Transmission Cover

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: R433H, R435H, R533H, R535H

Application Description
Transmission covers face high temperatures and constant contact with transmission oil. In this harsh environment, the transmission cover needs to seal reliably to prevent oil leakage and water and dirt intrusion, while also providing openings for a fluid level dipstick and the transmission electrical control harness.

The Vydyne Difference
Ascend's Vydyne PA66 is ideal for transmission cover applications because of its superior temperature and chemical resistance. High modulus ductile, glass-filled Vydyne R433H and R435H grades protect from road debris impact. Plus, Vydyne's best-in-class flow allows you to design parts with thinner walls, thereby reducing material cost, cycle time and part weight. Our simulation experts use state-of-the-art FEA and flow analysis to help you design a part right, the first time.

Benefits
- Strength
- Chemical resistance
- Superior mold flow
- Temperature resistance
- Stiffness
- Impact strength

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Product Properties

<table>
<thead>
<tr>
<th>Property*</th>
<th>Test Method</th>
<th>Units</th>
<th>R433H</th>
<th>R435H</th>
<th>R533</th>
<th>R535H</th>
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<tbody>
<tr>
<td>Density</td>
<td>ISO 1183</td>
<td>g/cm³</td>
<td>1.35</td>
<td>1.39</td>
<td>1.40</td>
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<tr>
<td>Tensile Strength</td>
<td>ISO 527-2</td>
<td>MPa</td>
<td>148</td>
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<td>210</td>
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<tr>
<td>Tensile Modulus</td>
<td>ISO 527-2</td>
<td>MPa</td>
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<td>11,300</td>
<td>10,600</td>
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<td>Charpy Notched Impact @ 23°C</td>
<td>ISO 179/1eA</td>
<td>kJ/m²</td>
<td>23</td>
<td>18</td>
<td>11</td>
<td>12</td>
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<tr>
<td>Charpy Notched Impact @ –30°C**</td>
<td>ISO 179/1eA</td>
<td>kJ/m²</td>
<td>16***</td>
<td>14***</td>
<td>10</td>
<td>11</td>
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<td>kJ/m²</td>
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<td>kJ/m²</td>
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<td>95***</td>
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<td>DTUL @ 1.8 MPa</td>
<td>ISO 75-2/A</td>
<td>°C</td>
<td>245</td>
<td>248</td>
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*Dry as molded (DAM)  **Except as otherwise noted  ***Tested at –40°C

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.

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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