
ELECTRICAL & ELECTRONIC APPLICATION PROFILE

Solar Photovoltaic

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: 25WSP, ECO315J, ECO366H, 47H BK0644

Application Description

Electrical components in solar panels require materials that can withstand years of sun exposure and harsh elements. Solar photovoltaic (PV) applications require ductility, UV stability, chemical resistance, electrical insulation and, in some cases, flame retardant properties.

The Vydyne Difference

Ascend's Vydyne 25WSP, ECO315J, ECO366H and 47G BK0644 products provide superior ductility and electrical insulation properties while allowing for faster cycle times, making them ideal for solar PV applications. 25WSP and 47H BK0644 contain 2% carbon black for maximum UV exposure applications. Additionally, ECO315J and ECO366H are formulated with heat stabilizers that provide additional UV protection. Carbon black can also be added for enhanced UV protection.

Benefits

- UV stability
- High ductility
- Electrical performance
- Flame resistance
- Improved processing



Product Properties

25WSP, ECO315J, ECO366H, 47H BK0644						
Property*	Test Method	Units	25WSP	ECO315J	ECO366H	47H BK0644
Density	ISO 1183	g/cm ³	1.14	1.16	1.17	1.1
Tensile Strength @ Break	ISO 527-2	MPa	83	75	83	60
Tensile Elongation @ Break	ISO 527-2	%	20	25	5	22
Notched Charpy Impact @ 23°C	ISO 179/1eA	kJ/m ²	6.0	5.4	3.4	19.0
Notched Charpy Impact @ -30°C	ISO 179/1eA	kJ/m ²	4.8	5.4	3.7	17
Flammability	UL 94	NA	V2	V0	V0	HB
Dielectric Strength	IEC 60243	kV/mm	26	13	20	12
Volume Resistivity	IEC 60093	ohms-cm	1.0 E+16	1.0 E+11	1.0 E+19	1.0 E+11
RTI Electrical @ 1.5 mm	UL 746B	°C	130	130	150	130
RTI Strength @ 1.5 mm	UL 746B	°C	75	100	130	115
RTI Impact @ 1.5 mm	UL 746B	°C	85	85	65	75

*Dry as molded (DAM)

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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Product Characteristics

25WSP

- Unfilled PA66 with UL f1

ECO315J

- Unfilled PA66/6 copolymer with organic heat stabilizer and high ductility
- V0 at 0.4 mm
- Superior ductility (>20% elongation) for enhanced living hinge, latch and snap-fit performance and design
- Enhanced heat aging of 1,000 hours at 135°C

ECO366H

- Unfilled PA66 with high HS and high RTIs
- Best-in-class flame resistance (V0 at 0.2 mm)
- High flow for intricate parts, reduced warpage and reduced cycle time
- High melt temperature (>260°C)
- Best-in-class RTI electrical of 150°C
- Satisfies UL1059 and IEC 60947-7-1 for terminal blocks

47H BK0644

- Medium-impact grade PA66 with good toughness and UL f1



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