

Arnite TX / PETP TX

This is a semi-crystalline polyester modified with solid lubricants. It has excellent mechanical and tribologic properties. It has a high dimensional stability, a very low coefficient of friction combined with low friction characteristics and superior self-lubricating. All this enhances the typical characteristics of Arnite®. It shows excellent results in precision applications, also for use without lubrication, with rapid cycling and high surface speeds. Very suitable for machine processing and approved for contact with food.

Physical Properties (indicative values)

GENERAL PROPERTIES		Test Method	Units	Value
Density		ISO 1183	g/cm ³	1.45
Water absorption				
- at saturation in air of 23°C / 50% R.H.		ISO 62	%	0.25
- at saturation in water 23°C		ISO 62	%	0.48
MECHANICAL PROPERTIES				
Tensile stress at yield and break		ISO 527	N/mm ²	76
Elongation at break		ISO 527	%	7
Tensile modulus of elasticity		ISO 527	N/mm ²	3450
Compression test				
- 1% strain after 1,000 hrs		ISO 899	-	-
Charpy impact strength - Notched		ISO 179-1/1eU	KJ/mm ²	2.5
Charpy impact strength - Unnotched		ISO 179-1/1eA	KJ/mm ²	30
Ball indentation hardness		ISO 2039	N/mm ²	160
Shore hardness D		ISO 2039	D	94
Coefficient of friction to steel ⁽¹²⁾		ISO 8295	-	0.15
THERMAL PROPERTIES				
Melting temperature		ISO 3156	°C	255
Thermal conductivity at 23°C		ISO 22007.2	W/(km)	0.29
Deformation temperature ⁽¹⁵⁾		ISO 75	°C	75
Coefficient of linear thermal expansion				
- average value between 23 and 60°C		ISO 11359	m(m.K)	60 x 10 ⁻⁶
Max. allowable service temperature in air				
- Continuously ⁽¹⁷⁾		-	°C	115
- Short periods ⁽¹⁸⁾		-	°C	160
Minimum service temperature ⁽¹⁹⁾		-	°C	-20
Flamability				
- Oxygen index		ISO 4589	%	22
- according to UL 94 (3/6 thickness)		UL94	-	HB
ELECTRICAL PROPERTIES				
Dielctrical constant		ISO 250	-	3.2
Dielectric strength		ISO 243	KV/mm	21
Volume resistivity		ISO 93	Ωcm	-
Dissipation factor tan Δ at 1 MHz		ISO 250	-	0.014

Legend

- Figures relate to specimen conditioned at 23°C and 50 RH. Figures between brackets relate to dry specimen. Figures for materials marked with * can change according to their moisture content.

- Figures refer to un-coloured samples either injection moulded or machined in the easiest way. Tests made on samples of different sizes give slightly different results.

⁽¹²⁾ Test on ground steel dry specimen load
0.05 N/mm² speed =0.6 m/s

⁽¹⁵⁾ Deformation at temperature . HDT at 1.8 N/mm²

⁽¹⁷⁾ Operating temperature continuously 5000h. From 23°C upwards, the materials' features change in a non-uniform and disproportional way. The quoted limits are indicative and based on a tensile stress of 50% of the value at 23°C.

⁽¹⁸⁾ Operating temperature short period (no load).

⁽¹⁹⁾ The mechanical features decrease with a reduction in temperature and are also influenced by other factors (moisture, etc). The quoted values do not take into consideration impact conditions or heavy loads.

This table, is mainly to be used for comparison purposes. It's a valuable tool to help in the choice of material. The data listed here falls within the normal range of product properties. However, they aren't guaranteed and shouldn't be used to establish material specification limits nor used alone as the basis of design.

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