
ELECTRICAL & ELECTRONIC APPLICATION PROFILE

Battery Seals

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

Products Used: **Vydyne**[®] 21SPC, 21SPG1, 21SPF1, 20NSP1, 47H;
HiDura[™] D0MP

Application Description

A battery seal is a safety device that tightly seals a battery to prevent the loss of electrolytes. The plastic gasket is sealed to the cell by means of radial crimping pressure or by impact. A vent mechanism is incorporated into the gasket to release pressure, protecting against cell rupture and damage in the event of misuse under abusive conditions. The vent is designed to relieve excessive gas pressure that may be generated by prolonged short-circuiting, improper disposal during a fire, charging and/or incorrect insertion in devices.

Our PA66 and PA612 grades ensure battery seals possess excellent chemical resistance and maintain dimensional stability throughout their design life.

HiDura long chain polyamide compounds are ideal for longer life, next-generation batteries with exacting requirements. HiDura PA612 grades deliver outstanding dimensional stability, chemical resistance and excellent processability.

Benefits

- Balanced strength and stiffness for controlled failure when internal pressure rises
- Chemical resistant
- Excellent sealing fit with long-term dimensional stability



			Vydyne PA66					HiDura PA612	
Product			21SPC	21SPG1	21SPF1	20NSP1	47H	DOMP	
Characteristics			<ul style="list-style-type: none"> · UL 94 V-2-rated · Translucent · Mold release 	<ul style="list-style-type: none"> · General purpose · High flow · Mold release 	<ul style="list-style-type: none"> · Rapid-cycling · High flow · Mold release 	<ul style="list-style-type: none"> · Nucleated · Fastest-cycling · High flow · Mold release 	<ul style="list-style-type: none"> · Impact-modified · Mold release 	<ul style="list-style-type: none"> · Nucleated · Fastest-cycling · High flow · Mold release 	
Property	Test Method	Units							
Tensile Stress at Yield	ISO 527	MPa	82	82	88	95	60	66	
Nominal Tensile Strain at Break		%	25	25	20	13	22	21	
Flexural Modulus	ISO 178	MPa	2,900	2,900	3,300	3,200	2,300	2,300	
Flexural Strength		MPa	80	80	105	100	70	70	
Notched Charpy Impact	23°	ISO 179	kJ/m ²	6.0	6.0	6.0	6.0	19.0	3.2
	-30°		kJ/m ²	5.0	5.0	5.0	5.0	17.0	3.0
			Link to TDS	Link to TDS	Link to TDS	Link to TDS	Link to TDS	Link to TDS	



Ascend Performance Materials makes high-performance materials for everyday essentials and new technologies. Our focus is on improving quality of life and inspiring a better tomorrow through innovation. We make the plastics, fabrics, fibers and chemicals used to make safer vehicles, cleaner energy, better medical devices, smarter appliances and longer-lasting apparel and consumer goods. We are committed to safety, sustainability and the success of our customers and our communities.

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