

Torlon®



SOLVAY

asking more from chemistry®

Torlon® PAI

polyamide-imide

**SPECIALTY
POLYMERS**

Torlon® PAI

Torlon® PAI offers the highest strength and stiffness of any thermoplastic up to 275 °C (525 °F). Its outstanding wear, creep and chemical resistance make it ideal for severe service environments.

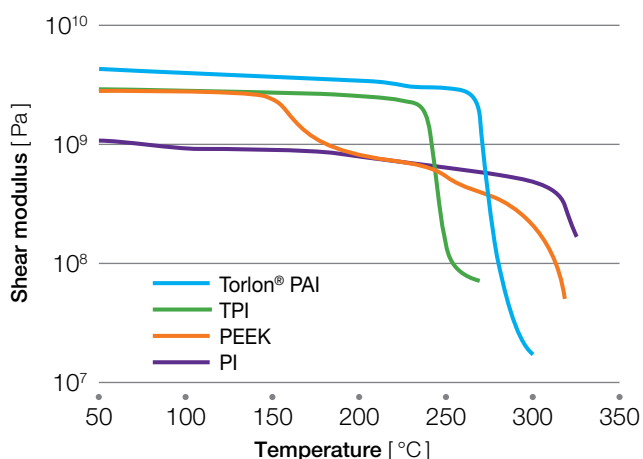
Key features

- Very high strength and stiffness to 275 °C
- Superior toughness from cryogenic to 275 °C
- Exceptional wear resistance
- Resistant to strong acids and most organics
- Inherent flame resistance
- Low CLTE

High-strength grades deliver metal-like performance and are routinely specified for precision components used in repetitive-use, load-bearing operations. Glass fiber and carbon fiber filled grades retain their strength and stiffness at high temperatures with the added benefit of low creep and excellent fatigue resistance.

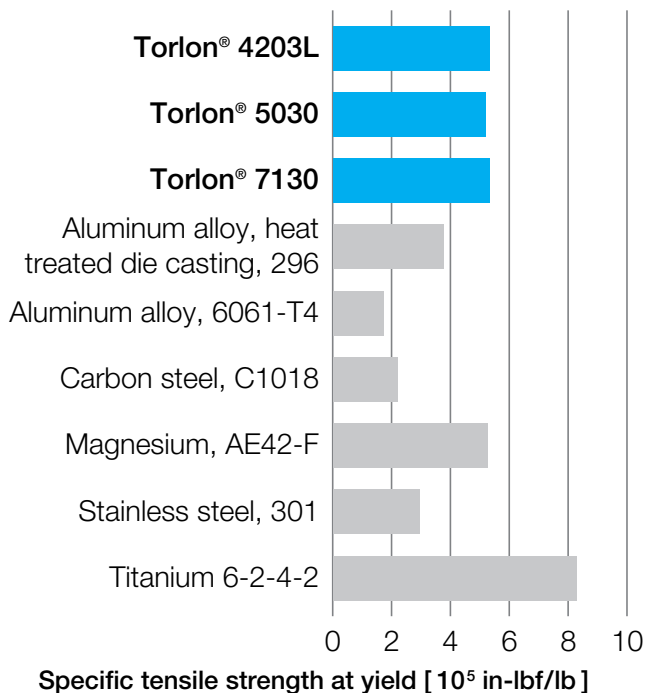
Wear-resistant grades offer select combinations of mechanical and tribological properties. Their inherent heat and chemical resistance, makes them an effective alternative to metal in high-temperature friction and wear applications—even when lubrication is marginal or non-existent. Select grades can perform in lubricated environments at exceptionally high pressures and velocities (PV).

Mechanical performance at high temperature⁽¹⁾



⁽¹⁾Data generated by dynamic mechanical thermal analysis (DMTA).

Specific tensile strength comparison to metal



Torlon® PAI injection molding grades

High strength

| | |
|-------|--|
| 4203L | General purpose, unfilled |
| 5030 | Glass fiber, high stiffness, very low creep |
| 7130 | Carbon fiber, very high stiffness, excellent fatigue resistant |

Wear resistant

| | |
|------|--|
| 4275 | Designed for high speeds |
| 4301 | General-purpose, high compressive strength |
| 4435 | Designed for high PVs |
| 4630 | Exceptional wear resistance, dry |
| 4645 | Exceptional wear resistance, lubricated |

Specialty

| | |
|------|--|
| 4601 | Designed for undercut tooling such as deep groove bearings |
|------|--|

Torlon® PAI is also available in extrusion and compression molding grades used to produce stock shapes for machining and low-volume production. A related line of Torlon® amide-imide (AI) powders used to manufacture high-temperature adhesives, non-stick coating primers, composite matrices, coatings and films are available.

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