PA66

Sporting goods

- Regulatory compliance
- Higher impact strength compared to regular 33% GF

Heat stabilized SSP PA66

Monofilament

- Low RV range
- Ideal for high throughput
- High melt strength

Copolymers

Films

- High melt strength
- Puncture resistance
- Oxygen barrier
- Improved process flexibility



Glass and/or Mineral Filled Grades - Glass

Vydyne Products	GF	HS	Flow			Color		Lube	Comments
			Std	Med	High	Nat	Blk		
R633H05 Black	33%								PA66/6, improved surface appearance and flow
R633H01 Black	33%								PA66/6, improved surface appearance and flow
R633	33%								PA66/6, improved surface appearance and flow



Grade Reference Sheet

Glass and/or Mineral Filled Grades - Glass + Mineral

Vydyne Products	GF	MF	HS	Flow			Color		Lube	Comments
				Std	Med	High	Nat	Blk		
R862H BK0676	25%	15								PIR/PCR PA66 based grade
R860 BK02	10%	25								PCR PA66 grade

Extrusion Grades - Neat

Vydyne Products	HS	RV	Lube	Comments	Key Properties
63A		75 - 90		Medium RV for lower denier monofilament, cast film	Elongation - >25%
65A		110 - 140		Intermediate RV for higher denier monofilament, sheet, cast film	Elongation - >25%
65B		225 - 285		Intermediate RV for higher denier monofilament, sheet, cast film	Elongation - >25%
66B		230 - 280		High RV for thicker sheet, extruded profile, stock shapes, blown film	Elongation - >25%
66J		240 - 280		High RV for thicker sheet, extruded profile, stock shapes, blown film	Elongation - >25%
66R		240 - 260		High RV, lubricated for thicker sheet, extruded profile, stock shapes, blown film	Elongation - >25%
67R		240 - 280		Highest RV, lubricated for thicker sheet, extruded profile, stock shapes, blown film	Elongation - >40%
75HF		165 - 195		PA66/6 for lower modulus and improved clarity, cast and blown film	Elongation - >200%

GF - Glass Filled MF - Mineral Filled HS - Heat Stabilized IM - Impact Modified RTI - Relative Thermal Index

Unfilled Grades - Neat

Vydyne Products	HS	Flow		Color		Lube	Comments	Key Properties
		Std	Plus	Nat	Blk			
21SPC							Best in class ductility	Tensile Strength - 82 MPa Elongation - 25%
21SPC1							Best in class ductility, improved flow	
21X1							Enhanced printability and lower plate out	Tensile Strength - 88 MPa Elongation - 20%
21SPF							Improved cycle time	
21SPF1							Improved cycle time, improved flow	
21SPG1							Enhanced printability, improved cycle time	Tensile Strength - 95 MPa Elongation - 15%
20NSP							Improved cycle time	
20NSP1							Enhanced printability, fastest cycle time	
22HSP							Improved flow	Tensile Strength - 85 MPa Elongation - 25%
25WSP							Outdoor weatherable	Tensile Strength - 83 MPa Elongation - 20%

FR Grades - Neat

Vydyne Products	HS	Flow		Lube	Comments	Key Properties
		Std	High			
M344					PA66/6, halogenated FR, excellent ductility	Tensile Strength - 60 MPa Elongation - 35%
ECO315					PA66/6, non-halogen FR, excellent ductility	Tensile Strength - 75 MPa Elongation - 25%
ECO315J					PA66/6, non-halogen FR, excellent ductility RTI - 1,000 hours at 125 °C	Tensile Strength - 75 MPa Elongation - 25%
ECO366					PA66, non-halogen FR, RTI - 1,000 hours at 125 °C	Tensile Strength - 83 MPa Elongation - 5%
ECO366H					PA66, non-halogen FR, RTI - 1,000 hours at 140 °C	Tensile Strength - 83 MPa Elongation - 5%
909					PA66/6, halogenated FR, 25% glass	Tensile Strength - 132 MPa Elongation - 3%

GF - Glass Filled MF - Mineral Filled HS - Heat Stabilized IM - Impact Modified RTI - Relative Thermal Index FR - Flame Retardant

Impact Grades - Neat

Vydyne Products	HS	Flow			Color		Lube	Comments	Key Properties
		Std	Med	High	Nat	Blk			
49 NT								Excellent flow	Tensile Strength - 70 MPa Elongation - 17% Charpy Impact - 13 KJ/m ²
49 BK									
49H NT									
49H BK								Excellent flow	
47 NT								Excellent flow	
47 BK								Excellent flow	
47H NT								Excellent flow	Tensile Strength - 60 MPa Elongation - 22% Charpy Impact - 19 KJ/m ²
47H NT0688								Good flow, retains RV during molding, lower plateout	
47H BK11								Excellent flow	
47H BK0644								Good flow, retains RV during molding, enhanced heat stability, lower plateout, outdoor weatherable	
47H BK0668								Good flow, retains RV during molding, lower plateout	
41 NT								Excellent flow	
41H NT								Excellent flow	Tensile Strength - 50 MPa Elongation - 50% Charpy Impact - 76 KJ/m ²
41 BK								Excellent flow	
41H BK								Excellent flow	
41H BK0677								High impact, RV for extrusion	
			High RV - Extrusion						

Impact Grades - Glass + Impact

Vydyne Products	HS	Flow			Color		Lube	Comments	Key Properties
		Std	Med	High	Nat	Blk			
R413 NT0705								High flow, medium impact	Tensile Strength - 110 MPa Elongation - 5% Charpy Impact - 12 KJ/m ²
R413H NT								High flow, medium impact	
R413H BK07								High flow, medium impact	

GF - Glass Filled MF - Mineral Filled HS - Heat Stabilized IM - Impact Modified RTI - Relative Thermal Index

Glass and/or Mineral Filled Grades - Glass

Vydyne Products	GF	HS	Flow			Color		Lube	Comments
			Std	Med	High	Nat	Blk		
R513H	13%							General purpose, good chemical and creep resistance	
R513H Black	13%							General purpose, good chemical and creep resistance	
R513H BK02	13%							General purpose, good chemical and creep resistance	
R513H NT	13%							General purpose, good chemical and creep resistance	
R515	15%							General purpose, good chemical resistance	
R515J NT0689	15%							Electrically neutral	
R515J BK0690	15%							Electrically neutral	
R515H BK02	15%							General purpose, hydrolysis resistant	
R515H NT	15%							General purpose, hydrolysis resistant	
R525H Black	25%							Hydrolysis resistant	
R525H BK0201	25%							Hydrolysis resistant, better surface appearance	
R525H NT	25%							High flow	
R525H BK02	25%							High flow	
R530H BK0201	30%							Good hydrolysis resistance	
R530H BK02	30%							High flow	
R530H Black	30%							General purpose, hydrolysis resistant	
R530H BK08	30%							High flow, better surface appearance	
R530H NT	30%							General purpose, hydrolysis resistance	
R530	30%							General purpose	
R530HR BK652	30%							Improved hydrolysis resistance, 15% better than R530H BK0201	
R530HT BK02	30%							Higher heat stability	
R533H01 Black	33%							Hydrolysis resistant	
R533H Black	33%							Hydrolysis resistant	
R533H BK02	33%							Medium flow	
R533H BK0201	33%							Improved surface appearance versus R533H BK02	
R533H NT Q542	33%							Hydrolysis resistant	
R533	33%							Standard flow, 33% GF	
R533H BK0667	33%							Calcium chloride resistant	
R533T	33%							Light stabilized, translucent	
R535H BK02	35%							General purpose	
R535H NT651	35%							Electrically neutral	
R535HT BK653	35%							Higher heat stability	
R535J NT0665	35%							Electrically neutral	
R535J BK0678	35%							Electrically neutral	
R540H BK02	40%							General purpose	
R543H BK02	43%							General purpose	
R543H NT0554	43%							General purpose	
R550H	50%							Standard flow, 50% GF	
R550H NT662	50%							Hydrolysis resistant	
R550H BK02	50%							General purpose	
R550H NT0687	50%							Hydrolysis resistant	
R550HT BK02	50%							Higher heat stability	
R550	50%							Standard flow, 50% GF	

GF - Glass Filled MF - Mineral Filled HS - Heat Stabilized IM - Impact Modified RTI - Relative Thermal Index

North America / Various - Vydine Products

OMD	Specification Number	Vydine Products	
Delphi	M-2809	R240	
	M-2982	R865	
	6644	21X	
	6951	20N	
	M-26022-P	22H	
	M-26029-P	R208	
	M-53101	22H	
	M53103A	R533H Natural and Black	
	M5543	R533H Natural and Black	
	D-2-180	R538H	
	SD-2-181	Black R530H	
	SD-2-214 (4.1)	R228 Black	
	SD-2-214 (4.5)	R540H	
	SD-2-227	R525H Black	
	2-20, Type I, 4B SG	R533H/R533H Black	
	2-20, Type I, 4B-S	R533H	
	2-20, Type I, 5A-S	R240	
	2-20, Type I, 5B-S	R220, R228	
	2-20, Type I, 5B-SP	R840	
	2-20, Type I, 6A-S	R865 Black	
	M-862	20V	
	PMS NY1	21X	
	PMS NY4	R220	
	M-5507	22HSP	
	PM 520-004	21X	
	M-3592	49H	
	M2279	R413H	
	M6538	909	
	M-4692	R533H	
	7826921 5293	R533H Black	
	Nissan	PA66-INX-1	21SPC
	TagAZ	TAMS-8700-01	21Z
		TAMS-8710-01	52HSP
TAMS-8710-02		55HSP	
TAMS-8721-01		R515H	
TAMS-8723-01		R530H	
TAMS-8729-01		R533H	
TAMS-8733-01		R860	
TAMS-8733-02		R860	
TAMS-8764-01		R220, R228	
Toyota	TSM5603G-2C	R543H	
	TSM5603G-4	R860	



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Automotive Approvals

Asia - Vydine Products

OMD	Vydine Products
Chery	R530H, R530HT, R535H, R530HR
Geely	R530H, R530HR, 47H
Nissan (Renault)	AS22 (R530H BK0201), AS23 (R530H BK02), AS26 (R530H BK0201, R530HR BK652)
SAIC	R530H

Europe - Vydine Products

OMD	Application	Material Specification	Vydine Products	Status
BMW	RET	Not Listed	R530H BK	Approved ¹
Fiat	Lamp Bezels		20NSP BK	Approved
Opel	RET	GME 60460 => GM 16270	R530H BK	Approved
	CAC Inlet		R535H BK	Approved
	CAC Outlet		R535H BK	Approved
	Carbon Canister		22 HSP Black	Approved
	Fans & Shrouds		R530H BK	Approved
PSA	RET	FTM64 0046	R530H BK0201, R525H BK0201 Q564	Approved
	CAC		R535H BK02	Approved
Renault	RET	UB09c	R530H BK0201	Approved
	Engine Mounts	UB14	R550HC BK02 Q614	Approved
	Diesel Filter	UB03h	R530H BK0201	Approved
	Thermostatic Casing	UB09a	R530H BK0201	Approved
VW	Plug, Clamp, Clips	UB15	22HSP	Approved
	RET	TL 52062 => TL 52682	R530H BK	Approved
	CAC Inlet		R530HT BK	Approved
	CAC Outlet		R535H BK	Approved
Nearly All	Cable Ties, Fasteners	Many	R530H BK02, R540H BK02	Approved
			21SPC, 21SPF, 22HSP	Approved

1. Expected to be approved 2016



North America / Ford - [Vydyne Products](#)

Material Specification	SAE J1639 Callout	Polymer Type	Vydyne Products
ESA M4D 349A	PA 1112 Z6	15% GF PA66 grade	R513 Natural and Black
ESA M4D 349A	PA 1112	15% GF PA66 grade	R513H Natural and Black
ESA M4D 349B		15% GF PA66 grade	R413H Natural and Black
ESB M4D 133 A	PA 1816 Z6	33% GF PA66 grade	R633H, R633H-01
ESB M4D 353 A1		40% MF PA66 grade	R100, R200
ESB M4D 353 A4		40% MF PA66 grade	R220, R228, R840, R840 Black
ESB M4D 353 A7	PA 1147	40% GF/MF PA66 grade	R400G, R400G Black, R860, R860 Black
ESE M4D 287 A	PA 1116	33% GF PA66 grade	R533H, R533H Black
ESE M4D 287 B	PA 1116	33% GF PA66 grade, HS (Black JA6A approved)	R533H, R533H Black
ESF M4D 335 A		43% GF PA66 grade	R543, R543 Black, R543H, R543H Black
ESL M4D 533 A	PA 1816	33% GF PA66 grade (Black Interior JA6A)	R633H-05 Black
SAE J1639 ¹	PA 1112	13% GF PA66 grade	R513, R513 Black, R513H, R513H Black
SAE J1639 ²	PA 0171	Impact Modified, HS	47H, 47H Black
WSA M4D 768 A	PA 1116 Z6	33% Glass, Translucent PA6,6	R533T
WSK M4D 647 A	PA 0121Z6	General purpose	21SP, 21SP Black, 21SPF Natural, 21SPF Black
WSK M4D 648 A ³	PA 0121	HS PA66	22H, 22H Black, 22HSP, 22HSP Black
WSK M4D 663 A	PA 1116	33% GF PA66 grade	R533H, R533H Black
WSK M4D 666 A	PA 0172	High Impact, HS	41H, 41H Black
WSK M4D 752 A		30% Glass Hydrolysis Resistant	R530H Black
WSK M4D 823 A	PA 1147	40% GF/MF PA66 grade	R400G
WSK-M4D641-A		25% GF PA66 grade, HS	R525H Black
WSK-M4D642-A		30% Glass Fiber, HS	R530H Black
WSK-M4D642-A2		30% GF PA66 grade, HS	R530H Black
WSK-M4D673-A		35% Glass Fiber, HS	R535H Black
WSK-M4D719-A ⁴	PA 1147	40% GF/MF PA66 grade	R400G Natural and Black
WSKM4D719A	PA 1147	38% GF/MF PA66 grade	R400G, R400G Black
WSK-M4D706-A		Medium Impact, HS	47H, 47H Black
WSS-M4D706-B1		Medium Impact, HS	47H, 47H Black
WSS-M4D648-B1	PA 0121	HS PA66	22HSP

1. Replaced ESA-M4D 349-A GF - Glass Filled MF - Mineral Filled HS - Heat Stabilized IM - Impact Modified RTI - Relative Thermal Index
 2. Replaced ESB-M4D 178-A
 3. Replaced ESF-M4D 82-A
 4. Replaced ESF-M4D 417-A

Ford specifications for plastic materials are identified by the prefix ES for older specifications and WS for the new Worldwide formats using ISO methods, followed by "M4D", followed by the number of the specifications and a suffix.

North America / Chrysler Corporation - [Vydyne Products](#)

CPN	Color/Form/use	Vydyne Products
1076	Natural, Type B, HS	22H, 22HSP
1826	Black, Impact Modified, HS	47H Black
1853	Natural, 33% GF PA66 grade	R533
1899	Black, Type B, HS for Non-UV Parts	22H Black, 22HSP Black
1900	Black, 33% GF PA66 grade, HS	R533H Black
1938	Natural, Type A	21X, 21SPF
1948	Black, Type A, For Interior Applications (w/Concentrate 58S for 21X and 21SPF only)	21X Black, 21SPF Black, 21SPG Black
2017	Black, Type A, for Weatherable Exterior	25W
2043	Natural, 33% GF PA66 grade, HS	R533H
2043	33% Glass-reinforced, HS, Translucent	R533T
2239	Black, 13% GF PA66 grade, HS	R513H Black
2310	Natural, 40% MF PA66 grade, HS	R220
2438	Natural, Impact Modified, HS	41H
2438	Natural, High Flow, Impact Modified, HS	55HSP
2443	Black, 40% MF PA66 grade, HS	R228 Black, R840 Black
2508	Black, 43% GF PA66 grade, HS	R543H
2521	Natural, Impact Modified, HS	47H Natural
2554	Black, 40% GF/MF PA66 grade, HS	R400G
2565	Black, Impact Modified, HS	41H Black
2565	Black, High Flow, Impact Modified, HS	55HSP
2727	Black, 33% GF PA66 grade, HS, Hydrolysis Resistant	R533H Black
3189	CANOD, Charcoal Gray, 40% MF PA66 grade	R220
3275	CANOD, Copolymer, 33% GF PA66 grade, Color Painted Outside Door Handles	R633H-01
3454	40% MF PA66 grade	R840
3490 ¹	Non-Color Match, General Purpose, HS	22HSP
4005	Black, 33% Glass-reinforced, Nylon 66/6	R633H-05
4014 ²	100% Color Match, 35% GF PA66 grade, HS	R533H Black
4018	Black, 30% GF PA66 grade, HS, Hydrolysis Resistant	R530H Black
4098	Black, 25% Glass Fiber, HS	R525H Black
4814	Black DX9 w/Clariant AB94631576	22HSP

1. Non-match color GF - Glass Filled MF - Mineral Filled HS - Heat Stabilized IM - Impact Modified RTI - Relative Thermal Index
 2. Color match CANOD - Color as noted on drawing

Chrysler Corporation specifies plastics via a two-number system; an MSDB number and CPN number. The following nylon MSDB numbers have been converted to MSDB 41: DB45, DB48, DB416, DB418, DB426, DB427, DB430, DB431, DB432, DB433, DB437, DB441, DB444, DB446, DB447, DB451, DB453, DB455, DB457, DB465, DB466, and DB470.

North America / General Motors - [Vydyne Products](#)

Material Specification	Polymer Type	Vydyne Products
GMP PA66.003	38% GF/MF PA66 grade, HS	R860 Natural and Black
GMP PA66.005	General Purpose	21, 21SP, 21SP Black, 21SPF, 21SPF Black, 21X, 21X Black
GMP PA66.013	33% GF PA66 grade, HS	R533H, R533H Black, R533T
GMP PA66.015	Medium Impact, HS	47H, 47H Black
GMP PA66.018	General Purpose, HS	22H, 22H Black, 22HSP, 22HSP Black
GMP PA66.020	13% GF PA66 grade, HS	R513H, R513H Black
GMP PA66.025	43% GF PA66 grade, HS	R543H, R543H Black
GMP PA66.039R	40% GF PA66 grade	R8540H, R8540H Black
GMP PA66.040	30% GF PA66 grade, HS	R530H Natural and Black
GMP PA66.042R	38% GF/MF PA66 grade, HS	R860, R860 Black
GMP PA66.043R	40% MF PA66 grade	R840, R840 Black
GMP PA66.046	25% GF PA66 grade, HS, HR	R525H Natural and Black
GMP PA66.054	33% GF PA66 grade, HS, HR	R533H Natural and Black
GMP PA66.058	25% GF PA66 grade, Ignition resistant	909, 909 Black
GMP PA66.062	High Impact, HS	41H, 41H Black
GMP PA66.083	25% GF PA66 grade, HS	R525H, R525H Black
GMP PA66/6.002	33% GF PA66 grade, HS	R633, R633H Natural and Black
GMP PA66/6.004	33% GF PA66 grade, HS, UV	R633H Natural and Black
GMW3038P PA66GF15H	15% GF PA66 grade, HS	R515H Natural and Black
GMW3038P PA66GF25H	25% GF PA66 grade, HS	R525H Natural and Black
GMW3038P PA66GF30H	30% GF PA66 grade, HS	R530H Natural and Black
GMW3038P PA66GF35H	35% GF PA66 grade, HS	R535H Natural and Black
GMW3038P PA66GF40H	40% GF PA66 grade, HS	R540H Natural and Black
GMW3038P PA66GF50H	50% GF PA66 grade, HS	R550H Natural and Black
QK 003013 H		R530H
QK 002921		21SPC, 22HSP
QK 002921 E		49H, 53HSP, 55HSP
QK 003012 H		R525H
QK 003013 HW		R530H
QK 003014 H		R535H
GMW16447P-PA66-T1	Impact, HS	49H, 49H Black
GMW16447P-PA66-T2	Medium Impact, HS	47H, 47H Black
GMW16447P-PA66-T3	High Impact, HS	41H, 41H Black
GMW16270P-PA66-GF25	25% GF PA66 grade, HS	R525H Natural and Black
GMW16270P-PA66-GF30	30% GF PA66 grade, HS	R530H Natural and Black
GMW16270P-PA66-GF35	35% GF PA66 grade, HS	R535H Natural and Black
GMW16036P-PA66	General Purpose, HS	22HSP, 22HSP Black

GF - Glass Filled MF - Mineral Filled HS - Heat Stabilized IM - Impact Modified RTI - Relative Thermal Index



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inspiring everyday™



**>\$2
billion**

Ascend's revenue
in 2015

67

Years Ascend has
been producing PA66

#1

Ascend is the world's
largest producer of
Adipic Acid

#2

Ascend is the world's
second-largest producer
of Adiponitrile

2x

Ascend has more than
doubled compounding
capacity since 2009

2x

Ascend has more than
doubled its R&D spend
in the past four years

3x

Ascend has nearly
tripled its resin capacity
since 2005

Our Value Proposition

Ascend Performance Materials is one of the world's largest fully-integrated producers of PA66 resin.

Ascend is committed to the PA66 chain:

- It is our only business – 100 percent of our time is focused on growing the value of the PA66 chain.
- We are a fully integrated producer of PA66: chemicals, polymer, compounds and fiber.
- We are based in North America with access to attractive feedstocks.

Our customers can count on us:

- We are regionally balanced, with a strong position in each region of the world.
- We invest in additional capacity and capability to meet our customers' growth needs.
- We have reliable operations to help our customers. We meet their commitments.

Ascend has deep industry knowledge:

- We have a differentiated product portfolio focused on developing grades to meet future requirements.
- Our expertise in relevant application spaces helps customers develop the right solution.
- We have a leadership team with a proven track record of building long-lasting, mutually beneficial customer relationships.