

# 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 CO<sub>2</sub> 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

# **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

# 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







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