

## Vydyne® R433H BK0746

Ascend Performance Materials Operations LLC - Polyamide 66

### General Information

#### Product Description

Vydyne R433H BK0746 is designed to reinforce downgauged steel and aluminum used in vehicle body-in-white (BIW) structures, helping reduce weight without sacrificing safety or comfort. R433H BK0746 has improved energy absorption over traditional glass-filled PA66, helping reduce noise, vibration and harshness (NVH) and absorbing impact energy from crashes. Using R433H BK0746 in the BIW structure reinforces sheet metal, helping manufacturers shave substantial weight and improve efficiency. Trends in lightweight and NVH are becoming even more paramount with the growth of Electric Vehicles. Vydyne R433H BK0746 has excellent performance attributes to support applications where this will be of prime importance such as battery frames and housings.

#### General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Filler / Reinforcement	• Glass Fiber, 33% Filler by Weight
Additive	• Heat Stabilizer • Impact Modifier • Lubricant
Features	• Balanced Stiffness/Toughness • Good Rigidity • Lubricated • Chemical Resistant • Good Tensile Strength • Oil Resistant • Gasoline Resistant • Good Toughness • Solvent Resistant • Good Dimensional Stability • Heat Stabilized • Good Heat Resistance • Impact Modified
Agency Ratings	• ASTM D4066 PA016G33 • ASTM D6779 PA016G33
Automotive Specifications	• STELLANTIS MS-DB-41 CPN2735
Appearance	• Black
Forms	• Pellets
Processing Method	• Injection Molding
Resin ID	• PA66-I-GF33

### Properties <sup>1</sup>

Physical	Dry	Conditioned	Unit	Test Method
Density	1.35	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.0	--	%	
Flow : 73°F, 0.0787 in	0.60	--	%	
Water Absorption (24 hr, 73°F)	1.0	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	1.3	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	1.39E+6	899000	psi	ISO 527-1
Tensile Stress (Yield, 73°F)	21800	14900	psi	ISO 527-2
Tensile Stress (Break, 73°F)	21900	14800	psi	ISO 527-2
Tensile Strain (Yield, 73°F)	3.3	7.4	%	ISO 527-2
Tensile Strain (Break, 73°F)	3.6	8.5	%	ISO 527-2
Flexural Modulus (73°F)	1.22E+6	870000	psi	ISO 178
Flexural Stress (73°F)	31200	19100	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°F	8.1	7.1	ft·lb/in <sup>2</sup>	
-22°F	8.1	7.6	ft·lb/in <sup>2</sup>	
73°F	11	13	ft·lb/in <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179/1eU



-40°F	45	45	ft·lb/in <sup>2</sup>	
-22°F	48	44	ft·lb/in <sup>2</sup>	
73°F	46	46	ft·lb/in <sup>2</sup>	
Notched Izod Impact Strength				ISO 180/1A
-40°F	7.6	8.6	ft·lb/in <sup>2</sup>	
-22°F	8.1	8.6	ft·lb/in <sup>2</sup>	
73°F	11	13	ft·lb/in <sup>2</sup>	
<b>Thermal</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Deflection Temperature Under Load (66 psi, Unannealed)	500	496	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	473	466	°F	ISO 75-2/A
Melting Temperature	504	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	8.9E-6	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	6.1E-6	--	in/in/°F	ISO 11359-2

### Processing Information

<b>Injection</b>	<b>Dry Unit</b>
Drying Temperature	176 °F
Drying Time	4.0 hr
Rear Temperature	536 to 590 °F
Middle Temperature	536 to 590 °F
Front Temperature	536 to 590 °F
Nozzle Temperature	536 to 590 °F
Processing (Melt) Temp	545 to 581 °F
Mold Temperature	149 to 203 °F

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

