Preliminary Data

AMODEL®
polyphthalamide

A-1625 HS BK324

AMODEL A-1625 HS BK324 is a 25% carbon and glass-fiber-reinforced, heat-stabilized grade of polyphthalamide (PPA). It is formulated for applications requiring the dissipation of static charge. This material is well suited for fuel systems applications requiring low permeation, low swell, and high thermal resistance. It can also be used for components of electrical/electronic systems requiring high strength and stiffness, as well as static charge dissipation.

AMODEL A-1625 HS BK324 resin provides low moisture absorption, excellent dimensional stability and has creep resistance superior to other electrostatic dissipative materials.

This resin can be easily processed by injection molding using conventional equipment and methods.

Typical Properties of AMODEL A-1625 HS BK324 Resin

		Typical Values[1]			
	Test	SI Units		U.S. Customary Units	
Property	Method	DAM[2]	Units	DAM[2]	Units
Mechanical					
Tensile Strength	ISO 527-2	180	MPa	26.0	kpsi
Tensile Modulus	ISO 527-2	13.1	GPa	1,890	kpsi
Tensile Elongation	ISO 527-2	2.0	%	2.0	%
Flexural Stress	ISO 178	275	MPa	39.9	kpsi
Flexural Modulus	ISO 178	10.9	GPa	1,580	kpsi
ISO Izod Impact Notched	ISO 180	9.3	kJ/m^2	4.4	$ft\text{-}lb/in^2$
ISO Izod Impact Unnotched	ISO 180	50	kJ/m^2	24	$ft\text{-}lb/in^2$
Thermal					
Deflection Temperature	ISO 75				
at 1.8 MPa (264 psi)		275	°C	527	°F
at 0.45 MPa (66 psi)		285	°C	545	°F
Electrical					
Volume Resistivity	ASTM D 257	2×10^5	ohm-cm	2×10^5	ohm-cm
Surface Resistivity	ASTM D 257	2×10^4	ohm/sq	2×10^4	ohm/sq
Surface Resistance	ESD STM11.11	2×10^3	ohm	2×10^3	ohm
General					
Specific Gravity	ISO 1183A	1.26		1.26	
Water Absorption, 24 hr.	ISO 62	0.25	%	0.25	%
Mold Shrinkage	ISO 294-4				
Flow Direction		0.4	%	0.4	%
Transverse Direction		0.6	%	0.6	%

[1] Values are typical of limited production. Actual properties of individual batches will vary within specification limits. Values are typical of uncolored resin, addition of colorants or other additives may alter properties.

[2] "dry, as molded".

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Drying

Resin should be dried before molding because excessive moisture will result in nozzle drool, reduced mechanical properties, poor surface appearance, and sprue sticking. Extremely wet resin will result in a foamy extrudate. The target moisture level is 0.03 to 0.06% (300 to 600 ppm) and the maximum recommended drying temperature is 135°C (275°F).

Although AMODEL resins are shipped with less than 0.15% moisture and packaged in moisture-proof foil-lined bags or boxes, the resin should be dried for optimum molding results. The preferred drying condition is 4 hours at 120°C (248°F). Alternatively, the resins can be dried for 8 hours at 90°C (194°F). In either case, a desiccant bed dryer with a dew point below -30°C (-22°F) should be used.

Drying Tips:

- Do not open containers until ready to process.
- Drying at temperatures higher than 125°C (257°F) may result in the darkening of natural colored pellets.
- If a thermogravimetric moisture analyzer is used, it should be set to 170°C (338°F)
- AMODEL resin in an open container needs to be dried as shown in the following table. The recommended drying time depends on how long the container has been open and the estimated relative humidity.

Drying Time at 120°C (248°F), hours

	Elapsed Time From Container Opening, hours				
Relative Humidity, %	**0.25**	**0.5**	**1**	**2**	**3**
30	4.5	5.0	5.5	6.0	6.5
50	5.0	5.5	6.0	7.0	7.5
75	5.0	5.5	6.5	7.5	8.0
100	5.5	6.5	7.5	8.5	9.0

Injection Molding

AMODEL A-1625 HS BK324 resin can be readily injection molded in most screw injection molding machines. A general purpose screw is recommended, with minimum back pressure.

Barrel temperatures generally should start at 310°C (590°F) the rear zone and gradually increase to 320°C (608°F) in the front zone. These conditions should give melt temperatures of 320° to 330°C (608° to 626°F).

A mold temperature of at least 135°C (275°F) is recommended to ensure full crystallinity in the typical molded part. High crystallinity results in optimum mechanical properties, excellent dimensional stability and good surface appearance. The use of lower mold temperatures may produce parts with lower crystallinity and, consequently, optimal performance may not be achieved.

Standard Packaging and Labeling

AMODEL A-1625 HS BK324 resin is packaged in foil lined, multiwall paper bags containing 25 kg (55.115 pounds) of material. Special packaging can be supplied upon request. Individual packages will be plainly marked with the product number, the color, the lot number, and the net weight.

Precautionary Labeling

On the basis of the toxicological, physical, and chemical properties of AMODEL A-1625 HS BK324 resin, labeling used on containers is as follows:

Caution! Handling and/or processing this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose, and throat.

Product Safety and Emergency Service

For product safety information or a Material Safety Data Sheet on a product of Solvay Advanced Polymers

1 (800) 621-4557
1 (770) 772-8880 outside of U.S.

For information or help in an emergency such as a spill, leak, fire or explosion, call day or night:

Emergency Health Information

1 (800) 621-4590
1 (770) 772-5177 outside of U.S.

Emergency Spill Information

CHEMTREC 1 (800) 424-9300
1 (703) 527-3887 outside of U.S.
collect calls accepted

For Additional Information

Technical Service
1 (800) 621-4557

Customer Service
1 (800) 848-9744