

TROGAMID® A4000 natural color

Transparent, amorphous polyamide for injection molding and extrusion

TROGAMID A4000 is an amorphous and transparent polyamide with a glass transition temperature of 135 °C and a light transmission of more than 85%, suitable for injection molding and extrusion.

Listings:

TROGAMID A4000 has been approved for direct contact with foodstuffs by the European Community (Directive 90/128/EEC) and the Food and Drug Administration (FDA – 21st CFR, Section 177.1500 Nylon Resins).

Processing:

TROGAMID A4000 is to be processed according to the instructions given in the brochure „TROGAMID Handling and Processing“. Deviations in molds or processing are possible to a certain extent, if they are required by the cavity or the process itself.

TROGAMID A4000 is supplied as cylindrical pellets in moisture-proof packaging. Especially for extrusion a pre-drying at 100 - 110 °C for 6 to 12 hours could be necessary to obtain a sufficiently dry product.

Further information can be obtained from the Technical Marketing of the High Performance Polymers Business Unit.

Property	Test method		Unit	TROGAMID A4000	
	international	national			
Density	23 °C	ISO 1183	DIN EN ISO 1183	g/cm ³	1.18
Glass Transition Temperature	2 nd heating	DSC-7	DSC-7	°C	135
Tensile test		ISO 527-1/-2	DIN EN ISO 527-1/-2		
Stress at yield				MPa	100
Strain at yield				%	7
Strain at break				%	>50
Tensile modulus		ISO 527-1/-2	DIN EN ISO 527-1/-2	MPa	2700
Flexural modulus		ISO 178	DIN EN ISO 178	MPa	3300
Flexural test		ISO 178	DIN EN ISO 178		
Flexural strength				MPa	130
Flexural strength at 3.5 % strain				MPa	85
Outer fiber strain at maximum stress				%	8.5
Outer fiber strain at break				%	n. r. ²⁾
CHARPY impact strength	23 °C	ISO 179/1eU	DIN EN ISO 179/1eU	kJ/m ²	N ¹⁾
	0 °C			kJ/m ²	N ¹⁾
	- 30 °C			kJ/m ²	N ¹⁾
CHARPY notched impact strength	23 °C	ISO 179/1eA	DIN EN ISO 179/1eA	kJ/m ²	12 C ¹⁾
	0 °C			kJ/m ²	12 C ¹⁾
	- 30 °C			kJ/m ²	11 C ¹⁾
Shore-hardness D		ISO 868	DIN EN ISO 868		88
Ball indentation hardness H30		ISO 2039-1	DIN EN ISO 2039-1	N/mm ²	165
Temperature of deflection		ISO 75-1	DIN EN ISO 75-1		
Method A	1.8 MPa	ISO 75-2	DIN EN ISO 75-2	°C	110
Method B	0.45 MPa			°C	125
Vicat softening temperature		ISO 306	DIN EN ISO 306		
Method A	10 N			°C	135
Method B	50 N			°C	130
Relative permittivity	100 Hz	IEC 60250	DIN VDE 0303- T4		4.4
	1MHz				3.5
Dissipation factor	100 Hz	IEC 60250	DIN VDE 0303- T4		0.013
	1MHz				0.11
Comparative tracking index		IEC 60112	DIN IEC 60112		
Test solution A	CTI				600
	100 drops value				575
Volume resistivity		IEC 60093	DIN IEC 60093	Ohm•m	10 ¹⁶
Surface resistance R _{OA}		IEC 60093	DIN IEC 60093	Ohm	10 ¹⁴
Flammability acc. UL94	0.8 mm	IEC 60695	UL94		V - 2
	1.6 mm				V - 2
Water absorption	saturation	ISO 62	DIN EN ISO 62	%	7.8
Mold shrinkage		ISO 294-4			
in flow direction				%	0.4
in transverse direction				%	0.5

Colorants may effect the properties values.

The data of this table are representative values, but must not be used to establish specifications.

¹⁾ N = no break

C = complete break, encl. hinge break H

²⁾ n. r. = not reached

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