Ixef® 1022
polyarylamide

Ixef® 1022 is a 50% glass-fiber reinforced, general purpose polyarylamide compound that exhibits very high strength and rigidity, outstanding surface gloss, and excellent creep resistance.

- Natural: Ixef® 1022/0008, Ixef® 1022/0085
- Black: Ixef® 1022/9008, Ixef® 1022/9085
- Color upon request

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight	
Features	• Chemical Resistant • Creep Resistant • General Purpose • Good Dimensional Stability • High Flow	• High Strength • Low Moisture Absorption • Outstanding Surface Finish • Ultra High Stiffness
Uses	• Appliances • Automotive Applications • Automotive Interior Parts • Cell Phones	• Electrical Parts • Furniture • High Gloss Applications • Sporting Goods
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• ASTM D6779 PA111G50 • BMW GS 93016 • BOSCH N28 BN05-OX1 Color: 0008 Natural • BOSCH N28 BN05-OX1 Color: 9008 Black • GM GM7001M PAMXD6(A4,A22,A64,BA651,G30,MS1700,NS335) Color: 9008 Black • GM GM7001M PAMXD6(A4,A22,A64,BA751,G30,MS1700,NS350) Color: NT Natural	
UL File NumberGlobal	• E95746	
Appearance	• Black • Colors Available	• Natural Color
Forms	• Pellets	

Physical	Dry	Conditioned	Unit	Test method
Density	1.64	--	g/cm³	ISO 1183
Molding Shrinkage	0.10 to 0.30	--	%	ISO 294-4
Water Absorption				
24 hr, 23°C	0.16	--	%	ISO 62
Saturation	3.2	--	%	Internal Method
Equilibrium, 65% RH	1.5	--	%	Internal Method
Equilibrium, 23°C, 50% RH	1.2	--	%	Internal Method

Mechanical	Dry	Conditioned	Unit	Test method
Tensile Modulus	20000	20000	MPa	ISO 527-1
Tensile Stress (Break)	280	260	MPa	ISO 527-2
Tensile Strain (Break)	1.9	2.2	%	ISO 527-2
Flexural Modulus	19000	--	MPa	ISO 178
Flexural Stress	400	--	MPa	ISO 178

Impact	Dry	Conditioned	Unit	Test method
Charpy Notched Impact Strength	11	11	kJ/m²	ISO 179
Charpy Unnotched Impact Strength	68	57	kJ/m²	ISO 179
Notched Izod Impact	110	--	J/m	ASTM D256
Unnotched Izod Impact	850	--	J/m	ASTM D4812

Thermal	Dry	Conditioned	Unit	Test method
Deflection Temperature Under Load				ISO 75-2/A
1.8 MPa, Unannealed	230	--	°C	
Melting Temperature	237	--	°C	ISO 11357-3
CLTE - Flow	1.5E-5	--	cm/cm/°C	ISO 11359-2

Electrical	Dry	Conditioned	Unit	Test method
Volume Resistivity	1.0E+13	--	ohms·cm	IEC 60093
Electric Strength	31	--	kV/mm	IEC 60243-1
Dielectric Constant (110 Hz)	4.60	--		IEC 60250
Comparative Tracking Index	570	500	V	IEC 60112
Dissipation Factor	0.017	--		IEC 60250

Flammability	Dry	Conditioned	Unit	Test method
Flame Rating [1]	HB	--		UL 94
Oxygen Index	25	--	%	ISO 4589-2

Injection	Dry	Unit
Drying Temperature	120	°C
Drying Time	0.50 to 1.5	hr
Rear Temperature	250 to 260	°C
Front Temperature	260 to 290	°C
Nozzle Temperature	260 to 290	°C
Processing (Melt) Temp	280	°C
Mold Temperature	120 to 140	°C
Injection Rate	Fast	

Injection Notes

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

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).

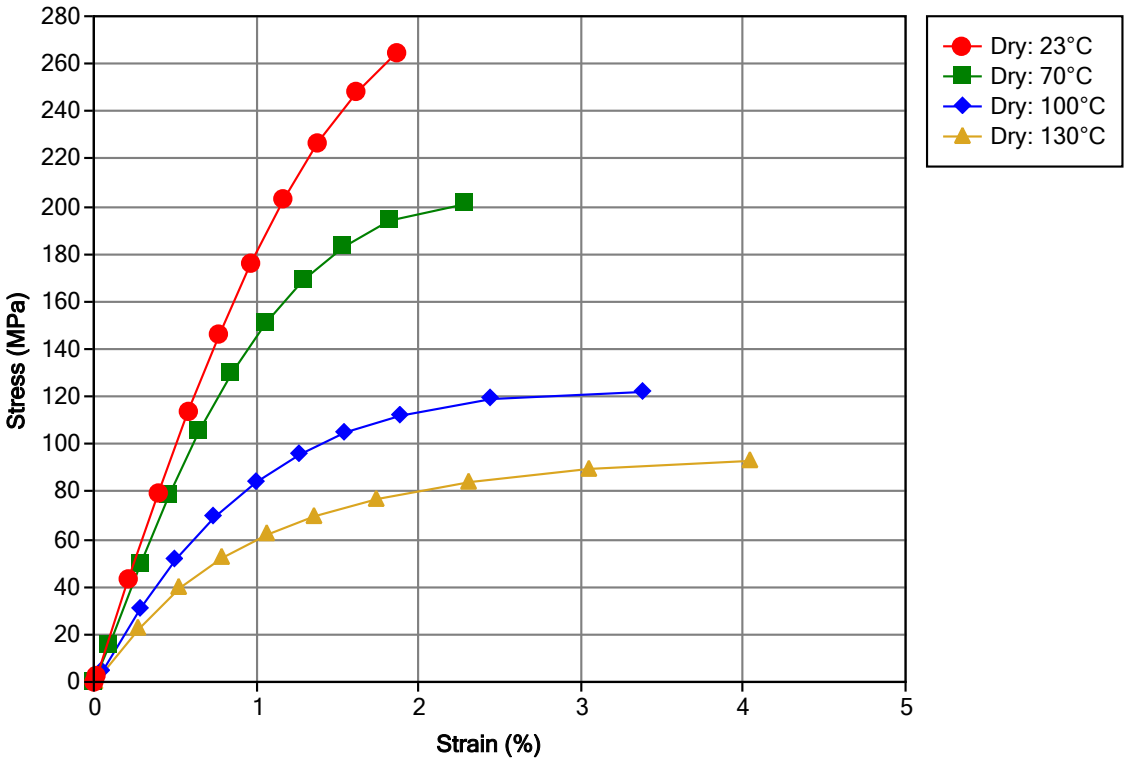
Injection Molding

Ixef 1022 compound can be readily injection molded in most screw injection molding machines. A general purpose screw is recommended, with minimum back pressure.

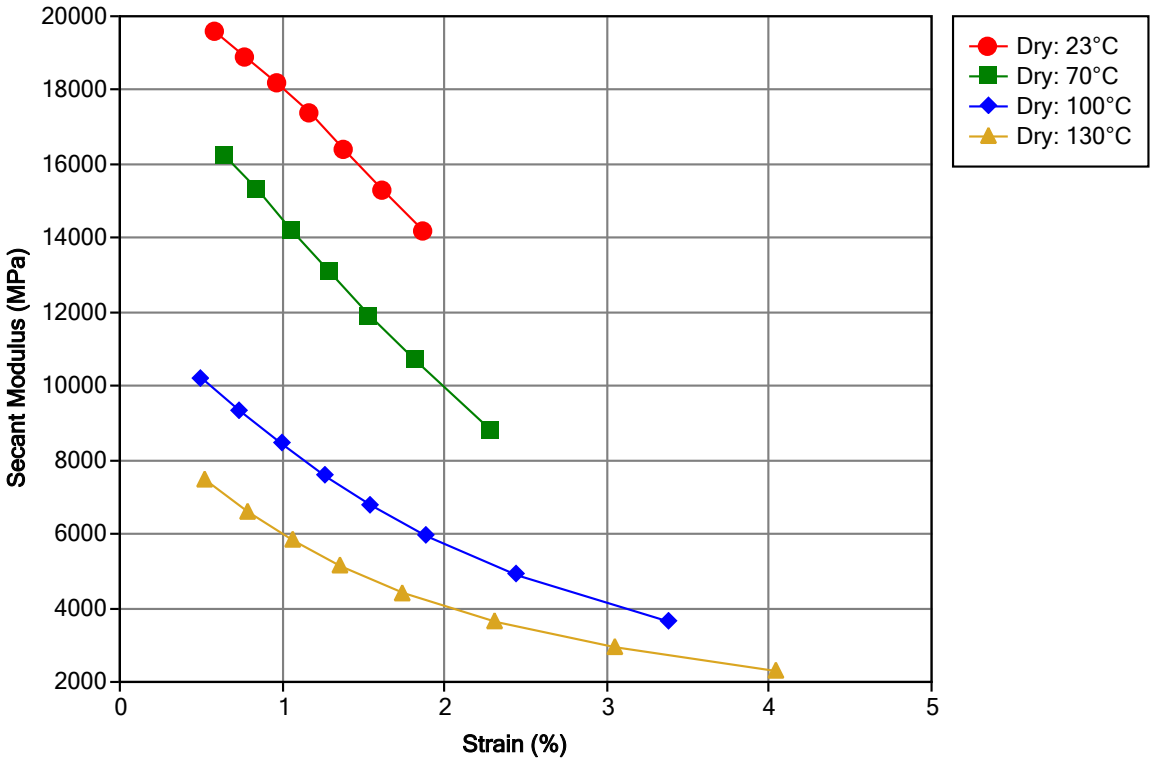
The measured melt temperature should be about 280°C (536°F), and the barrel temperatures should be around 250 to 260°C (482 to 500°F) in the rear zone, gradually increasing to 260 to 290°C (500 to 554°F) in the front zone. If hot runners are used, they should be set to 250 to 260°C (482 to 500°F).

To maximize crystallinity, the temperature of the mold cavity surface must be held between 120 and 140°C (248 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%).

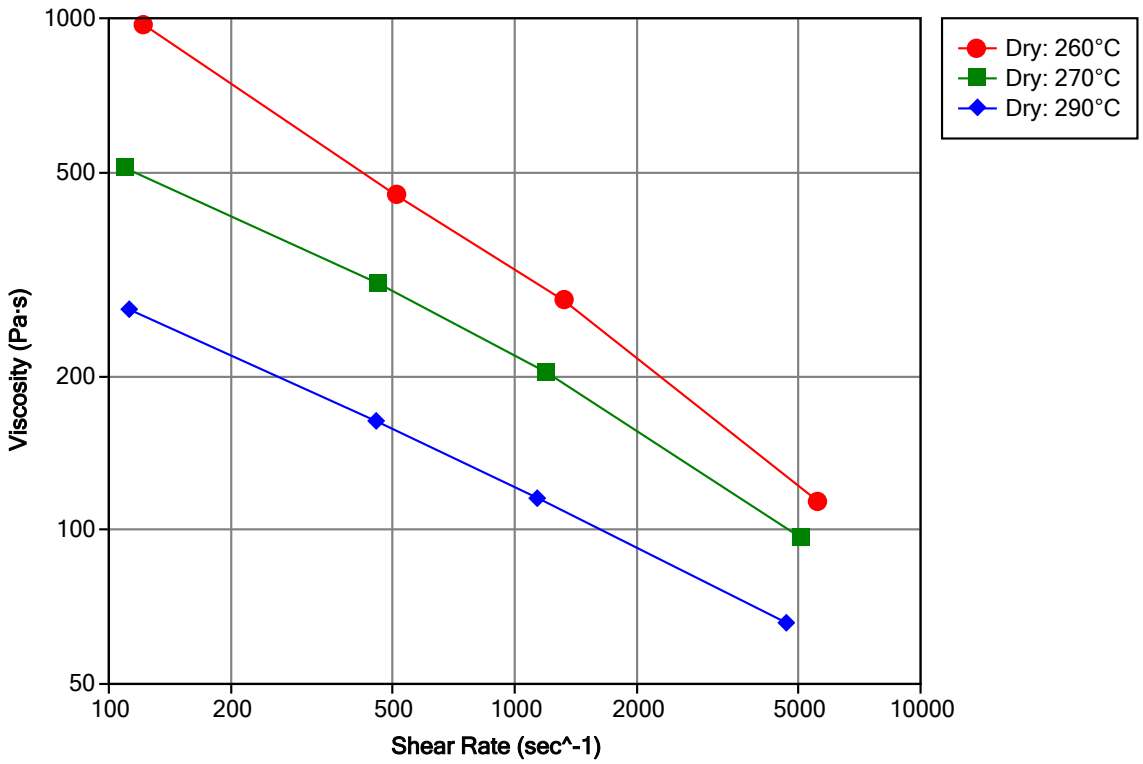
Isothermal Stress vs. Strain (ISO 11403)



Secant Modulus vs. Strain (ISO 11403)



Viscosity vs. Shear Rate (ISO 11403)



Notes

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

[1] These flammability ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

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