Property Data

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# Stanyl® TW241F10

## PA46–GF50

*50% Glass Fiber Reinforced, Heat Stabilized, Lubricated*

Print Date: 2026–01–27

Stanyl® TW241F10 is a high heat polyamide that offers excellent creep resistance, strength, stiffness and fatigue resistance especially at high temperatures in combination with cycle–time advantages and excellent flow. TW241F10 has an excellent track–record in gear applications and structural parts

| PROPERTIES | TYPICAL DATA | UNIT | TEST METHOD |
|---|---|---|---|
| **RHEOLOGICAL PROPERTIES** | DRY / COND | | |
| Molding shrinkage [parallel] | 0.4 / * | % | Sim. to ISO 294–4 |
| Molding shrinkage [normal] | 0.9 / * | % | Sim. to ISO 294–4 |
| **MECHANICAL PROPERTIES** | DRY / COND | | |
| Tensile modulus | 16000 / 10000 | MPa | ISO 527–1/–2 |
| Tensile modulus (120°C) | 8500 / – | MPa | ISO 527–1/–2 |
| Tensile modulus (160°C) | 7200 | MPa | ISO 527–1/–2 |
| Tensile modulus (180°C) | 6600 | MPa | ISO 527–1/–2 |
| Tensile modulus (200°C) | 6000 | MPa | ISO 527–1/–2 |
| Stress at break | 250 / 150 | MPa | ISO 527–1/–2 |
| Stress at break (120°C) | 140 / – | MPa | ISO 527–1/–2 |
| Stress at break (160°C) | 120 | MPa | ISO 527–1/–2 |
| Stress at break (180°C) | 110 | MPa | ISO 527–1/–2 |
| Stress at break (200°C) | 100 | MPa | ISO 527–1/–2 |
| Strain at break | 2.7 / 5 | % | ISO 527–1/–2 |
| Strain at break (120°C) | 5 / – | % | ISO 527–1/–2 |
| Strain at break (160°C) | 5.5 | % | ISO 527–1/–2 |
| Strain at break (180°C) | 5.5 | % | ISO 527–1/–2 |
| Strain at break (200°C) | 6 | % | ISO 527–1/–2 |
| Flexural modulus | 15000 / 9000 | MPa | ISO 178 |
| Flexural modulus (120°C) | 7300 | MPa | ISO 178 |

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|---|---|---|---|
| Flexural modulus (160°C) | 6500 | MPa | ISO 178 |
| Flexural strength | 380 / 250 | MPa | ISO 178 |
| Flexural strength (120°C) | 180 | MPa | ISO 178 |
| Flexural strength (160°C) | 150 | MPa | ISO 178 |
| Charpy impact strength (+23°C) | 100 / 110 | kJ/m² | ISO 179/1eU |
| Charpy impact strength (–30°C) | 90 / 100 | kJ/m² | ISO 179/1eU |
| Charpy notched impact strength (+23°C) | 16 / 24 | kJ/m² | ISO 179/1eA |
| Charpy notched impact strength (–30°C) | 14 / 14 | kJ/m² | ISO 179/1eA |
| Izod notched impact strength (+23°C) | 16 / 24 | kJ/m² | ISO 180/1A |
| Izod notched impact strength (–40°C) | 14 / 14 | kJ/m² | ISO 180/1A |
| **THERMAL PROPERTIES** | **DRY / COND** | | |
| Melting temperature (10°C/min) | 295 / * | °C | ISO 11357–1/–3 |
| Temp. of deflection under load (1.80 MPa) | 290 / * | °C | ISO 75–1/–2 |
| Temp. of deflection under load (0.45 MPa) | 290 / * | °C | ISO 75–1/–2 |
| Coeff. of linear therm. expansion (parallel) | 0.13 / * | E–4/°C | ISO 11359–1/–2 |
| Coeff. of linear therm. expansion (normal) | 0.66 / * | E–4/°C | ISO 11359–1/–2 |
| Coeff. of linear therm. expansion (parallel) | 0.25 | E–4/°C | ASTM D696 |
| Coeff. of linear therm. expansion (normal) | 0.4 | E–4/°C | ASTM D696 |
| Thermal conductivity through plane | 0.48 | W/(m K) | ASTM E1461 |
| Relative Temperature Index – electrical | 65 | °C | UL746B |
| RTI electrical (Thickness (1) tested) | 0.75 | mm | UL746B |
| Thermal Index 5000 hrs | 177 | °C | IEC 60216/ISO 527–1/–2 |
| **ELECTRICAL PROPERTIES** | **DRY / COND** | | |
| Volume resistivity | 1E12 / 1E8 | Ohm*m | IEC 62631–3–1 |
| Electric strength | 30 / 20 | kV/mm | IEC 60243–1 |
| Comparative tracking index | 300 / – | V | IEC 60112 |
| Relative permittivity (100Hz) | 4.3 / 16 | – | IEC 62631–2–1 |

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| *PROPERTIES* | *TYPICAL DATA* | *UNIT* | *TEST METHOD* |
|---|---|---|---|
| Relative permittivity (1 MHz) | 4 / 4.7 | – | IEC 62631–2–1 |
| ***OTHER PROPERTIES*** | ***DRY / COND*** | | |
| Humidity absorption | 1.85 / * | % | Sim. to ISO 62 |
| Density | 1620 / – | kg/m³ | ISO 1183 |

## Tens. fatigue 8Hz, T, R=0.1 , dry