VESTAMID®

Product Information

VESTAMID® DX9302 BK E70178

IMPACT-MODIFIED, HEAT- AND LIGHTSTABILIZED POLYAMIDE 612 COMPOUND FOR EXTRUSION

VESTAMID® DX9302 BK E70178 has been developed for the production of flexible, impact resistant extruded parts, especially tubes.

Its composition makes VESTAMID® DX9302 BK E70178 suitable for the extrusion of tubes for windshield washer systems that have only small amounts of extractables substances in water/alcohol mixtures.
Further advantages of VESTAMID® DX9302 BK E70178 are the typical properties of PA 612 like little water adsorption, good dimensional stability and almost constant mechanical properties at changing ambient humidity.

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

Processing
Extrusion

Delivery form
Pellets, Granules

Resistance to
Heat (thermal stability), UV / light / weathering, Oil / fuels

Electrical
Insulating

Conformity
Automotive

Additives
Unfilled

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**167000 / 123000**	psi	ISO 527

Tensile strength	**4500 / -**	psi	ISO 527
Yield stress	**4500 / 3770**	psi	ISO 527
Yield strain	**15 / 23**	%	ISO 527
Stress at 50% strain	**4500 / ***	psi	ISO 527
Stress at break	**4790 / ***	psi	ISO 527
Nominal strain at break, tB	**>50 / >50**	%	ISO 527
Charpy impact strength, +23°C	**N / N**	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	**N / N**	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, +23°C	**45.2 / 47.6**	ftlb/in²	ISO 179/1eA
Type of failure	**P / P**	-	-
Charpy notched impact strength, -30°C	**9.04 / 8.09**	ftlb/in²	ISO 179/1eA
Type of failure	**C / C**	-	-
Tensile-impact strength, notched, atN +23°C	**75.2 / 94.7**	ftlb/in²	ISO 8256/1
Type of failure	**C / C**	-	-
Flexural modulus, 23°C	**170000 / -**	psi	ISO 178
Flexural stress at conv. deflection, 23°C	**5510 / -**	psi	ISO 178
Flexural strength, 23°C	**6670 / -**	psi	ISO 178
Flexural strain at flexural strength, 23°C	**7 / -**	%	ISO 178
Flexural stress at break, 23°C	**N / -**	psi	ISO 178
Flexural strain at break, 23°C	**N / -**	%	ISO 178

Thermal properties	**dry / cond**	**Unit**	**Test Standard**
Melting temperature	**419 / ***	°F	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	**122 / ***	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**284 / ***	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**230 / ***	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**338 / ***	°F	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**9.44E-7 / ***	in/in/°F	ISO 11359-1/-2

Melting Temperature	**419**	°F	ASTM D 3418

Physical properties	**dry / cond**	**Unit**	**Test Standard**
Density	**1.02 / 1.02**	g/cm³	ISO 1183
Water absorption	**2.2 / ***	%	Sim. to ISO 62
Humidity absorption	**0.5 / ***	%	Sim. to ISO 62
Density	**1.02**	g/cm³	ASTM D 792

Burning Behav.	**dry / cond**	**Unit**	**Test Standard**
Burning behav. at 1.5 mm nom. thickn.	**HB / ***	class	IEC 60695-11-10
Thickness tested	**0.0630 / ***	in	-
Burnin behav. at thickness h	**HB / ***	class	IEC 60695-11-10
Thickness tested	**0.1260 / ***	in	-

Electrical properties	**dry / cond**	**Unit**	**Test Standard**
Volume resistivity, V	**1E12 / -**	Ohm*m	IEC 62631-3-1
Relative permittivity, 100Hz	**3.8 / -**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**3 / -**	-	IEC 62631-2-1
Dissipation factor, 100Hz	**470 / -**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**310 / -**	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	**1040 / -**	kV/in	IEC 60243-1
Dielectric strength, AC, S20/P50	**1040 / -**	V/mil	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	**N / A / ***	cm³/10min	ISO 1133
Molding shrinkage, parallel	**1.9 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.2 / ***	%	ISO 294-4, 2577

Mold temperature	**176 / ***	°F	-
Melt temperature	**500 / ***	°F	-

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	**428**	°F	ISO 294
Injection Molding, mold temperature	**95**	°F	ISO 294
Injection Molding, injection velocity	**7.87**	in/s	ISO 294

Characteristics

Applications
Tube and hose

Color
Black

Processing
Profile extrusion

Additives
Impact restistant, Light stabilizer, Heat stabilizer

Special Characteristics
High impact strength, Light-stabilized, High heat resistant

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)