

# Ixef® 3008

## polyarylamide

Ixef® 3008 is a 30% carbon-fiber reinforced polyarylamide compound which exhibits extremely high strength and stiffness, good surface gloss, excellent creep resistance, and lower density than glass-fiber reinforced engineering resins.

Black: Ixef® 3008/9008

### General

Material Status	<ul style="list-style-type: none"> <li>Commercial: Active</li> </ul>
Availability	<ul style="list-style-type: none"> <li>Africa &amp; Middle East</li> <li>Asia Pacific</li> <li>Europe</li> <li>Latin America</li> <li>North America</li> </ul>
Filler / Reinforcement	<ul style="list-style-type: none"> <li>Carbon Fiber, 30% Filler by Weight</li> </ul>
Features	<ul style="list-style-type: none"> <li>Chemical Resistant</li> <li>Creep Resistant</li> <li>Good Dimensional Stability</li> <li>High Flow</li> <li>High Strength</li> <li>Low Moisture Absorption</li> <li>Outstanding Surface Finish</li> <li>Ultra High Stiffness</li> </ul>
Uses	<ul style="list-style-type: none"> <li>Appliance Components</li> <li>Appliances</li> <li>Automotive Applications</li> <li>Automotive Electronics</li> <li>Automotive Under the Hood</li> <li>Bushings</li> <li>Camera Applications</li> <li>Cams</li> <li>Cell Phones</li> <li>Electrical/Electronic Applications</li> <li>Furniture</li> <li>Gears</li> <li>Industrial Applications</li> <li>Lawn and Garden Equipment</li> <li>Machine/Mechanical Parts</li> <li>Metal Replacement</li> <li>Power/Other Tools</li> </ul>
RoHS Compliance	<ul style="list-style-type: none"> <li>Contact Manufacturer</li> </ul>
Automotive Specifications	<ul style="list-style-type: none"> <li>BMW GS 93016</li> </ul>
Appearance	<ul style="list-style-type: none"> <li>Black</li> </ul>
Forms	<ul style="list-style-type: none"> <li>Pellets</li> </ul>
Processing Method	<ul style="list-style-type: none"> <li>Injection Molding</li> </ul>

Physical	Typical Value	Unit	Test method
Density	1.34	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage - Flow <sup>1</sup>	0.030 to 0.10	%	Internal Method
Water Absorption			
23°C, 24 hr	0.22	%	ISO 62
Equilibrium, 65% RH	2.0	%	Internal Method

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	26000	MPa	ISO 527-2
Tensile Stress (Yield)	250	MPa	ISO 527-2
Tensile Strain (Break)	1.3	%	ISO 527-2
Flexural Modulus	23000	MPa	ISO 178
Flexural Stress	360	MPa	ISO 178

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<b>Impact</b>	<b>Typical Value</b>	<b>Unit</b>	<b>Test method</b>
Charpy Notched Impact Strength	3.6	kJ/m <sup>2</sup>	ISO 179
Charpy Unnotched Impact Strength	36	kJ/m <sup>2</sup>	ISO 179
Notched Izod Impact	59	J/m	ASTM D256
Unnotched Izod Impact	450	J/m	ASTM D256

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<b>Thermal</b>	<b>Typical Value</b>	<b>Unit</b>	<b>Test method</b>
Heat Deflection Temperature 1.8 MPa, Unannealed	230	°C	ISO 75-2/A

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<b>Electrical</b>	<b>Typical Value</b>	<b>Unit</b>	<b>Test method</b>
Volume Resistivity	3.0E+3	ohms·cm	ASTM D257
Comparative Tracking Index	600	V	IEC 60112

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<b>Flammability</b>	<b>Typical Value</b>	<b>Unit</b>	<b>Test method</b>
Flame Rating <sup>2</sup>	HB		UL 94
Oxygen Index	23	%	ISO 4589-2

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<b>Injection</b>	<b>Typical Value</b>	<b>Unit</b>
Drying Temperature	120	°C
Drying Time	0.50 to 1.5	hr
Rear Temperature	250 to 260	°C
Front Temperature	260 to 290	°C
Processing (Melt) Temp	280	°C
Mold Temperature	120 to 140	°C

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### Injection Notes

Hot Runners: 250°C to 260°C (482°F to 500°F)

Injection Pressure: rapid

#### Storage

Ixef® compounds are shipped in moisture-resistant packages at moisture levels according to specifications. Sealed, undamaged bags should be preferably stored in a dry room at a maximum temperature of 50°C (122°F) and should be protected from possible damage. If only a portion of a package is used, the remaining material should be transferred into a sealable container. It is recommended that Ixef® resins be dried prior to molding following the recommendations found in this datasheet and/or in the Ixef® processing guide.

#### Drying

The material as supplied is ready for molding without drying. However, if the bags have been open for longer than 24 hours, the material needs to be dried. When using a desiccant air dryer with dew point of -28°C (-18°F) or lower, these guidelines can be followed: 0.5-1.5 hour at 120°C (248°F), 1-3 hours at 100°C (212°F), or 1-7 hours at 80°C (176°F).

#### Injection Molding

IXEF 3008 compound can be readily injection molded in most screw injection molding machines. A general purpose screw is recommended, with minimum back pressure.

The measured melt temperature should be about 280°C (536°F), and the barrel temperatures should be around 250°C to 260°C (482°F to 500°F) in the rear zone, gradually increasing to 260°C to 280°C (500°F to 536°F) in the front zone. If hot runners are used, they should be set to 250°C to 260°C (482°F to 500°F).

To maximize crystallinity, the temperature of the mold cavity surface must be held between 120°C and 140°C (248°F and 284°F). Molding at lower temperatures will produce articles that may warp, have poor surface appearance, and have a greater tendency to creep. Set injection pressure to give rapid injection. Adjust holding pressure and hold time to maximize part weight. Transfer from injection to hold pressure at the screw position just before the part is completely filled (95%-99%).

### Notes

Typical properties: these are not to be construed as specifications.

<sup>1</sup> Solvay Internal procedure, Pressure 750 bars (10.9 kpsi); specimen 40 mm x 20 mm x 2-4 mm. (1.6 in. x 0.8 in. x 0.08-0.16 in.)

<sup>2</sup> These flammability ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

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