

# Ixef® GS-1022

## polyarylamide

Ixef® GS-1022 is a 50% glass-fiber reinforced grade of polyarylamide (PARA) available in several colors. Parts molded from these colored resins can withstand high-energy gamma radiation without significant change in appearance and physical properties. Ixef® GS-1022 resins demonstrate no evidence of cytotoxicity, sensitization, intracutaneous reactivity or acute systemic toxicity, based on biocompatibility testing as defined by ISO 10993-1.

This resin offers superior strength and stiffness combined with outstanding surface gloss and exceptional flow and is well suited for medical applications, such as single use

surgical instruments and structural device housings, and applications in food service equipment.

Colors available:

- Brown: GS-1022 BN01
- Blue: GS-1022 BU01
- Green: GS-1022 GN01
- Grey: GS-1022 GY01
- Grey: GS-1022 GY02
- Grey: GS-1022 GY51
- White: GS-1022 WH01

### General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight	
Additive	• Gamma Stabilizer	
Features	• Biocompatible • Chemical Resistant • Creep Resistant • E-beam Sterilizable • Ethylene Oxide Sterilizable • Good Dimensional Stability • Good Sterilizability • High Flow	• High Strength • Low Moisture Absorption • Outstanding Surface Finish • Radiation (Gamma) Resistant • Radiation Sterilizable • Radiotranslucent • Ultra High Stiffness
Uses	• Dental Applications • Hospital Goods • Medical Devices	• Medical/Healthcare Applications • Surgical Instruments
Agency Ratings	• ISO 10993	
RoHS Compliance	• Contact Manufacturer	
Appearance	• Colors Available	
Forms	• Pellets	
Processing Method	• Injection Molding	

Physical	Typical Value	Unit	Test method
Density	1.78	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage	0.10 to 0.30	%	ISO 294-4
Water Absorption (24 hr, 23°C)	0.28	%	ISO 62
Moisture Absorption			
Equilibrium, 50% RH : 23°C	0.95	%	ISO 1110
Equilibrium, 65% RH	1.5	%	Internal Method

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Mechanical	Typical Value	Unit	Test method
Tensile Modulus	22000	MPa	ISO 527-2
Tensile Stress (Break)	265	MPa	ISO 527-2
Tensile Strain (Break)	1.8	%	ISO 527-2
Flexural Modulus	22000	MPa	ISO 178
Flexural Stress	380	MPa	ISO 178

Impact	Typical Value	Unit	Test method
Unnotched Izod Impact Strength	50	kJ/m <sup>2</sup>	ISO 180

Thermal	Typical Value	Unit	Test method
Heat Deflection Temperature 1.8 MPa, Unannealed	230	°C	ISO 75-2/A
CLTE - Flow	1.5E-5	cm/cm/°C	ISO 11359-2

### Additional Information

Property values for individual batches will vary within specification limits. Values shown are typical of Ixef GS-1022/WH01 resin; other colorants may alter values.

There will be a shift in color when comparing pre-gamma sterilization and postgamma sterilization colors. It is also expected that the colors will revert to some degree, back toward the as-molded color. Lighter colors may display the greatest variation.

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Injection	Typical Value	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° to 260°C (482° 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.

## Notes

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

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