# TECAMID™ 612

Polyamide 612

Ensinger Inc.

## Message:

Nylon was the first engineering resin. It has been used in applications ranging from electronic, marine, and automotive industries to fibers used to make carpet. Nylon has outstanding wear resistance and low frictional properties. It has very good temperature, chemical, and impact properties. However, nylon's one weakness is a propensity to absorb moisture and thus have poor dimensional stability.
TECAMID® has an excellent balance of properties which make it an ideal material for metal replacement in applications such as automotive parts, industrial valves, railway tie insulators, and other industry uses whose design requirements include high strength, toughness, and weight reduction.
Type 6/12 nylon. This nylon has lower moisture absorpton rates than nylon 6/6, hence superior dimensional stability.

| General Information | | | |
|---|---|---|---|
| Features | Low friction coefficient | | |
| | High strength | | |
| | Impact resistance, good | | |
| | Good chemical resistance | | |
| | Good wear resistance | | |
| | Good toughness | | |
| Uses | Valve/valve components | | |
| | Industrial application | | |
| | Metal substitution | | |
| | Application in Automobile Field | | |
| Forms | Shapes | | |
| **Physical** | **Nominal Value** | **Unit** | **Test Method** |
| Specific Gravity | 1.06 | g/cm³ | ASTM D792 |
| Water Absorption | | | ASTM D570 |
| 23°C, 24 hr | 0.25 | % | ASTM D570 |
| Saturated, 23°C | 3.0 | % | ASTM D570 |
| **Hardness** | **Nominal Value** | **Unit** | **Test Method** |
| Rockwell Hardness (R-Scale, 23°C) | 114 | | ASTM D785 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | 2070 | MPa | ASTM D638 |
| Tensile Strength (Yield, 23°C) | 55.2 | MPa | ASTM D638 |
| Tensile Elongation (Break, 23°C) | 20 | % | ASTM D638 |
| Flexural Modulus (23°C) | 1900 | MPa | ASTM D790 |
| Compressive Strength | 16.5 | MPa | ASTM D695 |
| Coefficient of Friction (vs. Itself - Static) | 0.31 | | ASTM D1894 |
| Wear Factor [1] (0.28 MPa, 0.25 m/sec) | 380 | 10^-8 mm³/N·m | ASTM D3702 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Unnotched Izod Impact (23°C) | 48 | J/m | ASTM D256 |

| Thermal | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Deflection Temperature Under Load (1.8 MPa, Unannealed) | 61.1 | °C | ASTM D648 |
| Melting Temperature | 217 | °C | ASTM D2133 |
| CLTE - Flow | 9.0E-5 | cm/cm/°C | ASTM D696 |
| Specific Heat | 1880 | J/kg/°C | |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Volume Resistivity | 1.0E+15 | ohms·cm | ASTM D257 |
| Dielectric Constant [2] | | | ASTM D150 |
| 23°C, 60 Hz | 4.00 | | ASTM D150 |
| 23°C, 1 MHz | 3.50 | | ASTM D150 |
| Dissipation Factor (23°C, 60 Hz) | 0.020 | | ASTM D150 |
| **Flammability** | **Nominal Value** | **Unit** | **Test Method** |
| Flame Rating (0.860 mm) | HB | | UL 94 |
| **Additional Information** | | | |
| Data obtained from extruded shapes material. | | | |
| **NOTE** | | | |
| 1. | Against Steel | | |
| 2. | 50% RH | | |



## Recommended distributors for this material

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