Product Information

VESTAMID® EX9200

PLASTICIZER-FREE AND LIGHT-STABILIZED POLYAMIDE 12 ELASTOMER

The VESTAMID® E series represent thermoplastic elastomers generically characterized as polyether block copolyamides (PEBA) consisting of PA 12 and polyether segments.

Characteristic properties of **VESTAMID® EX9200** are:

- Excellent toughness and flexibility even at low temperatures
- Absence of plasticizers and therefore no plasticizer migration
- Low density
- Good chemical resistance
- High dimensional stability and constant physical properties at changing environmental humidity due to low moisture absorption

Compared with chemically cross-linked elastomers VESTAMID® EX9200 offers the more economically thermoplastic processing.
The process temperatures should be within a range of 200°C – 240°C.

VESTAMID® EX9200 is supplied in moisture-proof packaging ready for use.

Pigmentation may affect values.

Inside the original and undamaged packaging, the product has a shelf life of at least 2 years when stored in dry rooms at temperatures not exceeding 30°C.

Key Features

Industrial Sector
Automotive and Mobility, Industry and Engineering, Sports and Lifestyle

Processing
Injection molding, Extrusion

Delivery form
Pellets, Granules

Optics
Translucent

Resistance to
Hydrolysis / hot water, UV / light / weathering, Wear / abrasion, Fatigue resistance

Additives
Unfilled

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**720 / -**	MPa	ISO 527
Tensile strength	**31 / -**	MPa	ISO 527
Yield stress	**31 / -**	MPa	ISO 527
Yield strain	**20 / -**	%	ISO 527
Stress at 50% strain	**27 / -**	MPa	ISO 527
Stress at break	**45 / -**	MPa	ISO 527
Nominal strain at break, tB	**250 / -**	%	ISO 527
Typical for the mat. nom. strain at br., tB	**200**	%	ISO 527
Charpy impact strength, +23°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy impact strength, 0°C	**6 / -**	kJ/m²	ISO 179/1eU
Type of failure	**C / -**	-	-
Charpy notched impact strength, +23°C	**33 / -**	kJ/m²	ISO 179/1eA
Type of failure	**P / -**	-	-
Charpy notched impact strength, -30°C	**6 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -40°C	**6 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Flexural modulus, 23°C	**539 / -**	MPa	ISO 178
Flexural strength, 23°C	**30 / -**	MPa	ISO 178
Flexural strain at flexural strength, 23°C	**7 / -**	%	ISO 178

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Stress at 5% elongation	**26.9 / -**	MPa	ISO 527
Stress at 10% elongation	**31.3 / -**	MPa	ISO 527
Stress at 20% elongation	**32.2 / -**	MPa	ISO 527
Stress at 50% elongation	**30 / -**	MPa	ISO 527
Stress at 100% elongation	**33 / -**	MPa	-

Strain at break TPE	**227 / -**	%	ISO 527
Stress at break TPE	**55.9 / -**	MPa	ISO 527

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	**177 / ***	°C	ISO 11357-1/-3
Glass transition temperature, DSC	**21 / ***	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**45 / ***	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**100 / ***	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**170 / ***	°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	**160 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**160 / ***	E-6/K	ISO 11359-1/-2
Melting Temperature	**177**	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	**1010 / -**	kg/m³	ISO 1183
Water absorption	**1.5 / ***	%	Sim. to ISO 62
Shore D hardness	**68**[b] **/ -**	-	ISO 7619-1
Density	**1010**	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	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	**1E9 / -**	Ohm*m	IEC 62631-3-1
Surface resistance, RSD	**1E13 / -**	Ohm	IEC 62631-3-2
Relative permittivity, 100Hz	**7.4 / -**	-	IEC 62631-2-1

Relative permittivity, 1MHz	**4.6 / -**	-	IEC 62631-2-1
Dissipation factor, 100Hz	**1500 / -**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**760 / -**	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	**30 / -**	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

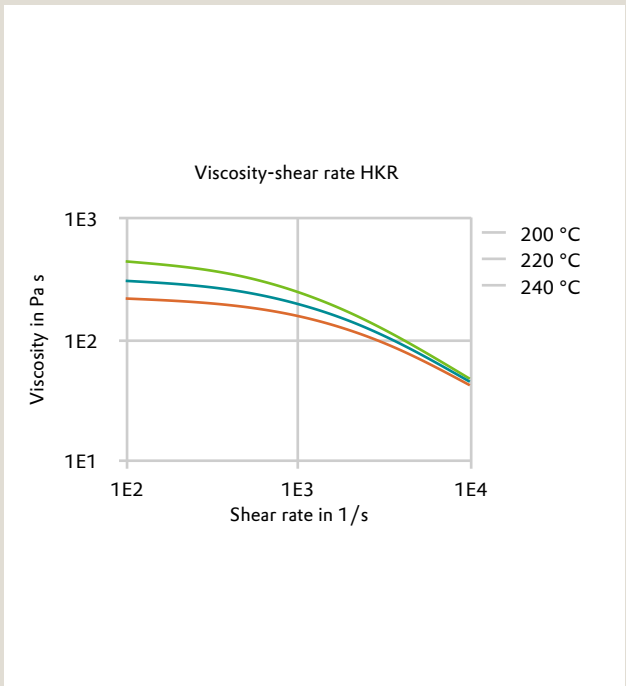
Rheological properties	**dry / cond**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**54 / ***	cm^3/10min	ISO 1133
Temperature	**250 / ***	°C	-
Load	**5 / ***	kg	-
Molding shrinkage, parallel	**0.9 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.3 / ***	%	ISO 294-4, 2577
Mold temperature	**45 / ***	°C	-
Melt temperature	**230 / ***	°C	-

Polymer analytics	**dry / cond**	**Unit**	**Test Standard**
Viscosity number	**190 / ***	cm^3/g	ISO 307, 1157, 1628

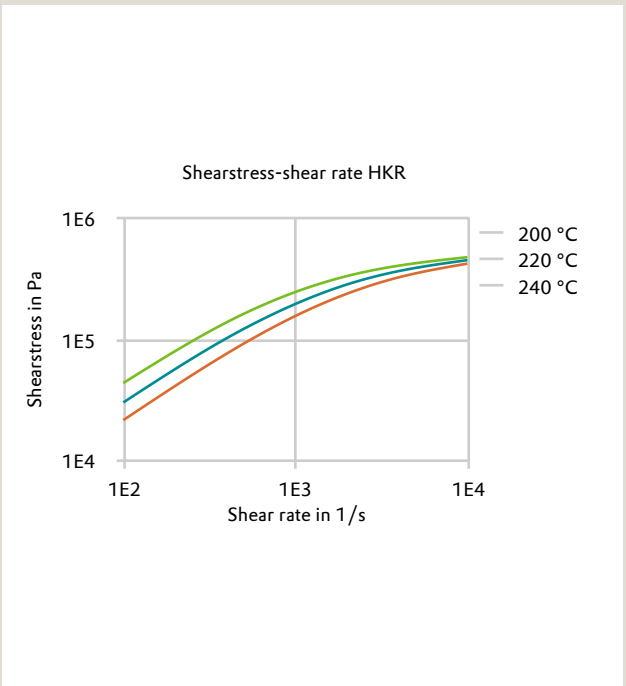
Test specimen production	**dry**	**Unit**	**Test Standard**
Injection Molding, melt temperature	**220**	°C	ISO 294
Injection Molding, mold temperature	**35**	°C	ISO 294
Injection Molding, injection velocity	**200**	mm/s	ISO 294

Diagrams

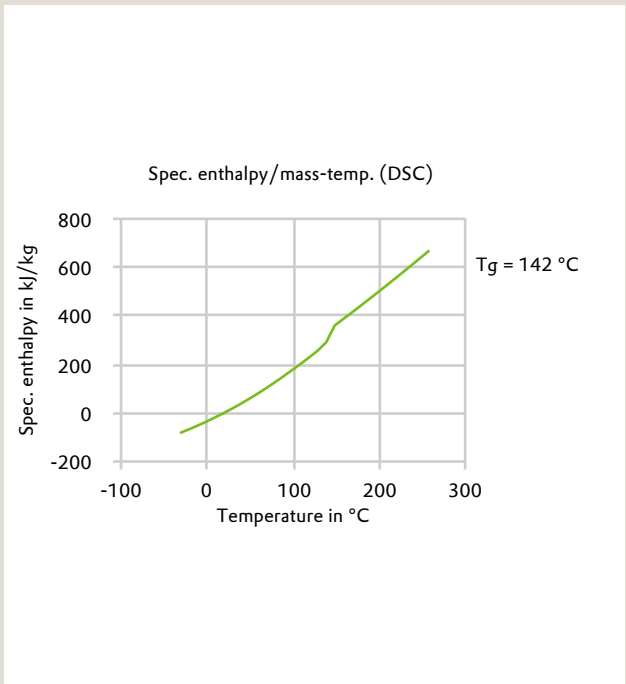
Viscosity-shear rate HKR



Shearstress-shear rate HKR



Spec. enthalpy/mass-temp. (DSC)



VESTAMID®

Characteristics

Processing
Film extrusion

Special Characteristics
Semi-crystalline, Light-stabilized

Color
Natural color

Additives
Light stabilizer

Chemical Resistance
General chemical resistance

Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass) (23°C)
- ✔ Citric Acid solution (10% by mass) (23°C)

Bases

- ✔ Sodium Hydroxide solution (35% by mass) (23°C)
- ✔ Sodium Hydroxide solution (1% by mass) (23°C)
- ✔ Ammonium Hydroxide solution (10% by mass) (23°C)

Alcohols

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

Hydrocarbons

- ✔ n-Hexane (23°C)
- ✔ Toluene (23°C)
- ✔ iso-Octane (23°C)

Ketones

- ✔ Acetone (23°C)

Ethers

- ✔ Diethyl ether (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

- ✔ Ethyl Acetate (23°C)
- ✔ Hydrogen peroxide (23°C)
- ✔ Water (23°C)