A GUIDE TO NYLON 6,6 ALTERNATIVES
ARE YOU CONTEMPLATING ALTERNATIVES TO NYLON 6,6, BUT FEELING THE PRESSURE TO DELIVER ON PERFORMANCE? Whether you’re working on a new application or considering a material switch, selecting the right material can expand your success. Did you know that with the right formulation, you can achieve properties that are as good or better than that of PA 6,6 using materials such as PA 6, PK, PBT/PET, PP, polymer blends and even post-industrial recycled blends?

Knowing the benefits and drawbacks to such a switch can help you get started down the right path for your specific application needs.

HOW ALTERNATIVE POLYMERS COMPARE TO PA 6,6

PA 6 | POSSIBLE APPLICATIONS:
Automotive, Industrial, Consumer & Sporting Goods

BENEFITS VS. PA 6,6
- Wider processing temperature range
- Better surface quality
- Better weathering resistance
- Shorter conditioning time—nearly half that of PA 6,6

DRAWBACKS VS. PA 6,6
- Lower temperature resistance
- Slightly lower chemical resistance
- Higher water absorption
- Lower stiffness/wear resistance

PK | POSSIBLE APPLICATIONS:
Automotive, Consumer & Sporting Goods, Industrial, Electrical & Electronics

BENEFITS VS. PA 6,6
- Lower CO₂ emissions in production
- Better hydrolysis and chemical resistance
- Comparable dimensional stability
- Inherently lubricious for reduced wear and friction
- Easier to mold
- Cost competitive

DRAWBACKS VS. PA 6,6
- Lower short- and long-term thermal performance
- Harder to color
- More limited process window
**PBT/PET | POSSIBLE APPLICATIONS:**
Electrical & Electronics

**BENEFITS VS. PA 6,6**
- Lower water absorption
- Better dimensional stability
- Slightly higher rigidity/stiffness (for PBT)
- Better abrasion resistance
- Slightly better electric resistance

**DRAWBACKS VS. PA 6,6**
- Lower toughness properties
- Higher density
- Lower short- and long-term temperature resistance
- Lower hydrolysis resistance

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**PP | POSSIBLE APPLICATIONS:**
Automotive, Consumer Goods, Lightweighting Applications

**BENEFITS VS. PA 6,6**
- Lower water absorption
- Better dimensional stability
- Slightly better chemical resistance
- Lower density
- Cost effective
- Fiber reinforced PP can achieve similar or better mechanical properties to PA 6,6 GF30

**DRAWBACKS VS. PA 6,6**
- Reduced rigidity/stiffness
- Much lower abrasion resistance
- Lower electric resistance
- Reduced short- and long-term temperature resistance

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**PC/PBT & PC/PET BLENDS | POSSIBLE APPLICATIONS:** Automotive Interiors, Consumer Goods, Household Appliances

**BENEFITS VS. PA 6,6**
- Higher impact strength
- Good scratch resistance
- Good wear resistance

**DRAWBACKS VS. PA 6,6**
- Lower mechanical properties
- Higher brittleness
- Narrow processing temperature range
PA 6,6/PET BLENDS
POSSIBLE APPLICATIONS: Automotive, Industrial, Appliance, Electrical & Electronics, Applications Where Low Water Absorption is Required

BENEFITS VS. PA 6,6
- Reduced water absorption—up to 40%
- Better dimensional stability
- Slightly higher mechanical properties in the conditioned state

DRAWBACKS VS. PA 6,6
- Slightly lower temperature resistance
- Slightly lower chemical resistance
- Narrow processing temperature range

PA/PP BLENDS | POSSIBLE APPLICATIONS:
Automotive Interiors, Electronics, Consumer & Sporting Goods

BENEFITS VS. PA 6,6
- Good adhesion to polyolefin-based TPEs
- Low permeability of water
- Good processability
- Lower density

DRAWBACKS VS. PA 6,6
- Lower temperature resistance
- Lower mechanical properties

POST-INDUSTRIAL RECYCLED SOLUTIONS (PA 6,6/PA 6/PP)
POSSIBLE APPLICATIONS: Automotive Accessories, Industrial, Consumer & Sporting Goods

BENEFITS VS. PA 6,6
- Between 50-80% recycled content
- Good processability
- Cost effective

DRAWBACKS VS. PA 6,6
- Reduced chemical resistance
- Wider range of mechanical specifications
- Slightly lower mechanical properties