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## AUTOMOTIVE APPLICATION PROFILE

# Idler Pulley

We understand that in the automotive industry, you need reliable materials that perform to a higher standard. Ascend offers a comprehensive portfolio of engineered plastics for challenging automotive applications. We work with our customers to achieve the very best from our products. That's why we offer a worldwide support network of application specialists and technical experts. Our material knowledge and expertise in automotive systems can help you improve part performance and reduce material usage and cycle times.

**Products Used:** R530H, R535H, R540H, R550H

### Application Description

Pulleys are a critical component in the accessory belt drive system. The stiffness, dimensional stability and temperature resistance are critical in maintaining optimum performance of the system. A smooth surface is needed to minimize the wear on the drive belt. Also, the chemical resistance of the PA66 eliminates problems with typical automotive chemicals.

### Benefits

- Stiffness
- Shear strength
- Wear resistance
- Longer belt life
- Smooth surface
- Dimensional stability
- Temperature resistance
- Chemical resistance

### The Vydyne Difference

Ascend's Vydyne® nylon 6,6 is ideal for this application because of its superior stiffness, shear strength and performance at elevated temperatures. The smooth surface provides for optimum belt life and performance. Vydyne PA66 resins can be more cost effective than competing resin systems.

### Metal Replacement

Vydyne R550H is an excellent alternative to metal because of its high tensile strength, light weight and corrosion resistance. Idler and tensioner pulleys made with PA66 are lighter, lowering rotating inertia and increasing belt life. The lower inertia, smooth surface and high wear resistance reduce noise, vibration and harshness (NVH).



## Product Properties



| R530H, R535H, R540H, R550H |             |                   |       |        |        |        |
|----------------------------|-------------|-------------------|-------|--------|--------|--------|
| Property*                  | Test Method | Units             | R530H | R535H  | R540H  | R550H  |
| Specific Gravity           | ISO 1183    | none              | 1.37  | 1.41   | 1.46   | 1.58   |
| Tensile Strength           | ISO 527-2   | MPa               | 195   | 210    | 220    | 240    |
| Flexural Modulus           | ISO 178     | MPa               | 9,600 | 10,500 | 12,300 | 16,000 |
| Notched Izod               | ISO 180     | kJ/m <sup>2</sup> | 11    | 12     | 14     | 17     |
| DTUL @ 1.8 MPa             | ISO 75-2/A  | °C                | 250   | 250    | 252    | 255    |

\*Dry as molded (DAM)

## Application Development and Support

Our automotive applications team relies on years of industry experience and CAE support for tooling to help you optimize your system design. For more information, contact our expert applications specialists or visit [ascendmaterials.com](http://ascendmaterials.com).



Ascend Performance Materials is the world's largest fully integrated producer of nylon 6,6 resin. We manufacture and reliably supply world-class plastics, fibers and chemicals that are used in thousands of everyday applications such as car parts, electronics and cable ties.

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