# TECAST™ 6PA

Polyamide 6

Ensinger Inc.

## Message:

TECAST™ cast nylon, available in a variety of grades, offers a combination of good mechanical properties, excellent bearing and wear characteristics, and the large-size capabilities of the casting process. Its fatigue resistance, noise damping ability, corrosion resistance, and light weight make TECAST™ ideal for metal replacement applications, such as bearings, gears, sheaves, and sprockets. At one-eighth the weight of bronze, TECAST™ is easier to handle and maintain than metals such as iron, aluminum, brass, and bronze, which it typically replaces in industrial wear applications. Other materials that TECAST™ commonly replaces because of its superior performance are laminated phenolics, elastomers, and wood. TECAST™ has excellent wear and abrasion resistance, resulting in extended component life and lower maintenance cost. Its formulations are readily available in rod, plate, and tube. Nonstandard shapes, such as rings, discs, and blocks can be economically produced in small quantities with short lead times. ustom parts can be cast-to-size or near-net-shape with relatively inexpensive tooling.
Its unique combination of strength, wear resistance, toughness, machinability, and corrosion resistance make TECAST™ cast nylon ideal for bearings, thrust washers, bushings, wear pads, sheaves, rollers, gears, sprockets, and wheels. TECAST™ is commonly used in construction equipment, material handling systems, amusement park rides, pulp and paper processing equipment, steel mills and industrial equipment.
TECAST™ 6PA NATURAL: An FDA-compliant cast type 6 nylon used in applications requiring cast nylon advantages without fillers.
TECAST™ 6PA BLACK: A black cast type 6 nylon that is more UV resistant than 6PA natural.
TECAST™ 6PA BLUE: A blue cast type 6 nylon with properties similar to 6PA. Heat stable but with improved heat resistance properties.

| General Information | |
|---|---|
| Features | Noise reduction |
| | Machinable |
| | Good corrosion resistance |
| | Good wear resistance |
| | Good wear resistance |
| | Fatigue resistance |
| | Good toughness |
| Uses | Wheels |
| | Bushing |
| | Gear |
| | Industrial application |
| | Roller |
| | Architectural application field |
| | Metal substitution |
| | Thrust washer |
| | Bearing |
| Appearance | Black |
| | Blue |
| | Natural color |
| Forms | Plate |
| | Bar |

Pipe

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Specific Gravity | 1.15 - 1.16 | g/cm³ | ASTM D792 |
| Water Absorption (23°C, 24 hr) | 1.2 | % | ASTM D570 |
| **Hardness** | **Nominal Value** | **Unit** | **Test Method** |
| Rockwell Hardness (R-Scale, 23°C) | 115 | | ASTM D785 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | 2410 | MPa | ASTM D638 |
| Tensile Strength (Yield, 23°C) | 68.9 | MPa | ASTM D638 |
| Tensile Elongation (Break, 23°C) | 25 | % | ASTM D638 |
| Flexural Modulus (23°C) | 2410 | MPa | ASTM D790 |
| Flexural Strength (23°C) | 86.2 | MPa | ASTM D790 |
| Coefficient of Friction [1] (vs. Itself - Dynamic) | 0.26 | | ASTM D1894 |
| Wear Factor [2] (0.28 MPa, 0.25 m/sec) | 400 | 10^-8 mm³/N·m | ASTM D3702 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Unnotched Izod Impact (23°C) | 32 | J/m | ASTM D256 |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| Deflection Temperature Under Load | | | ASTM D648 |
| 0.45 MPa, not annealed | 188 | °C | ASTM D648 |
| 1.8 MPa, not annealed | 93.3 | °C | ASTM D648 |
| Melting Temperature | 220 | °C | ASTM D2133 |
| CLTE - Flow | 7.2E-5 | cm/cm/°C | ASTM D696 |
| Specific Heat | 1670 | J/kg/°C | |
| Maximum Service Temperature | | | |
| Intermittent | 149 | °C | |
| Long Term | 93 | °C | UL 746B |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Volume Resistivity | 1.0E+14 | ohms·cm | ASTM D257 |
| Dielectric Strength | 20 | kV/mm | ASTM D149 |
| Dielectric Constant [3] (23°C, 60 Hz) | 3.70 | | ASTM D150 |
| **Flammability** | **Nominal Value** | **Unit** | **Test Method** |
| Flame Rating | HB | | UL 94 |
| **Additional Information** | | | |
| Data obtained from extruded shapes material. | | | |
| **NOTE** | | | |
| 1. | 40 psi, 50 fpm | | |
| 2. | Against Steel | | |
| 3. | 50% RH | | |

Recommended distributors for this material

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