



Ultrasint® PA6

The Best Material Solution for Durable Parts with Outstanding High Temperature Performance

Ultrasint® PA6 is the material of choice for advanced technical applications in tough environments. Besides PA6 being one of the most-used technical polymer for serial production applications, Ultrasint® PA6 boasts high strength and rigidity, uncompromising media tightness, as well as excellent thermal distortion and heat-ageing performance – properties where other PBF materials often show limitations. Ultrasint® PA6 thus redefines the horizon for PBF applications.

Benefits at a Glance

- High strength and rigidity
- Media tightness as-printed
- High HDTs
- Excellent heat-ageing performance
- Colors: Black and white

Example Applications

- Engine compartment parts
- Jigs and fixtures
- Piping and media flow/storage parts
- Fluid reservoirs
- Multi-purpose industrial goods

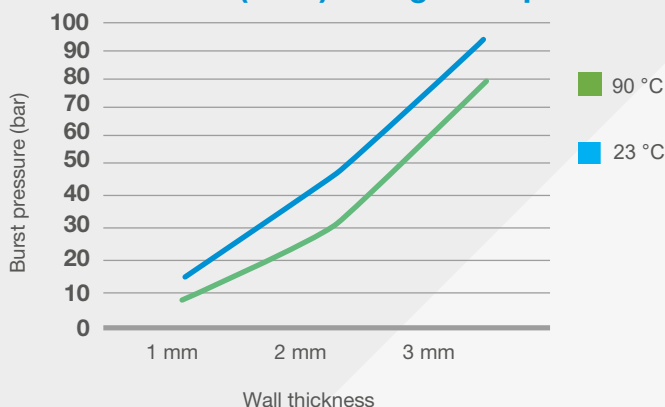
Material Properties

Tensile Strength	47 MPa
Young's Modulus	1700 MPa
Elongation at Break	16 %
Charpy Impact unnotched	6.8 kJ/m²
HDT B (0.45 MPa, dry)	192 °C

Key Features

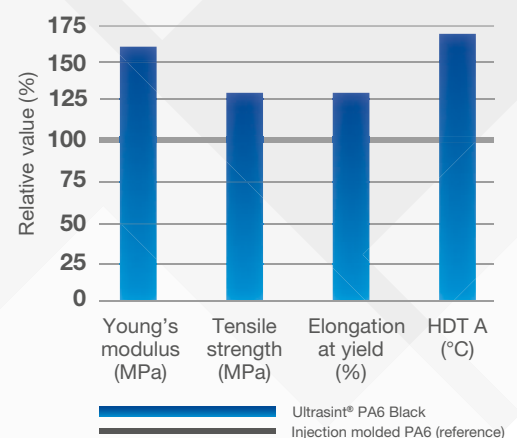
Ultrasint® PA6 combines high thermal resistance with outstanding mechanical performance – without compromise.

Burst Pressure (even) at High Temperatures



- Burst pressure up to 90 bar (geometry-dependent)
- Excellent long-term heat-ageing performance up to ~120 °C
- Even higher thermal resistance for short-term use

Benchmark with Injection Molded PA6



- Superior performance vs. injection molded neat PA6
- Lower water uptake compared to Injection Molding
- Reduced ductility is easily compensated via redesign

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Project Reference Brake Fluid Reservoir

- This brake fluid reservoir printed using Ultrasint® PA6 was used by Daimler as a functional prototype
- No leakage or burst even at very high temperatures and inner pressure for the duration of the whole test series
- Lower water uptake compared to injection molded PA6, with easy weldability
- Semi-translucency allows visual detection of filling level
- Readily implemented material model allows for further part optimization via BASF Ultrasim® simulation and design services