# TECANAT GF20

Polycarbonate

Ensinger Inc.

## Message:

TECANAT is a natural unfilled polycarbonate that has transparency, excellent impact strength and tensile properties, TECANAT GF20 is a 20% glass-reinforced polycarbonate with higher temperature and tensile properties than the unfilled TECANAT.
Polycarbonate is an amorphous thermoplastic. Good electrical properties combined with superior impact strength and moderate chemical resistance make this product widely accepted for numerous applications, This product is offered in many popular rod and plate sizes.
Typical applications include business equipment where gears, rollers, internal mechanical parts, connectors and relays are required. The automotive industry uses polycarbonate materials for pumps, valves, light bezels and instrument panels. It also is applicable to many other industries.

| General Information | |
|---|---|
| Filler / Reinforcement | Glass fiber reinforced material, 20% filler by weight |
| Features | Good dimensional stability<br>Rigidity, high<br>High strength<br>Impact resistance, high<br>Machinable<br>Good electrical performance<br>Good chemical resistance<br>Definition, high<br>amorphous |
| Uses | Pump parts<br>Gear<br>Valve/valve components<br>Roller<br>Connector<br>Application in Automobile Field<br>Business equipment |
| Appearance | Clear/transparent<br>Natural color |
| Forms | Plate<br>Bar |

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Specific Gravity | 1.33 | g/cm³ | ASTM D792 |
| Water Absorption [1] | | | ASTM D570 |
| 23°C, 24 hr | 0.16 | % | ASTM D570 |
| Saturated, 23°C | 0.29 | % | ASTM D570 |

| Hardness | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Rockwell Hardness (Class M, 23°C, injection molding) | 87 | | ASTM D785 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | 4830 | MPa | ASTM D638 |
| Tensile Strength (Yield, 23°C) | 82.7 | MPa | ASTM D638 |
| Tensile Elongation (Break, 23°C) | 4.0 | % | ASTM D638 |
| Flexural Modulus (23°C) | 4270 | MPa | ASTM D790 |
| Flexural Strength (23°C) | 124 | MPa | ASTM D790 |
| Compressive Strength | | | ASTM D695 |
| 1% strain | 20.7 | MPa | ASTM D695 |
| 10% strain | 75.8 | MPa | ASTM D695 |
| Coefficient of Friction [2] (vs. Itself - Dynamic) | 0.22 | | |
| Wear Factor [3] (0.28 MPa, 0.25 m/sec) | 240 | 10^-8 $mm^3/N \cdot m$ | ASTM D3702 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Unnotched Izod Impact (23°C) | 110 | J/m | ASTM D256 |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| Deflection Temperature Under Load | | | ASTM D648 |
| 0.45 MPa, unannealed, injection molded | 148 | °C | ASTM D648 |
| 1.8 MPa, unannealed, injection molded | 146 | °C | ASTM D648 |
| Vicat Softening Temperature [4] | 165 | °C | ASTM D1525 |
| CLTE - Flow [5] | 2.7E-5 | cm/cm/°C | ASTM D696 |
| Maximum Service Temperature | | | |
| Intermittent | 135 | °C | |
| Long Term | 130 | °C | UL 746B |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Volume Resistivity [6] | 1.0E+17 | ohms·cm | ASTM D257 |
| Dielectric Strength [7] | 19 | kV/mm | ASTM D149 |
| Dielectric Constant | | | ASTM D150 |
| 1 MHz [8] | 3.13 | | ASTM D150 |
| 23°C, 60 Hz [9] | 3.17 | | ASTM D150 |
| Dissipation Factor [10] (23°C, 60 Hz) | 9.0E-4 | | ASTM D150 |
| **Flammability** | **Nominal Value** | **Unit** | **Test Method** |
| Flame Rating [11] (3.00 mm) | V-0 | | UL 94 |
| **Additional Information** | | | |
| Data obtained from extruded shapes material unless otherwise noted. | | | |
| **NOTE** | | | |
| 1. | Injection Molded | | |
| 2. | 40 psi, 50 fpm; Injection Molded | | |
| 3. | Against Steel, Injection Molded | | |
| 4. | Injection Molded | | |
| 5. | Injection Molded | | |

| | |
|---|---|
| 6. | Injection Molded |
| 7. | Injection Molded |
| 8. | Injection Molded |
| 9. | 50% RH, Injection Molded |
| 10. | Injection Molded |
| 11. | Injection Molded |



## Recommended distributors for this material

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