

Technical Data Sheet

GEHR PA 12 TR[®]



I. Physical Properties¹⁾

	Test method	Unit	Value
1. Specific gravity (ρ)	ISO 1183	g/cm ³	1,00
2. Water absorption	ISO 62	%	3
3. Humidity absorption			1,5
4a. Maximum permissible service temp	UL746B	°C	100
4b. Lower permissible service temp			-

II. Mechanical Properties

	Test method	Unit	Value
1. Tensile strength at yield (σ_s)	ISO 527	MPa	66
2. Elongation at yield. (ϵ_s)		%	6
3. Tensile strength at break (σ_R)		MPa	45
4. Elongation at break (ϵ_R)		%	≥ 50
5. Impact strength (a_n)	ISO 179	kJ/m ²	n.b.
6. Notch impact strength (a_k)			13
7. Ball indentation (H_k)/Rockwell hardness	ISO 2039	MPa	90
8. Shore-D	ISO 868		83
9. Flexural strength ($\sigma_{B,3.5\%}$)	ISO 178	MPa	-
10. Modulus of elasticity (E_t)	ISO 527		1470

III. Thermal Properties

	Test method	Unit	Value
1. Vicat-softening point. VST/B/50	ISO 306	°C	-
VST/A/50			-
2. Heat deflection temperature. HDT/B	ISO 75		135
HDT/A			115
3. Coef. of linear thermal expansion (α)	ISO 11359	K ⁻¹ *10 ⁻⁴	0,9
4. Thermal conductivity at 20 °C (λ)	ISO 22007-4	W/(m*K)	-
5. Glass transition temperature. (T_g)	ISO 3146	°C	155
6. Melting temperature (T_m)			155

IV. Electrical Properties

	Test method	Unit	Value
1. Volume resistivity (ρ_D) ⁸⁾	IEC 60093	Ω*cm	≥ 10 ¹¹
2. Surface resistivity (R_o) ⁸⁾		Ω	≥ 10 ¹³
3. Dielectric constant at 1MHz (ϵ_r)	IEC 60250	-	-
4. Dielectric loss factor at 1 MHz ($\tan\delta$)		-	-
5. Dielectric strength	IEC 60243-1	kV/mm	34
6. Tracking resistance	IEC 60112	V	CTI 600

V. Additional Data

	Test method	Unit	Value
1. Bondability	-	-	+
2. Physiological indifference ⁵⁾ according	EEC	-	+
	FDA	-	NSF
3. Flammability	UL 94	-	HB
4. Limiting Oxygen Index (LOI)	ASTM D2863	%	-
4. UV stabilisation ⁶⁾	-	-	+

1) The physical data contained in this table are typical values and reflect the current state of our knowledge. The data are arithmetic average values which are tested by test specimens made out of rods (ø 40-60 mm). These has to be understood as guidelines, and shall not be used for specification purposes for finished parts. Missing data are completed by data of the raw materials.

2) Pretreatment necessary 3) 65 (rods 160 - 200 mm Ø) 57 (rods 220 - 300 mm Ø)

4) 59 (rods 160 - 200 mm ø), 51 (rods 220 - 300 mm Ø) 5) Physiological indifferences are valid for nature coloured materials on the raw material side. There are also approvals for our semi-finished products available or in preparation. Please check this separately with us.

6) valid for nature coloured materials. An additional UV protection can taken over by special pigments e.g. carbon black.

7) Test results without UL registration 8) Data are only valid for natural colours 9) Data taken from raw material *Self-assessment without test certificate * Own classification without official test report

n.b.= no break + = yes o = limited - = no/no data available