

Ixef® 1622

polyarylamide

Ixef® 1622 is an impact modified, 50% glass-fiber reinforced polyarylamide. which exhibits very high strength and rigidity, outstanding surface gloss, and excellent impact resistance.

- Natural: Ixef® 1622/0003
- Black: Ixef® 1622/9003
- Custom Colorable

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 | • Impact Modifier | |
| Features | • Chemical Resistant • Creep Resistant • Good Dimensional Stability • High Flow • High Stiffness | • High Strength • Impact Modified • Low Moisture Absorption • Outstanding Surface Finish |
| Uses | • Appliance Components • Appliances • Automotive Applications • Automotive Electronics • Business Equipment • Camera Applications • Electrical Housing • Electrical/Electronic Applications | • Furniture • Gears • Housings • Industrial Applications • Lawn & Garden Equipment • Machine/Mechanical Parts • Metal Replacement • Power/Other Tools |
| RoHS Compliance | • RoHS Compliant | |
| Appearance | • Black • Colors Available | • Natural Color |
| Forms | • Pellets | |
| Processing Method | • Injection Molding | |

| Physical | Dry | Conditioned | Unit | Test method |
|---------------------------------------|--------------|-------------|-------------------|-----------------|
| Density | 1.60 | -- | g/cm ³ | ISO 1183 |
| Molding Shrinkage - Flow ¹ | 0.10 to 0.30 | -- | % | Internal Method |
| Water Absorption | | | | |
| 24 hr, 23°C | 0.19 | -- | % | ISO 62 |
| Equilibrium, 65% RH | 1.5 | -- | % | Internal Method |

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| Mechanical | Dry | Conditioned | Unit | Test method |
|------------------------|-------|-------------|------|-------------|
| Tensile Modulus | 17000 | 16000 | MPa | ISO 527-1 |
| Tensile Stress | | | | ISO 527-2 |
| Yield | -- | 200 | MPa | |
| Break | 235 | -- | MPa | |
| Tensile Strain (Break) | 2.6 | 2.7 | % | ISO 527-2 |
| Flexural Modulus | 17000 | -- | MPa | ISO 178 |
| Flexural Stress | 360 | -- | MPa | ISO 178 |

| Impact | Dry | Conditioned | Unit | Test method |
|-----------------------|------|-------------|------|-------------|
| Notched Izod Impact | 120 | -- | J/m | ASTM D256 |
| Unnotched Izod Impact | 1100 | -- | J/m | ASTM D4812 |

| Thermal | Dry | Conditioned | Unit | Test method |
|-----------------------------------|-----|-------------|------|-------------|
| Deflection Temperature Under Load | | | | ISO 75-2/A |
| 1.8 MPa, Annealed | 220 | -- | °C | |

| Electrical | Dry | Conditioned | Unit | Test method |
|----------------------------------|--------|-------------|-------|-------------|
| Electric Strength | 25 | -- | kV/mm | IEC 60243-1 |
| Dielectric Constant ² | | | | ASTM D2520 |
| 1.00 GHz | 4.23 | -- | | |
| 2.40 GHz | 4.27 | -- | | |
| Dissipation Factor ² | | | | ASTM D2520 |
| 1.00 GHz | 9.5E-3 | -- | | |
| 2.00 GHz | 9.5E-3 | -- | | |

| Flammability | Dry | Conditioned | Unit | Test method |
|--------------------------|-----|-------------|------|-------------|
| Flame Rating (> 0.60 mm) | HB | -- | | UL 94 |
| Oxygen Index | 25 | -- | % | ISO 4589-2 |

Additional Information

Dry Unless otherwise specified, Typical Values are obtained from Dry (also called DAM, Dry as Molded) samples. For Conditioned data, samples are tested at 50% Relative Humidity.

| 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 280 | °C |
| Processing (Melt) Temp | 270 | °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).

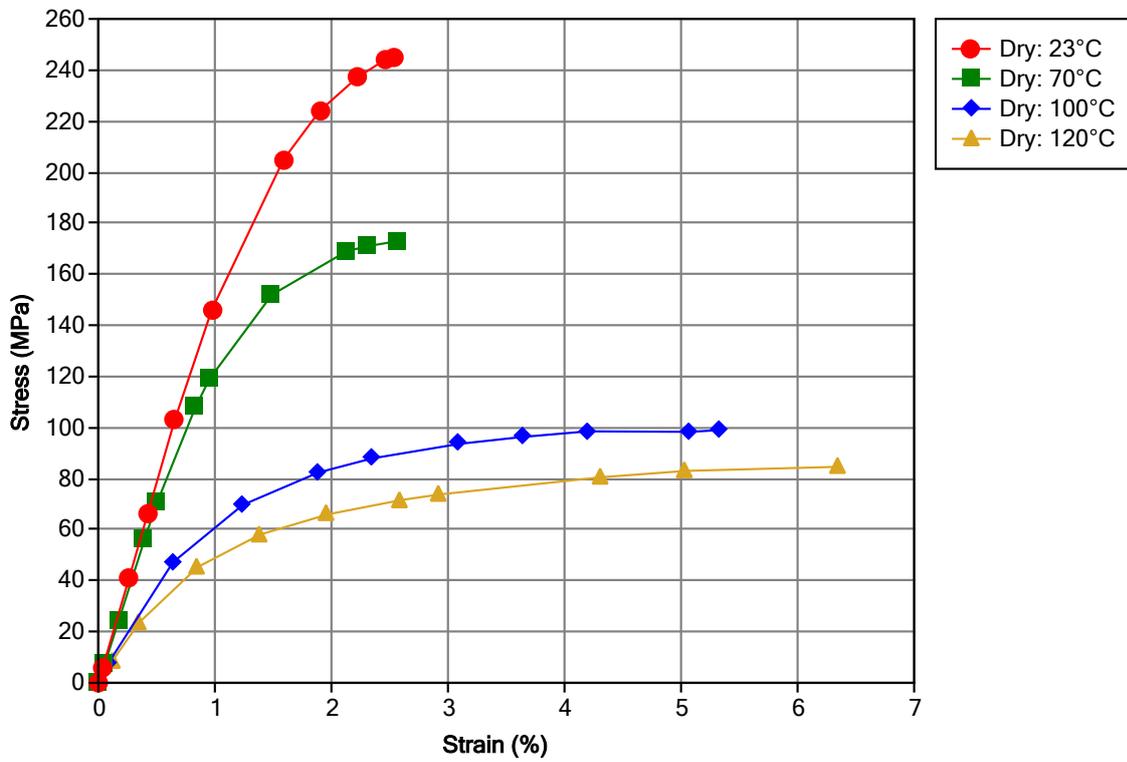
Injection Molding

Ixef 1622 compound can be readily injection molded in most screw injection molding machines. A general purpose screw is recommended, with minimum back pressure.

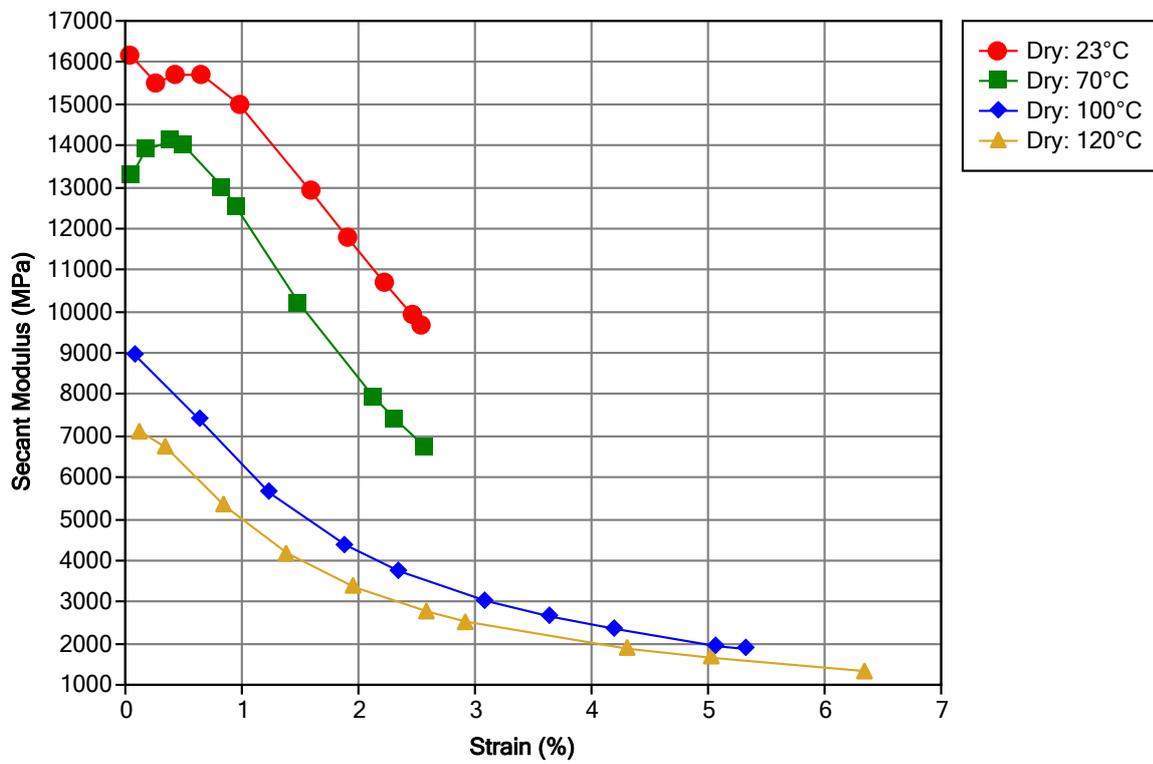
The measured melt temperature should be about 270°C (518°F), and the barrel temperatures should be around 250°C to 260°C (482°F to 500°F) in the rear zone, gradually increasing to 260°C to 280°C (500°F to 536°F) in the front zone. If hot runners are used, they should be set to 250°C to 260°C (482°F to 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%).

Isothermal Stress vs. Strain (ISO 11403)



Secant Modulus vs. Strain (ISO 11403)



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Notes

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

¹ 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.)

² Method B

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