
AUTOMOTIVE APPLICATION PROFILE

High-Voltage Cable Guides and Mounts

Ascend Performance Materials' high-performance nylon 6,6 compounds are ideal for electrical and electronic (E&E) applications. With over 150 grades with more than 100 UL approvals and VDE recognition, Vydyne® grades for E&E applications are designed to meet ever stricter regulatory requirements, including fire and safety standards. Vydyne grades provide superior mechanical and thermal performance while maintaining dimensional integrity, and exhibit excellent flow and moldability for complex designs.

Products Used: 49H

Application Description

High-voltage cables in plugin hybrid and electric vehicles move power to and from the battery and various systems throughout the car. Managing and keeping these cables in place over the life of the vehicle and through a range of driving conditions, including vehicle collisions, is a critical safety challenge. Cable guides and mounts must stand up to wild temperature fluctuations, constant vibration and high-force impact to secure and protect high-voltage cables running throughout the vehicle. Electrical insulation and chemical resistance are also important properties for this critical application.

The Vydyne Difference

Meeting all the requirements for PHEV and EV cable guides and mounts takes a special material. Ascend's Vydyne 49H meets the requirements and exhibits a balance of strength and impact ductility to keep high-voltage cables mounted and safely out of the way. Inherent electrical insulation properties and chemical resistance make Vydyne 49H perfect for these applications. Vydyne 49H is also easily colorable to RAL 2003 orange or similar high-visibility colors.

Benefits

- Superior strength
- Stiffness
- Impact resistance
- Electrical resistance
- Chemical resistance



Product Properties



49H			
Property*	Test Method	Units	49H
Density	ISO 1183	g/cm ³	1.11
Tensile Strength @ Break	ISO 527-2	MPa	70
Tensile Elongation @ Break	ISO 527-2	MPa	17
Notched Charpy Impact at 23°C	ISO 179	kJ/m ²	13
Notched Charpy Impact at -40°C	ISO 179	kJ/m ²	8
Dielectric Strength	IEC 60112	kV/mm	14
Volume Resistivity	IEC 60093	ohms-cm	1.0 E+11

*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.



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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