

PLASTIC-CRAFT

Hydlar Z

MoS₂-Filled Nylon 6/6 — Bearing Grade

845-358-3010
ecom@plastic-craft.com
www.plastic-craft.com

Premium bearing-grade nylon with molybdenum disulfide (MoS₂) for enhanced lubricity and wear resistance. Hydlar Z delivers significantly lower friction and improved dimensional stability over standard nylon — the first choice for high-load bearings, gears, and wear components operating without external lubrication.

STOCK AVAILABILITY

Rods, sheets, and tubes in standard sizes. Recognizable by its dark gray/black color. Most common sizes ship from stock.

KEY HIGHLIGHTS

- Self-lubricating (MoS₂)
- Lower friction than nylon
- Enhanced wear resistance
- Better dimensional stability
- Higher fatigue endurance
- Quieter operation
- ✓ Outperforms standard nylon in every wear & friction metric

COMMON APPLICATIONS

- Bearings & bushings
- Gears & sprockets
- Wear pads & slides
- Rollers & guide wheels
- Thrust washers
- Conveyor components
- Sheaves & pulleys

GRADES AVAILABLE

- Hydlar Z (MoS₂ nylon 6/6)
- Standard rods & sheets
- Custom machined parts
- Also available: oil-filled nylon

MATERIAL PROPERTIES — TYPICAL VALUES

PROPERTY	ASTM	TYPICAL VALUE	UNITS
PHYSICAL			
Specific Gravity	D792	1.15 – 1.16	—
Water Absorption, 24h	D570	0.25 – 0.40	%
Water Absorption, Saturation	D570	5.5 – 6.5	%
MECHANICAL			
Tensile Strength, Ultimate	D638	11,500	psi (79 MPa)
Tensile Modulus	D638	420,000	psi (2,900 MPa)
Elongation at Break	D638	25	%
Flexural Strength	D790	15,000	psi (103 MPa)
Flexural Modulus	D790	400,000	psi (2,760 MPa)
Compressive Strength (10%)	D695	12,000	psi (83 MPa)
Impact, Izod Notched	D256	1.0 – 1.2	ft-lb/in (53–64 J/m)
Hardness, Rockwell	D785	R118 – R120	—
FRICTION & WEAR			
Coefficient of Friction (dynamic)	D3702	0.15 – 0.20	vs. steel
Wear Factor, K	D3702	50 – 80	10 ⁻¹⁰ in ³ .min/ft-lb-hr
PV Limit	D3702	15,000	psi-fpm
THERMAL			
Heat Deflection @ 264 psi	D648	194	°F (90°C)
Max Continuous Service	—	210	°F (99°C)
Melting Point	D3418	500	°F (260°C)
CTE (Linear)	D696	4.5 × 10 ⁻⁵	in/in/°F
ELECTRICAL			
Volume Resistivity	D257	10 ¹² – 10 ¹⁴	ohm-cm
Dielectric Strength	D149	300 – 400	V/mil
FLAMMABILITY			
UL Flammability Rating	UL 94	V-2	—

PROCESSING / FABRICATION NOTES: Excellent machinability — better surface finish than unfilled nylon | Allow for moisture expansion in designs (0.2–0.3% growth per 1% moisture) | Anneal after heavy machining for stress relief | Dark gray/black color distinguishes from natural nylon

CHEMICAL RESISTANCE: Resistant to hydrocarbons, oils, greases, ketones, and weak alkalis. Good resistance to fuels. **AVOID:** strong mineral acids (HCl, H₂SO₄, HNO₃), phenols, formic acid, and oxidizing agents.

Typical values; not to be used as specifications. Actual values may vary by grade, manufacturer, and processing conditions. Contact Plastic-Craft for grade-specific data.