GEHR PA12 TR®

Clearly the new king of anti-corrosion materials

GEHR PA12 TR® is a highly innovative **low moisture absorbing** transparent Polyamide.

This polymer is used for applications with demanding requirements regarding resistance to chemicals and dynamic strength (high tensile strength with the added property of transparency).
Additionally, **GEHR PA12 TR®** has an excellent UV resistance and tremendous climatic and atmospheric conditions endurance.
GEHR PA12 TR® exhibits a surprisingly good stress crack resistance, although there is a lower stress failure level for amorphous materials. The material´s fatigue strength value is more than 30 MPa (10 million flexural fatigue cycles). Furthermore this product offers several benefits

Properties

- Transparency
- Good chemical and stress crack resistance
- High dynamic bending strength
- Hot water resistance
- Sea water resistance
- Weather resistance (UV)
- UL listing (HB)
- Suitability for sterilization (γ-rays: 3 Mrad; ethylene oxide)
- Low density (1.0 g/cm³)
- Bondability (reaction bonding additives)
- Easy processing
- Abrasion resistance

KEY BENEFITS of GEHR PA12 TR® compared to Polycarbonate (PC)

- Warm water resistance **(80-100 °C or 176-212 °F)**
- Cold Water resistance (FDA)
- No Bisphenol A
- 17% lower density than PC
- Good notched impact strength (6.2 ft-lbs)
- Low water absorption (3 % at saturation)
- Low humidity absorption (1.5 %, 24 hours)
- High dimension stability
- Resistance to Calcium chloride
- Flexural fatigue resistance
- Infrared resistant
- Superior optical quality when buffed or flame polished
- High scratch resistance

GEHR PA12 TR®

Round Rods and Sheets

GEHR PA12 TR® Round Rods in transparent color are available within our stock program in the following diameters:

ø mm	Tolerances mm		CLEARGEHR® Nylon LMA
	min.	max.	kg/m
40	+ 0,2	+ 1,1	**1,339** ⊕
80	+ 0,4	+ 2,0	**5,402** ⊕
100	+ 0,6	+ 2,5	**8,438** ⊕

Color: ⊕ transparent

Custom production of diameters between 20 mm and 100 mm is possible with a minimum run, upon request.

GEHR PA12 TR® sheets can be produced as a custom in a width between 610 mm and 1000 mm and a thickness of 10 mm up to 100 mm.

For futher information please refer to the **GEHR delivery program 2014** or the product finder on our website **www.gehrplastics.com**

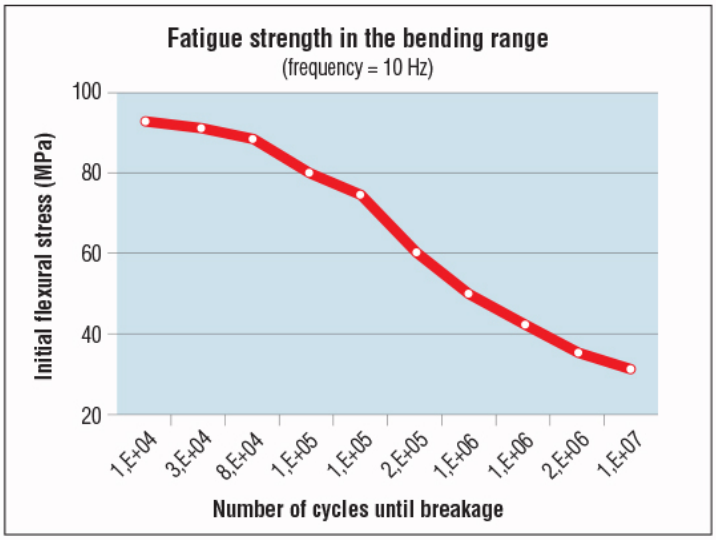
Applications

IR sensor housings, light barrier, material handling parts, dairy equipment parts, parts for filtration systems, covers, boxes, transportation parts, dunnage, tanks, guarding, site/view components, lighted table tops, shelving, sign and graphic, etc.

Approvals

- FDA
- USP Class VI*
- NSF-61*
- WRAS*
- KTW*
- 2002 / 72 / EC
- BfR

* on demand



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Technical Properties

GEHR PA12 TR®

I. Physical Properties		Test method	Unit	Value
1. Specific gravity		ISO 1183	g/cm³	1,00
2. Water absorption		ISO 62	%	1,5 / 3
3. Maximum permissible service temp.				–
(no stronger mechanical stress involved)		–		
Upper temperature limit		ISO 2578	°F	176 - 212
Lower temperature limit		–	°F	–
II. Mechanical Properties				
1. Tensile strength at yield		ISO 527	kpsi	– / 8.7
2. Elongation at yield		ISO 527	%	– / 6
3. Tensile strength at break		ISO 527	kpsi	– / 6.5
4. Elongation at break		ISO 527	%	>= 50
5. Impact strength		ISO 179/2	ft-lbf/in²	no break
6. Notch impact strength		ISO 179/2	ft-lbf/in²	– / 6.2
7. Ball indentation / Rockwell hardness			MPa	– / 13.1
8. Shore-D		ISO 179/2	–	– / 82
9. Flexural strength		ISO 178	kpsi	–
10. Modulus of elasticity		ISO 527	kpsi	– / 232
III. Thermal Properties				
1. Vicat-softening point	VST/B/50	ISO 306	°F	–
	VST/A/50		°F	–
2. Heat deflection temperature	HDT/B	ISO 75	°F	275 / –
	HDT/A		°F	239 / –
3. Coefficient of linear thermal expansion		ISO 11359	$K^{-1}\ 10^{-4}$	0,9
4. Thermal conductivity at 20 °C			W/(m K)	–
IV. Electrical Properties				
1. Volume resistivity		IEC 60093	Ω m	– / >= 10^{11}
2. Surface resistivity		IEC 60093	Ω	– / >= 10^{12}
3. Dielectric constant at 1 MHz		–	–	
4. Dielectric loss factor at 1 MHz		DIN 53483	–	–
5. Dielectric strength		IEC 60243-1	kV/mm	– / 34
6. Comparative tracking resistance		IEC 60112	–	– / 600
V. Additional Data				
1. Bondability		–	–	+
2. Friction coefficient		DIN 53375	–	–
3. Flammability		ISO 1210	–	HB
4. UV stabilisation		–	–	+

All values are attributes of the used raw materials.
The physical data contained in this table are typical values. They are obtained on test specimens under specific conditions and represent average values of a large number of tests. The results obtained on this tests specimens cannot be applied to finished parts without reservations, as behaviour is influenced by processing and shaping. Reproduction only with our definite permission.

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