Product Information

TROGAMID® CX9710 NC

MEDIUM-VISCOSITY AND TRANSPARENT POLYAMIDE FOR INJECTION MOLDING WITH RELEASE AGENT

TROGAMID® CX9710 is a medium-viscosity and transparent polyamide for injection molding for the manufacture of parts in the optical industry.

The material absorbs only small amounts of water. Components made from this material therefore show excellent dimensional stability under changing ambient humidity as well as consistent UV-stability and chemical resistance.

TROGAMID® CX9710 is supplied as spherical pellets in moisture-proof packaging.

Pigmentation may affect values.

Key Features

Industrial Sector
Automotive and Mobility, Aircraft and Aerospace, Industry and Engineering, Optics, Sports and Lifestyle

Processing
Injection molding, Extrusion

Optics
Transparent, High gloss

Resistance to
Heat (thermal stability), Hydrolysis / hot water, UV / light / weathering

Conformity
Food contact

Additives
Release agent, Unfilled

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**1400 / -**	MPa	ISO 527
Tensile strength	**60 / -**	MPa	ISO 527
Yield stress	**60 / -**	MPa	ISO 527
Yield strain	**8 / -**	%	ISO 527

Stress at 50% strain	**42 / -**	MPa	ISO 527
Stress at break	**68 / -**	MPa	ISO 527
Nominal strain at break, tB	**190 / -**	%	ISO 527
Tensile creep modulus, 0,5% Strain, 1h	*** / 1400**	MPa	ISO 899-1
Tensile creep modulus, 0,5% Strain, 1000h	*** / 700**	MPa	ISO 899-1
Charpy impact strength, +23°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy impact strength, 0°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**11 / 10.5**	kJ/m²	ISO 179/1eA
Type of failure	**C / C**	-	-
Charpy notched impact strength, 0°C	**14 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -30°C	**13 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Flexural modulus, 23°C	**1700 / -**	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	**50 / -**	MPa	ISO 178
Flexural strength, 23°C	**90 / -**	MPa	ISO 178
Flexural strain at flexural strength, 23°C	**9 / -**	%	ISO 178
Flexural strain at break, 23°C	**N / -**	%	ISO 178

Thermal properties	**dry / cond**	**Unit**	**Test Standard**
Melting temperature	**250 / ***	°C	ISO 11357-1/-3
Glass transition temperature, DSC	**140 / ***	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**108 / ***	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**122 / ***	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**135 / ***	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**130 / ***	°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
Melting Temperature	**250**	°C	ASTM D 3418

Physical properties	**dry / cond**	**Unit**	**Test Standard**
Density	**1020 / -**	kg/m³	ISO 1183
Water absorption	**3.5 / ***	%	Sim. to ISO 62
Humidity absorption	**1.5 / ***	%	Sim. to ISO 62
Shore D hardness	**81**[b] **/ -**	-	ISO 7619-1
Ball indentation hardness	**110 / -**	MPa	ISO 2039-1
Density	**1020**	kg/m³	ASTM D 792

b: 3 seconds

Burning Behav.	**dry / cond**	**Unit**	**Test Standard**
Burning behav. at 1.5 mm nom. thickn.	**HB / ***	class	IEC 60695-11-10
Thickness tested	**1.6 / ***	mm	-
Burning behav. at thickness h	**HB / ***	class	IEC 60695-11-10
Thickness tested	**0.8 / ***	mm	-
Glow Wire Flammability Index (GWFI)	**800**	°C	IEC 60695-2-12
GWFI - thickness tested	**1**	mm	-
Glow Wire Ignition Temperature (GWIT)	**775**	°C	IEC 60695-2-13
GWIT - thickness tested	**1**	mm	-

Electrical properties	**dry / cond**	**Unit**	**Test Standard**
Surface resistivity, E	*** / 1E13**	Ohm	IEC 62631-3-2
Relative permittivity, 100Hz	**3.6 / -**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**3.2 / -**	-	IEC 62631-2-1
Dissipation factor, 100Hz	**120 / -**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**325 / -**	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	**27 / -**	kV/mm	Sim. to IEC 60243-1

CTI, test solution A, 50 drops value	**600 / -**	-	IEC 60112
Assessment of the insulation group	**I**	-	DIN EN 60664-1

Rheological properties	**dry / cond**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**20 / ***	cm^3/10min	ISO 1133
Temperature	**285 / ***	°C	-
Load	**5 / ***	kg	-
Molding shrinkage, parallel	**0.7 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**0.8 / ***	%	ISO 294-4, 2577

Polymer analytics	**dry / cond**	**Unit**	**Test Standard**
Viscosity number	**150 / ***	cm^3/g	ISO 307, 1157, 1628

Test specimen production	**dry**	**Unit**	**Test Standard**
Injection Molding, melt temperature	**280**	°C	ISO 294
Injection Molding, mold temperature	**80**	°C	ISO 294
Injection Molding, injection velocity	**200**	mm/s	ISO 294
Injection Molding, pressure at hold	**70**	MPa	ISO 294

Characteristics

Applications
Electrical and Electronical, Hygiene and cosmetics, Packaging

Processing
Film extrusion, Profile extrusion, Sheet extrusion, Blow molding, Thermoforming

Special Characteristics
Environmental stress crack resistance, Light-stabilized, U.V. stabilized, Medium viscosity

Color
Natural color

Additives
Release agent

Delivery form
Spherical pellets

Chemical Resistance
General chemical resistance

Chemical Media Resistance

Acids

✖ Sulfuric Acid (38% by mass) (23°C)

Alcohols

✔ Isopropyl alcohol (23°C)
✔ Methanol (23°C)
✔ Ethanol (23°C)

Hydrocarbons

✔ Toluene (23°C)

Ketones

✔ Acetone (23°C)

Mineral oils

✔ SAE 10W40 multigrade motor oil (23°C)

Standard Fuels

✔ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
✔ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)
✔ Diesel fuel (pref. ISO 1817 Liquid F) (23°C)

Other

✔ Ethyl Acetate (23°C)

Rheological calculation properties	dry	Unit	Test Standard
Min. mold temperature	**60**	°C	-
Max. mold temperature	**100**	°C	-
Min. melt temperature	**280**	°C	-
Max. melt temperature	**300**	°C	-