# XANTAR® G4F 23 R

PC-GF20 FR — Mitsubishi Engineering-Plastics Corporation

## Product Texts

20% Glass Reinforced, Flame Retardant

ISO 1043 PC-GF20 FR

XANTAR® Polycarbonate & Blends, your global partner for innovative added value

| Rheological properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Melt volume-flow rate, MVR | 6 | cm³/10min | ISO 1133 |
| Temperature | 300 | °C | ISO 1133 |
| Load | 1.2 | kg | ISO 1133 |
| Molding shrinkage, parallel | 0.2 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 0.5 | % | ISO 294-4, 2577 |

| Mechanical properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Tensile Modulus | 6000 | MPa | ISO 527-1/-2 |
| Stress at break | 95 | MPa | ISO 527-1/-2 |
| Strain at break | 4 | % | ISO 527-1/-2 |
| Puncture - maximum force, +23°C | 900 | N | ISO 6603-2 |
| Puncture - maximum force, -30°C | 900 | N | ISO 6603-2 |
| Puncture energy, +23°C | 6 | J | ISO 6603-2 |
| Puncture energy, -30°C | 4 | J | ISO 6603-2 |

| Thermal properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Temp. of deflection under load (1.80 MPa) | 145 | °C | ISO 75-1/-2 |
| Vicat softening temperature, 50°C/h 50N | 150 | °C | ISO 306 |
| Coeff. of linear therm. expansion, parallel | 30 | E-6/K | ISO 11359-1/-2 |
| Burning behav. at 1.5 mm nom. thickn. | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 1.5 | mm | IEC 60695-11-10 |
| UL recognition | UL | - | - |
| Burning behav. at thickness h | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 1.2 | mm | IEC 60695-11-10 |
| UL recognition | UL | - | - |
| Oxygen index | 35 | % | ISO 4589-1/-2 |

| Electrical properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Relative permittivity, 100Hz | 3.25 | - | IEC 60250 |
| Relative permittivity, 1MHz | 3.2 | - | IEC 60250 |
| Dissipation factor, 100Hz | 9 | E-4 | IEC 60250 |
| Dissipation factor, 1MHz | 90 | E-4 | IEC 60250 |
| Volume resistivity | >1E13 | Ohm*m | IEC 60093 |
| Surface resistivity | >1E15 | Ohm | IEC 60093 |
| Electric strength | 29 | kV/mm | IEC 60243-1 |
| Comparative tracking index | 200 | - | IEC 60112 |

| Other properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Water absorption | 0.29 | % | Sim. to ISO 62 |
| Density | 1350 | kg/m³ | ISO 1183 |

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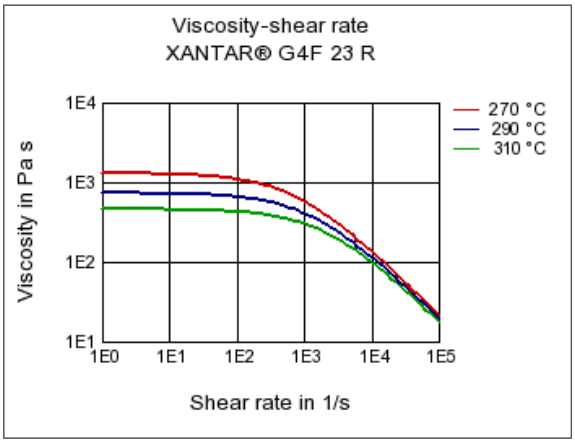
| Rheological calculation properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Density of melt | 1170 | kg/m³ | - |
| Thermal conductivity of melt | 0.29 | W/(m K) | - |
| Spec. heat capacity of melt | 1530 | J/(kg K) | - |
| Eff. thermal diffusivity | 1.62E-7 | m²/s | - |
| Ejection temperature | 134 | °C | - |

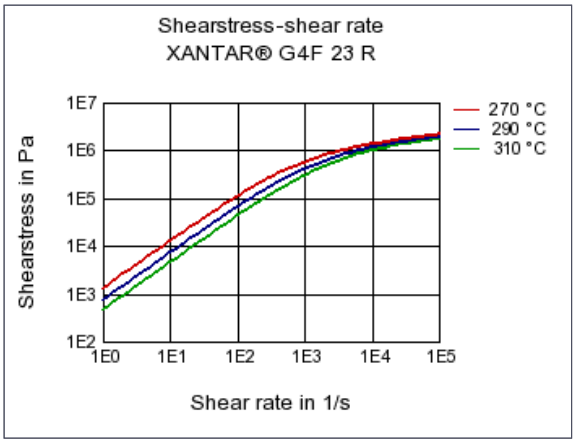
| Test specimen production | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Injection Molding, melt temperature | 300 | °C | ISO 294 |
| Injection Molding, mold temperature | 100 | °C | ISO 10724 |

### Diagrams

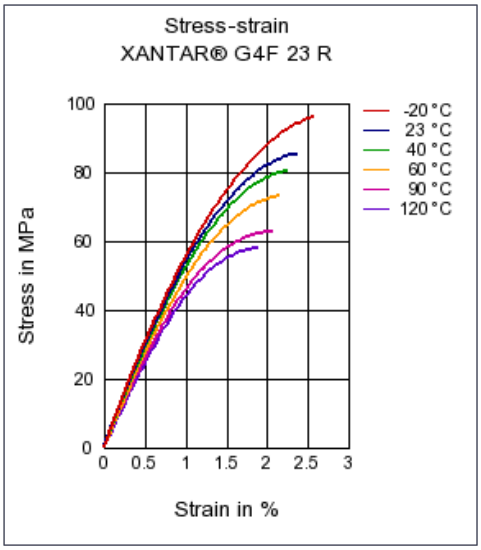
#### Viscosity-shear rate



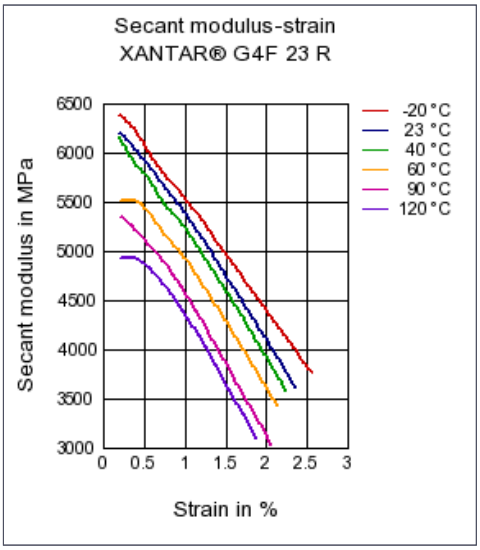

#### Shearstress-shear rate



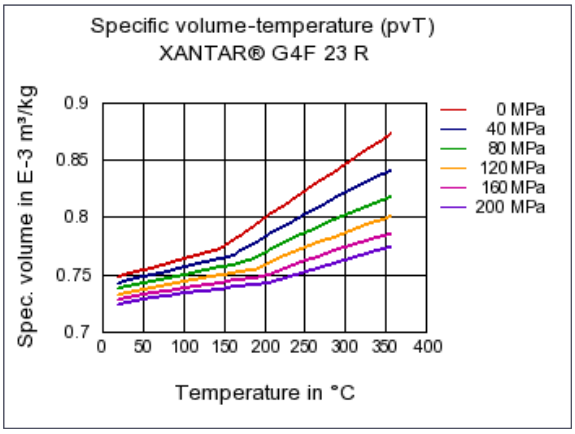

#### Stress-strain




#### Secant modulus-strain



## Specific volume-temperature (pvT)




## Characteristics

**Processing**
Injection Molding

**Additives**
Release agent

**Delivery form**
Pellets

**Special Characteristics**
Flame retardant, Heat stabilized or stable to heat

## Other text information

**Injection Molding**
Injection Molding Recommendations

## Chemical Media Resistance

### Acids

- Acetic Acid (5% by mass) (23°C)
- Citric Acid solution (10% by mass) (23°C)
- Lactic Acid (10% by mass) (23°C)
- Hydrochloric Acid (36% by mass) (23°C)
- Nitric Acid (40% by mass) (23°C)
- Sulfuric Acid (38% by mass) (23°C)
- Sulfuric Acid (5% by mass) (23°C)
- Chromic Acid solution (40% by mass) (23°C)

### Bases

- Sodium Hydroxide solution (35% by mass) (23°C)
- Sodium Hydroxide solution (1% by mass) (23°C)
- Ammonium Hydroxide solution (10% by mass) (23°C)

### Alcohols

- Isopropyl alcohol (23°C)
- Methanol (23°C)
- Ethanol (23°C)

### Hydrocarbons

- n-Hexane (23°C)
- Toluene (23°C)
- iso-Octane (23°C)

### Ketones

- Acetone (23°C)

### Ethers

- Diethyl ether (23°C)

**Salt solutions**

- Sodium Chloride solution (10% by mass) (23°C)
- Sodium Hypochlorite solution (10% by mass) (23°C)
- Sodium Carbonate solution (20% by mass) (23°C)
- Sodium Carbonate solution (2% by mass) (23°C)
- Zinc Chloride solution (50% by mass) (23°C)

**Other**

- Ethyl Acetate (23°C)
- Hydrogen peroxide (23°C)
- Water (23°C)
- Phenol solution (5% by mass) (23°C)