

A-1133 BK937 DW, A-1133 NT DW

Amodel A-1133 BK937 DW and A-1133 NT DW are 33% glass-fiber-reinforced resins designed for high strength and stiffness and improved hydrolytic stability. The resins have low moisture absorption and a low coefficient of thermal expansion, which means excellent dimensional stability. Creep resistance is also exceptional.

These grades have been approved for use with potable water in the United States, the United Kingdom, and France. Other regional approvals are expected, and this data sheet will be updated as they are received.

These materials are ideally suited for many mechanical parts in the industrial, appliance, and consumer products industries. Potential applications would include parts in boilers, water distribution and metering components, water control valving, and other plumbing applications.

These resins can be processed easily by injection molding using conventional equipment and methods.

Typical Properties of Amodel A-1133 BK937 DW and A-1133 NT DW Resin

Property	Test Method	TYPICAL VALUES ⁽¹⁾			
		SI Units		U.S. Customary Units	
		DAM ⁽²⁾	Units	DAM ⁽²⁾	Units
Mechanical					
Tensile Strength	ISO 527-2	188	MPa	27.3	kpsi
Tensile Modulus	ISO 527-2	11.2	GPa	1.62	Mpsi
Tensile Elongation	ISO 527-2	1.7	%	1.7	%
Flexural Stress	ISO 178	268	MPa	38.9	kpsi
Flexural Modulus	ISO 178	10.4	GPa	1.51	Mpsi
ISO Notched Izod Impact	ISO 180	10.1	kJ/m ²	4.8	ft-lb/in ²
ISO Notched Charpy Impact	ISO 179	8.2	kJ/m ²	3.9	ft-lb/in ²
Thermal					
Deflection Temperature at 264 psi (1.8 MPa)	ISO 75	296	°C	565	°F
General					
Specific Gravity	ISO 1183A	1.49		1.49	

⁽¹⁾ Values are typical of limited production. Actual properties of individual batches will vary within specification limits.

⁽²⁾ "dry, as molded".

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.

Relative Humidity, %	Elapsed Time From Container Opening, hours				
	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-1133 BK937 DW and A-1133 NT DW resins 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 range from 600° to 625°F (316° to 329°C) in the rear zone and gradually increase to 615° to 635°F (324° to 335°C) in the front zone. These conditions should give melt temperatures of 610° to 650°F (321° to 343°C).

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A mold temperature of 275°F (135°C) 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-1133 BK937 DW and A-1133 NT DW resins are 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.

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.

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