

Product Information

**TROGAMID® eCO myCX BC100 I**

**MICROCRYSTALLINE, PERMANENTLY TRANSPARENT  
POLYAMIDE**



TROGAMID® eCO myCX BC100 I is a microcrystalline transparent polyamide for the manufacture of parts in the optical industry, like lenses, by injection molding. eCO stands for Evoniks aim to eliminate CO<sub>2</sub> through use of renewable or circular feedstocks via massbalance approach.

TROGAMID® eCO myCX BC100 I is supplied as spherical pellets in moisture-proof packaging.

The results shown have been generated from a low number of production lots. Therefore, they are preliminary and not yet the result of a statistical evaluation. Therefore they must not be used to establish specifications. Pigmentation may affect values.

**Key Features**

**Industrial Sector**

Sustainable, Optics, Sports and Lifestyle

**Sustainability**

eCO

**Processing**

Injection molding, Extrusion

**Optics**

Transparent, High gloss, X-ray transparent

**Resistance to**

Heat (thermal stability), Hydrolysis / hot water, UV / light / weathering, Fatigue resistance

**Conformity**

Food contact

**Additives**

Unfilled

**LCA-values**

LCA name of certificate

**dry**

[TROGAMID® eCO  
myCX BC100](#)

**Unit**

-

**Test Standard**

ISO 14040, 14044

LCA certifier

[TÜV Rheinland](#)

-

ISO 14040, 14044

Blue water consumption

**30.0**

kg

ISO 14040, 14044

## TROGAMID® myCX

Global Warming Potential incl. bio. C incl. LUC	<b>2.7</b>	kg CO <sub>2</sub> eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	<b>5.5</b>	kg CO <sub>2</sub> eq./kg	ISO 14040, 14044
Land use (ReCiPe 2016)	<b>0.9</b>	Annual crop eq. y	ISO 14040, 14044

### Mechanical properties ISO

	dry / cond	Unit	Test Standard
Tensile modulus	<b>1480 / 1490</b>	MPa	ISO 527
Tensile strength	<b>59 / 63</b>	MPa	ISO 527
Yield stress	<b>59 / 63</b>	MPa	ISO 527
Yield strain	<b>8 / 7</b>	%	ISO 527
Stress at 50% strain	<b>42 / 39</b>	MPa	ISO 527
Stress at break	<b>65 / 60</b>	MPa	ISO 527
Nominal strain at break, tB	<b>180 / 185</b>	%	ISO 527
Charpy impact strength, +23°C	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	<b>11 / 12</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C / C</b>	-	-
Charpy notched impact strength, -30°C	<b>11 / 12</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C / C</b>	-	-
Flexural modulus, 23°C	<b>1460 / 1500</b>	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	<b>52 / 54</b>	MPa	ISO 178
Flexural strength, 23°C	<b>81 / 88</b>	MPa	ISO 178
Flexural strain at flexural strength, 23°C	<b>8 / 8</b>	%	ISO 178
Flexural stress at break, 23°C	<b>N / N</b>	MPa	ISO 178
Flexural strain at break, 23°C	<b>N / N</b>	%	ISO 178

### Thermal properties

	dry / cond	Unit	Test Standard
Melting temperature	<b>247 / *</b>	°C	ISO 11357-1/-3
Glass transition temperature, DSC	<b>135 / *</b>	°C	ISO 11357-1/-2

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Temp. of deflection under load A, 1.80 MPa	<b>102 / *</b>	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>120 / *</b>	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	<b>133 / *</b>	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	<b>127 / *</b>	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	<b>92 / *</b>	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	<b>96 / *</b>	E-6/K	ISO 11359-1/-2
Melting Temperature	<b>247</b>	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	<b>1020 / -</b>	kg/m <sup>3</sup>	ISO 1183
Water absorption	<b>3 / *</b>	%	Sim. to ISO 62
Humidity absorption	<b>2 / *</b>	%	Sim. to ISO 62
Shore D hardness	<b>81<sup>[b]</sup> / -</b>	-	ISO 7619-1
Density	<b>1020</b>	kg/m <sup>3</sup>	ASTM D 792

b: 3 seconds

Optical properties	dry	Unit	Test Standard
Haze	<b>2.1</b>	%	ASTM D 1003
Haze Thickness tested	<b>2</b>	mm	-
Light Transmittance	<b>92</b>	%	ASTM D 1003
Light Transmittance Thickness tested	<b>2</b>	mm	ASTM D 1003

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	<b>11 / *</b>	cm <sup>3</sup> /10min	ISO 1133
Temperature	<b>280 / *</b>	°C	-
Load	<b>2.16 / *</b>	kg	-
Molding shrinkage, parallel	<b>0.7 / *</b>	%	ISO 294-4, 2577
Molding shrinkage, normal	<b>0.7 / *</b>	%	ISO 294-4, 2577
Mold temperature	<b>80 / *</b>	°C	-

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Melt temperature	<b>280 / *</b>	°C	-
Flow length, flow spiral	<b>295</b>	mm	Evonik standard
Flow cross section	<b>6 x 2</b>	mm <sup>2</sup>	Evonik standard
Mold temperature, flow spiral	<b>80</b>	°C	Evonik standard
Melt temperature, flow spiral	<b>280</b>	°C	Evonik standard
Injection pressure, flow spiral	<b>1000</b>	bar	Evonik standard
Flow length, flow spiral	<b>464</b>	mm	Evonik standard
Flow cross section	<b>6 x 2</b>	mm <sup>2</sup>	Evonik standard
Mold temperature, flow spiral	<b>80</b>	°C	Evonik standard
Melt temperature, flow spiral	<b>300</b>	°C	Evonik standard
Injection pressure, flow spiral	<b>1000</b>	bar	Evonik standard

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	<b>280</b>	°C	ISO 294
Injection Molding, mold temperature	<b>80</b>	°C	ISO 294
Injection Molding, injection velocity	<b>200</b>	mm/s	ISO 294

### Characteristics

#### Applications

Fiber optic cable, (Sun-) glasses, Hygiene and cosmetics, Lenses, Monofilament

#### Processing

Film extrusion

#### Special Characteristics

Halogen-free, Phosphorus-free, High impact strength, Low viscosity

#### Features

optical UV-protection, Weldable, Low birefringence, Non-corrosive, Dishwasher detergents resistant

#### Regulatory

Food contact 10/2011/EC

#### Color

Natural color

#### Delivery form

Spherical pellets