

TECAFINE PMP

Chemical Designation: Polymethylpentene

DIN Abbreviation: PMP

Colour, Filler: Transparent

TECAFINE PMP is a semi-crystalline engineering thermoplastic (TPX) with good transparency (when machined and polished) and chemical resistance, low density and good electrical properties.

Main characteristics:

- Transparent, even in the UV range
- Very tough
- Good chemical and hot water resistance
- Extremely light
- Very good electrical insulation
- Good slip properties
- Easily machined and polished
- Difficult to bond
- Good weldability

Preferred fields: Electrical engineering, microwave technology, precision engineering, household goods, foodstuffs, medical technology, mechanical engineering, vehicle technology

Applications:

- Microwave dishes
- Inspection glasses
- Masks
- Housing parts
- Seals
- Microwave insulators
- Plugs
- High frequency insulators
- Agitators and kneading elements

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TECAFINE PMP

The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.

Properties	Unit	Test method DIN EN ISO / ASTM	
Mechanical			
Density	g/cm ³	527 / D 792	0.83
Tensile strength at yield	MPa	527 / D 638	15
Tensile strength at break	MPa	527 / D 638	
Elongation at break	%	527 / D 638	
Modulus of elasticity in tension	MPa	527 / D 638	1500
Modulus of elasticity in flexure	MPa	178 / D 790	
Ball indentation hardness	MPa	2039 / 1	85
Impact strength	kJ/m ²	179 / D 256	no br.
Creep rupture strength after 1000 hrs with static load	MPa		
Time yield limit for 1% elongation after 1000 hrs.	MPa		
Coefficient of friction against hardened and ground steel $p = 0,05 \text{ N/mm}^2$, $v = 0,6 \text{ m/s}$	-		
Wear conditions as above	µm/km		
Thermal			
Crystalline melting point	°C	DIN 53 736	245
Glass transition temperature	°C	DIN 53 736	20
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	51 85

Properties	Unit	Test method DIN EN ISO / ASTM	
Thermal			
Max. service temperature short term long term	°C °C		180 120
Coefficient of thermal conductivity	W/(m · K)		0.17
Specific heat	J/(g · K)		2.18
Coefficient of thermal expansion	10 ⁻⁶ /K	DIN 53 483 / D 696	12
Electrical			
Dielectric constant at 10 ⁵ Hz		DIN 53 483	2.12
Dielectric loss factor at 10 ⁵ Hz		DIN 53 483	
Specific volume resistance	Ω · cm	DIN 60093	10 ¹⁴
Surface resistance	Ω	DIN 60093	10 ¹³
Dielectric strength 1 mm	kV/mm	ASTM 149	65
Tracking resistance		53 480	KA 3c/KB > 600/ KC > 600
Miscellaneous			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	<0.05
Water absorption at saturation at 23 °C	%	62	0.01
Resistance to hot water, washing soda			resistant
Flammability according to UL standard 94			HB
Resistance to weathering			not resistant

ENSINGER: Production and stock programme

- Semi-finished product, finished parts, injection moulded parts and profiles in more than 500 materials and modifications.
- Engineering plastics: PA extruded or cast, POM, PC, PET, PBT, PPE, PP, PE
- High temperature plastics: PI, TPI, PEEK, PPS, PES, PPSU, PEI, PSU, PVDF, PCTFE, PTFE
- Stock length: Standard 3 metres. Cast rod and sheet 2 mts. Tube up to 3.5 mts. PE, PP, PVC, and PTFE 2 mts
- Pressed/sintered semi-finished product: PI, PEEK, PPS, PTFE/PI and modifications, as well as PCTFE in special sizes ie, large discs, tubes and rings with diameters up to about 1400 mm
- Material modifications: eg. glass, carbon and aramid fibre, talc, MoS₂, graphite, PTFE, PE, silicone oil, internal lubrication