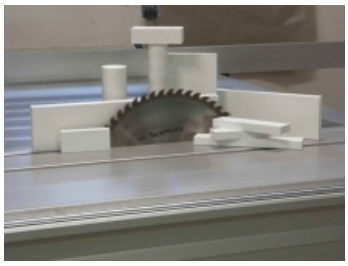
PET - polyethylene terephthalate

Other material names PET: PETP
Material group: PET



PET is an unreinforced, semi-crystalline thermoplastic polyester based on polyethylene terephthalate. It is characterized as having the best dimensional stability coupled with excellent wear resistance, a low coefficient of friction, high strength, and resistance to moderately acidic solutions. PET's properties make it especially suitable for the manufacture of precision mechanical parts which are capable of sustaining high loads and enduring wear conditions. PET's continuous service temperature is 100°C and its melting point is almost higher than acetals.

In addition, PET offers good chemical and abrasion resistance. Its low moisture absorption enables mechanical and electrical properties to remain virtually unaffected by moisture. PET can be machined to precise detail on standard metal working equipment.

PET is an excellent candidate for parts used in the food processing and equipment industries.

Color of material:

White

Typical applications:

- Manifolds machined
- Food manufacturing and processing equipment
- Carousel
- Filter Track
- Locating Disk
- Rings

The material is used in:

Beverage industry
Food industry

Features:

- Good for both wet and dry environments
- High strength and rigidity -- ideal for close tolerance parts
- Excellent stain resistance
- Good wear resistance and excellent dimensional stability
- Better resistance to acids than nylon or acetal

Material availability: Some sizes are in stock

Material properties table

Specific weight	1.38 g/cm³
Yield strength	80 N/mm²
Allowable mean pressure deformation 1%	26.00 N/mm²
Allowable mean pressure deformation 2%	51.00 N/mm²
Allowable mean pressure deformation 5%	93.00 N/mm²
p.v dry limit	0.15 MPa.m/s
Flexural strength	125 N/mm²
Tensibility	40 %
Flexural modulus	2 600 N/mm²
Tensile modulus	3 000 N/mm²
Impact toughness	bez zlomu
Notched toughness	>4 kJ/m²
Ball hardness	140 N/mm²
Friction coefficient	0.25
Sliding wear	0.35 um/km
Abrasive wear	610
Antistatic material	No
Permittivity	3.40
Electrical strength	60 kV/mm
Specific internal resistance	10^(15) Ω
Specific surface resistance	10^(14) Ω.cm
Melting point	255 °C
Thermal expansion	7 10^(-5)/K
Thermal conductivity	0.24 W/(K.m)
Permanent use temperature	-20 ; 100 °C
Transient temperature of use	-20 ; 160 °C
Absorbability	0,25 %
Water absorption	0,5 %
Resistance - oils	resistant
Acid resistance	conditionally resistant
Durability - alcali	conditionally resistant
Food contact	Yes

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