Product Information

VESTAMID® X7293 BK 9.7507

HIGH VISCOSITY, PLASTICIZED, IMPACT MODIFIED, HEAT- AND LIGHT-STABILIZED POLYAMIDE 12 COMPOUND

VESTAMID® X7293 BK 9.7507 is a plasticized polyamide 12 compound with heat and light stabilizer for the extrusion of flexible tubing and hose, especially for automotive applications according to DIN 73378, (PA 12-HIPHL, Type 1), ISO/DIN 7628-1 (PA 12-HIPEHL, Type 1) and SAE J844.

VESTAMID® X7293 BK 9.7507 is distinguished by an easy processing as well as by a high impact strength at low temperatures.

Properties of compounds based on Polyamide 12 vary little with changing humidity due to low moisture absorption. Parts made of this semicrystalline material are characterized by exceptional impact strength, low coefficient of friction and good chemical resistance.

VESTAMID® X7293 BK 9.7507 is supplied as cylindrical granules, ready for use, in moisture-proof bags.

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.

For information about processing of VESTAMID®, please follow the general commendations about "Processing of VESTAMID® compounds".

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

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile Modulus	**410 / 400**	MPa	ISO 527
Tensile Strength	**26 / 24**	MPa	ISO 527
Yield stress	**26 / 24**	MPa	ISO 527
Yield strain	**32 / 32**	%	ISO 527
Stress at 50% strain	**26 / 24**	MPa	ISO 527
Stress at break	**42 / 40**	MPa	ISO 527
Nominal strain at break, εtB	**240 / 250**	%	ISO 527
Charpy impact strength, +23°C	**N / N**	kJ/m²	ISO 179/1eU
Charpy impact strength, 0°C	**N / N**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**N / N**	kJ/m²	ISO 179/1eU

Charpy notched impact strength, +23°C	**120 / 125**	kJ/m²	ISO 179/1eA
Type of failure	**P / P**	-	-
Charpy notched impact strength, -30°C	**7 / 6**	kJ/m²	ISO 179/1eA
Type of failure	**C / C**	-	-
Flexural modulus, 23°C	**400 / 390**	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	**14 / 13**	MPa	ISO 178
Flexural strain at flexural strength, 23°C	**9 / 9**	%	ISO 178
Flexural stress at break, 23°C	**N / N**	MPa	ISO 178
Flexural strain at break, 23°C	**N / N**	%	ISO 178

Thermal properties	**dry / cond**	**Unit**	**Test Standard**
Melting temperature	**172 / ***	°C	ISO 11357-1/-3
Glass transition temperature	**13 / ***	°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	**165 / ***	°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	**180 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**180 / ***	E-6/K	ISO 11359-1/-2
Melting Temperature	**172**	°C	ASTM D 3418

Physical properties	**dry / cond**	**Unit**	**Test Standard**
Water absorption	**1.3 / ***	%	Sim. to ISO 62
Humidity absorption	**0.5 / ***	%	Sim. to ISO 62
Density	**1020 / -**	kg/m³	ISO 1183
Density	**1020**	kg/m³	ASTM D 792

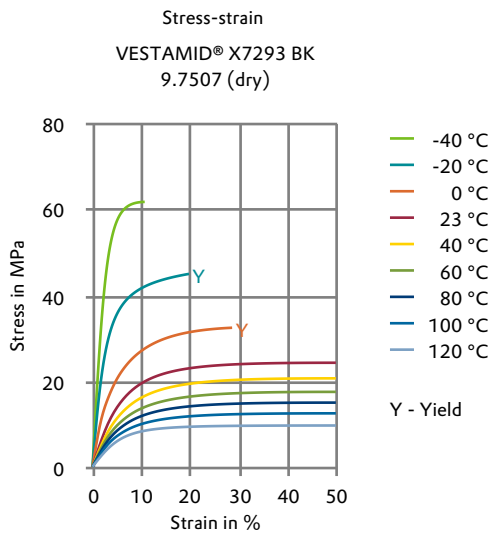
Burning Behav.	dry / cond	Unit	Test Standard
Burnin behav. at thickness h	**HB / ***	class	IEC 60695-11-10
Thickness tested	**3.2 / ***	mm	-
Burning behav. at 1.5 mm nom. thickn.	**HB / ***	class	IEC 60695-11-10
Thickness tested	**1.6 / ***	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 50Hz	**- / 13**	-	IEC 62631-2-1
Relative permittivity, 100Hz	**11 / 12**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**4.6 / 3.7**	-	IEC 62631-2-1
Dissipation factor, 50Hz	**- / 1550**	E-4	IEC 62631-2-1
Dissipation factor, 100Hz	**2000 / 1470**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**1900 / 1450**	E-4	IEC 62631-2-1
Volume resistivity, ρV	**1E10 / 2.7E9**	Ohm*m	IEC 62631-3-1
Surface resistivity, σC, circular electrodes	**- / 1.9E13**	Ohm per square	IEC 62631-3-2
Electric strength, AC, S20/S20	**- / 37**	kV/mm	IEC 60243-1
Electric strength, AC, S20/P50	**30 / -**	kV/mm	Sim. to IEC 60243-1
CTI, test solution A, 50 drops value	**600 / -**	-	IEC 60112

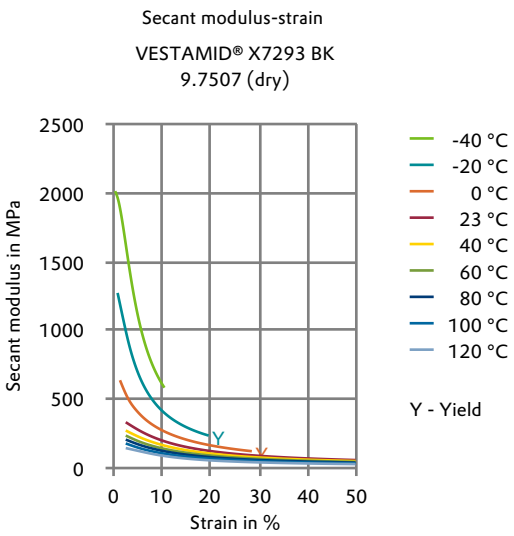
Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	**53 / ***	cm^3/10min	ISO 1133
Temperature	**275 / ***	°C	-
Load	**5 / ***	kg	-
Molding shrinkage, parallel	**0.9 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.2 / ***	%	ISO 294-4, 2577
Mold temperature	**60 / ***	°C	-
Melt temperature	**220 / ***	°C	-

Diagrams

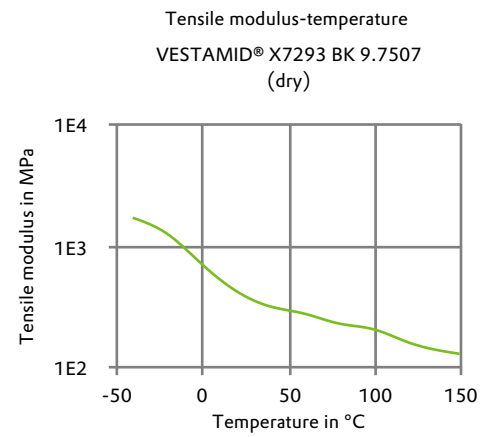
Stress-strain



Secant modulus-strain



Tensile modulus-temperature



Characteristics

Key Feature, Industrial Sector
Automotive, Instustry and Building Construction

Key Feature, Processing
Injection Molding, Extrusion

Key Feature, Resistance to
Heat (Thermal Stability), U.V. / Light / Weathering, Oil / Fuels

Key Feature, Electrical
Isolating

Key Feature, Certificate / Licence
Automotive

Key Feature, Additives
Lubricants, Unfilled

Applications
Tube and hose

Processing
Profile Extrusion, Pipe/Tube Extrusion

Special Characteristics
High impact strength, Light-stabilized, Heat-stabilized

Features
General Chemical Resistance, Low Coefficient of Friction

Color
Black

Additives
Plasticizer, Impact restistant, Light stabilizer, Heat stabilizer

Delivery form
Pellets, Granules

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)

Mineral oils

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

Standard Fuels

- ✔ ISO 1817 Liquid 1 (60°C)
- ✔ ISO 1817 Liquid 2 (60°C)
- ✔ ISO 1817 Liquid 3 (60°C)
- ✔ ISO 1817 Liquid 4 (60°C)
- ✔ 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)
- ✔ Diesel fuel (pref. ISO 1817 Liquid F) (90°C)
- ✔ Diesel EN 590 (100°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)
- ✔ Zinc Chloride solution (50% by mass) (23°C)

Other

- ✔ Ethyl Acetate (23°C)
- ✔ Hydrogen peroxide (23°C)
- ✔ DOT No. 4 Brake fluid (120°C)
- ✔ Water (23°C)

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