

Material Datasheet — MXD6 Polyamide (Glass-Fibre Reinforced)



Aromatic polyamide (MXD6) reinforced with glass fibres; very high stiffness and strength with good dimensional stability.

This datasheet is suitable for designers of threaded components and hinge assemblies made from this material.

Key specifications

Item	Value
Continuous Use Temperature	≈ 105 °C / 221 °F
UL 94 Flame Rating	HB (typical non-FR)
Density	1.45–1.60 g/cm ³

Mechanical properties (typical)

Property	Test method	Typical value	Unit
Tensile strength (23 °C, dry)	ISO 527	180–260	MPa
Tensile modulus (23 °C, dry)	ISO 527	9–14	GPa
Flexural modulus	ISO 178	8–12	GPa

Thermal properties

Property	Test method	Typical value	Unit
Melting temperature	ISO 11357	240–260	°C
HDT (1.8 MPa)	ISO 75	200–230	°C

Electrical properties

Property	Test method	Typical value	Unit
Dielectric strength	IEC 60243	12–20	kV/mm

Tribology

Property	Test method	Typical value	Unit
Coefficient of friction	—	0.25–0.35	—

Moisture & environment

Property	Test method	Typical value	Unit
Water absorption (24 h)	ISO 62	0.4–0.8	%
Equilibrium water absorption	ISO 62	1.5–3.0	%

Chemical compatibility — high-level guidance

Better dimensional stability than aliphatic PA; still sensitive to acids.

Assembly guidance — threaded parts & hinges

- Use a torque wrench and target application-validated torque; account for material creep/relaxation over time.
- Distribute bearing stresses with appropriate washers or flange features.
- For low-friction materials, consider prevailing-torque nuts, thread-locking, or mechanical locking features.
- Avoid sharp stress concentrators near thread run-outs and hinge knuckles; use generous fillets and radii.
- Observe service temperature, environment (chemicals/UV/steam), and moisture conditioning effects before final torque/preload selection.
- Match mating material where galvanic/corrosion or differential expansion could be a factor.