TROGAMID® CX CX9704

Polyamide

Evonik Industries AG

Message:

By selecting specific monomers, one can achieve a crystallizable and permanently transparent polyamide: TROGAMID® CX. The crystallites are so small that they do not scatter visible light, and the material appears transparent to the human eye—a property known as microcrystallinity. Because of its crystallinity, the microcrystalline structure retains important properties such as stress cracking resistance — without clouding. The degree of crystallinity is so negligible, however, that it has no adverse effect on the shrinkage behavior of molded parts. TROGAMID® CX undergoes a similar isotropic shrinkage like amorphous materials.
The combination of good UV resistance, high mechanical strength, permanent transparency, high transmission and superior chemical resistance opens a wide range of applications for TROGAMID® CX. Typical areas of application are in the automotive industry, machinery and engineering, medical technology, the sports and recreation industry, the glasses production, the cosmetics industry and in water treatment and filter technology.
TROGAMID® CX9704:
Low-viscous, permanently transparent polyamide for injection molding

General Information			
Features	Good Abrasion Resistance		
	Good Chemical Resistance		
	Good Dimensional Stability		
	Good Processability		
	Good UV Resistance		
	High ESCR (Stress Crack Resist.)		
	High Impact Resistance		
	Low Shrinkage		
	Low Temperature Impact Resistance		
	Low to No Water Absorption		
	Low Viscosity		
	Scratch Resistant		
Uses	Automotive Applications		
	Cosmetics		
	Engineered Applications		
	Filters		
	Optical Applications		
	Sporting Goods		
Appearance	Clear/Transparent		
	Colors Available		
	Natural Color		
Forms	Granules		
Processing Method	Injection Molding		
Physical	**Nominal Value**	**Unit**	**Test Method**

Density (23°C)	1.02	g/cm³	ISO 1183
Viscosity Number	> 120	cm³/g	ISO 307
Hardness	**Nominal Value**	**Unit**	**Test Method**
Shore Hardness (Shore D)	81		ISO 868
Ball Indentation Hardness	110	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (23°C)	1400	MPa	ISO 527-2
Tensile Stress (Yield, 23°C)	60.0	MPa	ISO 527-2/50
Tensile Strain (Yield, 23°C)	8.0	%	ISO 527-2/50
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Flexural Modulus	1500	MPa	ISO 178
Flexural Stress [1]			ISO 178
3.5% Strain	50.0	MPa	
--	90.0	MPa	
Outer Fiber Strain - at maximum stress [2]	> 10	%	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179/1eA
-30°C, Complete Break	10	kJ/m²	
0°C, Complete Break	11	kJ/m²	
23°C, Complete Break	11	kJ/m²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	No Break		
0°C	No Break		
23°C	No Break		
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature			
0.45 MPa, Unannealed	120	°C	ISO 75-2/B
1.8 MPa, Unannealed	102	°C	ISO 75-2/A
Glass Transition Temperature [3]	132	°C	ISO 11357-2
Vicat Softening Temperature			
--	132	°C	ISO 306/A
--	125	°C	ISO 306/B
CLTE			ISO 11359-2
Flow : 23 to 55°C	9.0E-5	cm/cm/°C	
Transverse : 23 to 55°C	9.0E-5	cm/cm/°C	
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	1.0E+14	ohms	IEC 60093
Volume Resistivity	1.0E+15	ohms·cm	IEC 60093
Relative Permittivity			IEC 60250
23°C, 100 Hz	3.40		
23°C, 1 MHz	3.30		
Dissipation Factor			IEC 60250

23°C, 100 Hz	0.013		
23°C, 1 MHz	0.022		
Comparative Tracking Index			IEC 60112
-- [4]	575	V	
Solution A	600	V	
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.800 mm	HB		
1.60 mm	HB		
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (1.00 mm)	825	°C	IEC 60695-2-13

NOTE	
1.	5.0 mm/min
2.	5.0 mm/min
3.	10 K/min
4.	100 drops value

Recommended distributors for this material

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