HK:+852-69575415 China GuangDong:+13538586433 ShangHai:+18816996168

Product Information

VESTAMID® E55-S3

HEAT- AND LIGHT-STABILIZED COMPOUND BASED ON POLYAMIDE 12 ELASTOMER FOR MOLDING OF SPORT SHOE SOLES

VESTAMID® E55-S3 is a PA 12 elastomer consisting of PA 12 segments and softening segments. The material is free of volatile or migrating plasticizer.

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

VESTAMID® E55-S3 is especially developed for sport shoe soles. It has good impact strength at low temperatures.

VESTAMID® E55-S3 is supplied as spherical pellets in moisture-proof packaging, ready for processing.

The process temperatures should be within a range of 190°C – 230°C.

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
Sustainable, Industry and Engineering, Sports and Lifestyle

Sustainability
Sustainable electricity

Processing
Injection molding, Extrusion

Delivery form
Pellets, Granules

Optics
Translucent

Resistance to
Heat (thermal stability), Hydrolysis / hot water, UV / light / weathering, Wear / abrasion, Fatigue resistance

Additives
Unfilled

HK:+852-69575415 China GuangDong:+13538586433 ShangHai:+18816996168

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® E mix	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044
Blue water consumption	**14.2**	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	**6.5**	kg CO_2 eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	**6.5**	kg CO_2 eq./kg	ISO 14040, 14044
Land use (ReCiPe 2016)	**0**	Annual crop eq. y	ISO 14040, 14044
GWP savings as compared to 2023 reference	**-1.6**	kg CO_2 eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**215 / -**	MPa	ISO 527
Tensile strength	**38 / -**	MPa	ISO 527
Stress at 50% strain	**17 / -**	MPa	ISO 527
Typical for the mat. nom. strain at br., tB	**200**	%	ISO 527
Tensile creep modulus, 0,5% Strain, 1000h	*** / 100**	MPa	ISO 899-1
Charpy impact strength, +23°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**N / -**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**22 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Tensile-impact strength, notched, atN +23°C	**210 / -**	kJ/m²	ISO 8256/1
Flexural modulus, 23°C	**196 / -**	MPa	ISO 178

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Stress at 10% elongation	**12.5 / -**	MPa	ISO 527
Stress at 100% elongation	**18 / -**	MPa	-
Stress at 300% elongation	**30 / -**	MPa	ISO 527
Strain at break TPE	**>300 / -**	%	ISO 527

HK:+852-69575415 China GuangDong:+13538586433 ShangHai:+18816996168

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	**166 / ***	°C	ISO 11357-1/-3
Glass transition temperature, DSC	**-20 / ***	°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	**90 / ***	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**160 / ***	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**100 / ***	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**200 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**200 / ***	E-6/K	ISO 11359-1/-2
Melting Temperature	**166**	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	**1030 / -**	kg/m³	ISO 1183
Water absorption	**1.1 / ***	%	Sim. to ISO 62
Humidity absorption	**0.5 / ***	%	Sim. to ISO 62
Shore D hardness	**55**[b] **/ -**	-	ISO 7619-1
Density	**1030**	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	-
Burnin behav. at thickness h	**HB / ***	class	IEC 60695-11-10
Thickness tested	**3.2 / ***	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	**3E9 / -**	Ohm*m	IEC 62631-3-1
Relative permittivity, 100Hz	**9.5 / -**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**4.3 / -**	-	IEC 62631-2-1

HK:+852-69575415 China GuangDong:+13538586433 ShangHai:+18816996168

Dissipation factor, 100Hz	**950 / -**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**1100 / -**	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	**38 / -**	kV/mm	Sim. to IEC 60243-1

Rheological properties	**dry / cond**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**36 / ***	cm^3/10min	ISO 1133
Temperature	**240 / ***	°C	-
Load	**2.16 / ***	kg	-
Molding shrinkage, parallel	**0.8 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.3 / ***	%	ISO 294-4, 2577
Mold temperature	**35 / ***	°C	-
Melt temperature	**200 / ***	°C	-

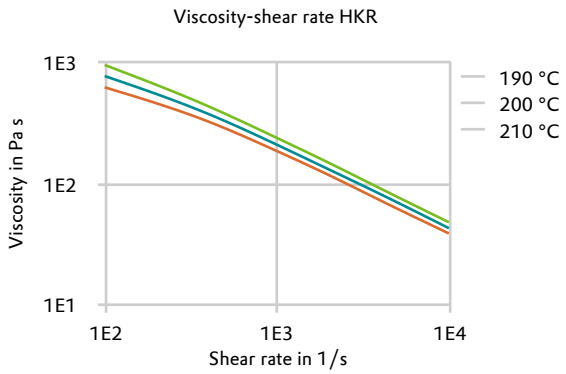
Polymer analytics	**dry / cond**	**Unit**	**Test Standard**
Viscosity number	**190 / ***	cm^3/g	ISO 307, 1157, 1628

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
Injection Molding, pressure at hold	**70**	MPa	ISO 294

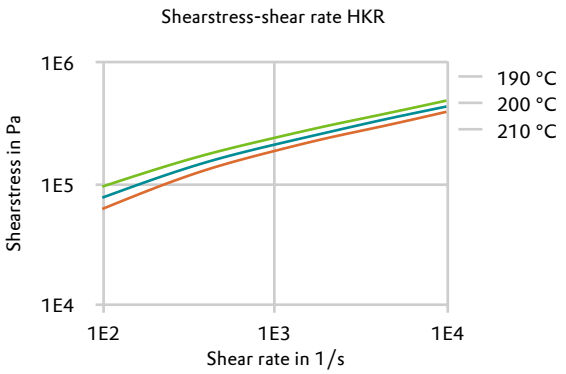
HK:+852-69575415 China GuangDong:+13538586433 ShangHai:+18816996168

Diagrams

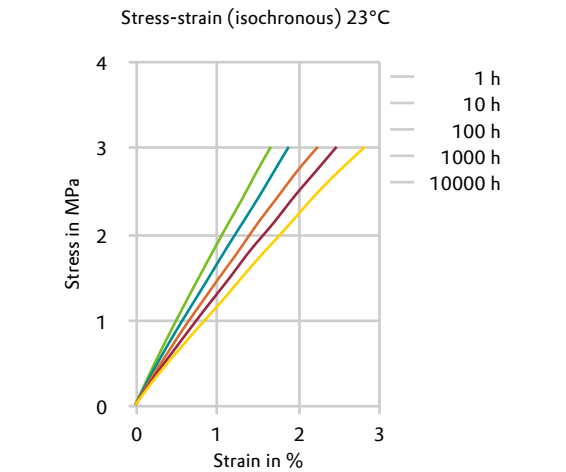
Viscosity-shear rate HKR



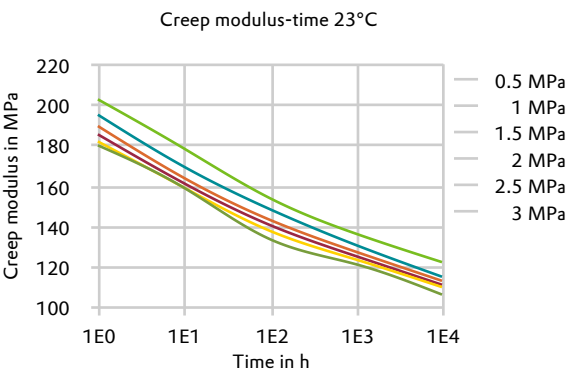
Shearstress-shear rate HKR



Stress-strain (isochronous) 23°C

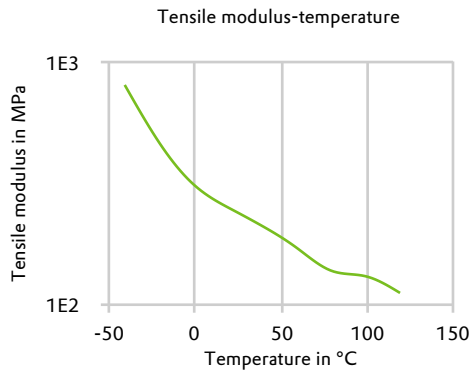


Creep modulus-time 23°C

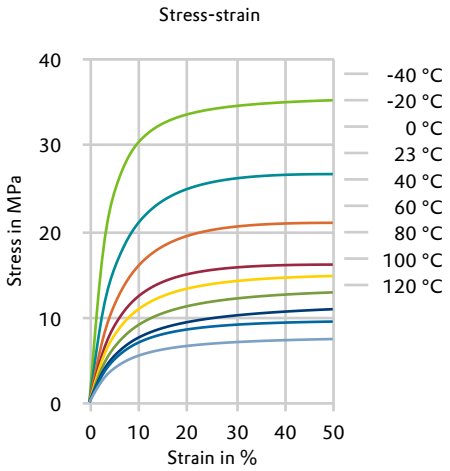


HK:+852-69575415 China GuangDong:+13538586433 ShangHai:+18816996168

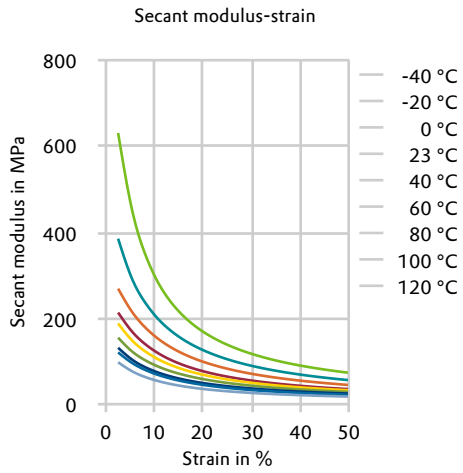
Tensile modulus-temperature



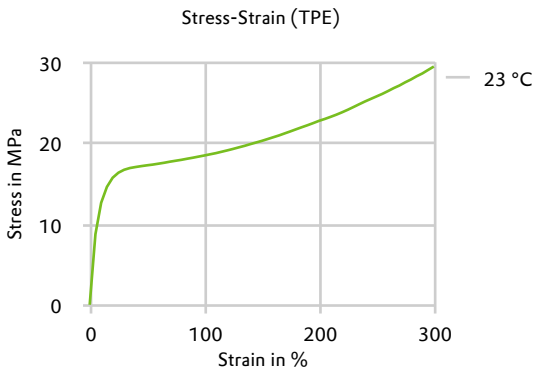
Stress-strain



Secant modulus-strain



Stress-Strain (TPE)



HK:+852-69575415 China GuangDong:+13538586433 ShangHai:+18816996168

VESTAMID®

Characteristics

Processing
Profile extrusion

Color
Natural color

Special Characteristics
Light-stabilized, U.V. stabilized, High heat resistant

Additives
Light stabilizer, Heat stabilizer

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

HK:+852-69575415 China GuangDong:+13538586433 ShangHai:+18816996168

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

Rheological calculation properties	dry	Unit	Test Standard
Ejection temperature	**160**	°C	-
Min. mold temperature	**15**	°C	-
Max. mold temperature	**40**	°C	-
Min. melt temperature	**200**	°C	-
Max. melt temperature	**240**	°C	-