

Product Information

TROGAMID® CX9704

TRANSPARENT, AMORPHOUS POLYAMIDE FOR INJECTION MOLDING

TROGAMID® CX9704 is an amorphous and transparent polyamide for the manufacture of parts in the optical industry, like lenses according the injection molding procedure.

TROGAMID® CX9704 is supplied as spherical pellets in moisture-proof packaging.

Pigmentation may affect values.

For information about processing of TROGAMID®, please follow the general commendations about "[Processing of TROGAMID® compounds](#)".

FOR FURTHER INFORMATION PLEASE CONTACT US AT EVONIK-HP@EVONIK.COM
OR VISIT OUR PRODUCT AT WWW.TROGAMID.COM

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile Modulus	1500 / -	MPa	ISO 527
Tensile Strength	60 / -	MPa	ISO 527
Yield stress	60 / -	MPa	ISO 527
Yield strain	8 / -	%	ISO 527
Stress at 50% strain	40 / -	MPa	ISO 527
Stress at break	50 / -	MPa	ISO 527
Nominal strain at break, etB	>50 / -	%	ISO 527
Charpy impact strength, +23°C	N / -	kJ/m ²	ISO 179/1eU
Charpy impact strength, 0°C	N / -	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	10 / 7.8	kJ/m ²	ISO 179/1eA
Type of failure	C / C	-	-
Charpy notched impact strength, 0°C	11 / -	kJ/m ²	ISO 179/1eA

Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	10 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Flexural modulus, var. temp.	1500 / -	MPa	ISO 178
Flexural stress at conv. deflection, var. temp.	50 / *	MPa	ISO 178
Flexural strength, var. temp.	90 / *	MPa	ISO 178
Flexural strain at flexural strength, var. temp.	10 / *	%	ISO 178
Flexural strain at break, var. temp.	N / *	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Glass transition temperature	132 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	102 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	120 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	132 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	125 / *	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	90 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	90 / *	E-6/K	ISO 11359-1/-2

Physical properties	dry / cond	Unit	Test Standard
Water absorption	3.5 / *	%	Sim. to ISO 62
Humidity absorption	1.5 / *	%	Sim. to ISO 62
Density	1020 / -	kg/m ³	ISO 1183
Shore D hardness	81^[b] / -	-	ISO 7619-1
Ball indentation hardness	110 / -	MPa	ISO 2039-1
Density	1020	kg/m ³	ASTM D 792

b: 3 seconds

Burning Behav.	dry / cond	Unit	Test Standard
Burning behav. at thickness h	HB / *	class	IEC 60695-11-10

Thickness tested	0.8 / *	mm	-
Burning behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.6 / *	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested (1)	1	mm	-
Glow Wire Ignition Temperature (GWIT)	825	°C	IEC 60695-2-13
GWIT - thickness tested (1)	1	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 100Hz	3.4 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.3 / -	-	IEC 62631-2-1
Dissipation factor, 100Hz	130 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	215 / -	E-4	IEC 62631-2-1
Volume resistivity, pV	1E13 / -	Ohm*m	IEC 62631-3-1
Surface resistance, RSD	1E14 / -	Ohm	IEC 62631-3-2
Surface resistance , RSA	1E14 / -	Ohm	IEC 62631-3-2
Surface resistivity, σA	1E15 / -	Ohm per square	IEC 62631-3-2
CTI, test solution A, 50 drops value	600 / -	-	IEC 60112

Optical properties	dry	Unit	Test Standard
Haze	2	%	ASTM D 1003
Haze Thickness tested	2	mm	-
Light Transmittance	92	%	ASTM D 1003
Light Transmittance Thickness tested	2	mm	ASTM D 1003

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	30 / *	cm ³ /10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-

Molding shrinkage, parallel	0.5 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.6 / *	%	ISO 294-4, 2577
Mold temperature	80 / *	°C	-
Melt temperature	280 / *	°C	-
Flow length, flow spiral	315	mm	Evonik standard
Flow cross section	6 x 2	mm ²	Evonik standard
Mold temperature, flow spiral	80	°C	Evonik standard
Melt temperature, flow spiral	280	°C	Evonik standard
Injection pressure, flow spiral	1000	bar	Evonik standard

Characteristics

Key Feature, Industrial Sector

Automotive, Aircraft and Aerospace, Electrical and Electronical, Industry and Building Construction, Medical, Optics, Sports and Lifestyle

Key Feature, Processing

Injection Molding, Extrusion

Key Feature, Optics

Transparent, High Gloss

Key Feature, Resistance to

Heat (Thermal Stability), Hydrolysis / Hot water, U.V. / Light / Weathering

Key Feature, Additives

Unfilled

Applications

(Sun-) glasses, Hygiene and cosmetics

Processing

Film Extrusion, Profile Extrusion

Special Characteristics

halogen-free, phosphorus-free, PTFE-free, Amorphous, Low viscosity

Features

Non-corrosive

Color

Natural Color

Delivery form

Spherical Pellets

Chemical Media Resistance

Alcohols

- ✘ Isopropyl alcohol (23°C)
- ✘ Methanol (23°C)
- ✘ Ethanol (23°C)

Ketones

✘ Acetone (23°C)

Salt solutions

- ✔ Sodium Chloride solution (10% by mass) (23°C)
- ✔ Sodium Carbonate solution (20% by mass) (23°C)
- ✔ Sodium Carbonate solution (2% by mass) (23°C)

Other

- ✔ Water (23°C)

Rheological calculation properties	dry	Unit	Test Standard
Density of melt	900	kg/m ³	-
Thermal conductivity of melt	0.25	W/(m K)	-

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