

Product Information

# VESTAMID® X7297 BK 9.7507

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

**VESTAMID® X7297 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.

VESTAMID® X7297 BK 9.7507 is characterized by easy processing as well as 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 semi-crystalline material are characterized by exceptional impact strength, low coefficient of friction and good chemical resistance.

VESTAMID® X7297 BK 9.7507 is supplied as cylindrical pellets, ready for processing, in moisture-proof bags.

The use of colorants may affect property 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, Sustainable, Industry and Engineering

#### Sustainability

Sustainable electricity

#### Processing

Extrusion

#### Delivery form

Pellets, Granules

#### Resistance to

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

#### Electrical

Insulating

#### Conformity

Automotive

#### Additives

Unfilled

LCA-values	dry	Unit	Test Standard
LCA name of certificate	<a href="#">VESTAMID® L Compound medium</a>	-	ISO 14040, 14044
LCA certifier	<a href="#">TÜV Rheinland</a>	-	ISO 14040, 14044
Blue water consumption	<b>25.6</b>	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	<b>6.0</b>	kg CO <sub>2</sub> eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	<b>6.0</b>	kg CO <sub>2</sub> eq./kg	ISO 14040, 14044
Land use (ReCiPe 2016)	<b>0.1</b>	Annual crop eq. y	ISO 14040, 14044
GWP savings as compared to 2023 reference	<b>-2.4</b>	kg CO <sub>2</sub> eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	<b>390 / 390</b>	MPa	ISO 527
Tensile strength	<b>26 / 25</b>	MPa	ISO 527
Yield stress	<b>26 / 25</b>	MPa	ISO 527
Yield strain	<b>37 / 37</b>	%	ISO 527
Stress at 50% strain	<b>26 / 25</b>	MPa	ISO 527
Stress at break	<b>42 / 38</b>	MPa	ISO 527
Nominal strain at break, tB	<b>240 / 230</b>	%	ISO 527
Typical for the mat. nom. strain at br., tB	<b>200</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>122 / 130</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>P / P</b>	-	-
Charpy notched impact strength, -30°C	<b>6 / 8</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C / C</b>	-	-
Flexural modulus, 23°C	<b>400 / 380</b>	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	<b>14 / 14</b>	MPa	ISO 178
Flexural strength, 23°C	<b>21 / 21</b>	MPa	ISO 178

Flexural strain at flexural strength, 23°C	<b>9 / 9</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

<b>Thermal properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Melting temperature	<b>171 / *</b>	°C	ISO 11357-1/-3
Glass transition temperature, DSC	<b>41 / *</b>	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	<b>51 / *</b>	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>135 / *</b>	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	<b>166 / *</b>	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	<b>125 / *</b>	°C	ISO 306
Melting Temperature	<b>41.1</b>	°C	ASTM D 3418

<b>Physical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Density	<b>1020 / -</b>	kg/m <sup>3</sup>	ISO 1183
Water absorption	<b>1.4 / *</b>	%	Sim. to ISO 62
Humidity absorption	<b>0.8 / *</b>	%	Sim. to ISO 62
Density	<b>1020</b>	kg/m <sup>3</sup>	ASTM D 792

<b>Electrical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Volume resistivity, V	<b>3.3E9 / 6.3E8</b>	Ohm*m	IEC 62631-3-1
Surface resistivity, C, circular electrodes	<b>1.2E13 / 7.3E12</b>	Ohm per square	IEC 62631-3-2
Relative permittivity, 50Hz	<b>12.2 / 14.9</b>	-	IEC 62631-2-1
Relative permittivity, 100Hz	<b>11.4 / 13.7</b>	-	IEC 62631-2-1
Relative permittivity, 1MHz	<b>3.6 / 3.8</b>	-	IEC 62631-2-1
Dissipation factor, 50Hz	<b>2070 / 2670</b>	E-4	IEC 62631-2-1
Dissipation factor, 100Hz	<b>1850 / 2260</b>	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	<b>1040 / 1570</b>	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	<b>36 / 36</b>	kV/mm	IEC 60243-1

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	13 / *	cm <sup>3</sup> /10min	ISO 1133
Temperature	230 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.9 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.3 / *	%	ISO 294-4, 2577
Mold temperature	60 / *	°C	-
Melt temperature	220 / *	°C	-

Pipes Properties	dry / cond	Unit	Test Standard
Cold impact resistance, breaks of 10, -40°C, 454g	0 / *	-	SAE J844
Tube dimension, OD x WT	6 x 1	mm	SAE J844
Pretreatment	2h boiling water	-	SAE J844
Cold impact resistance, breaks of 10, -40°C, 454g	0 / *	-	SAE J844
Tube dimension, OD x WT	6 x 1	mm	SAE J844
Pretreatment	24h 110°C	-	SAE J844
Burst hoop stress, 23°C, H2O	24 / *	MPa	DIN 53758, historical
Burst hoop stress, 100°C, in Oil	10.4 / *	MPa	DIN 53758, historical

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	220	°C	ISO 294
Injection Molding, mold temperature	60	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

### Characteristics

#### Applications

Tube and hose

#### Color

Black

## VESTAMID®

### Processing

Pipe/Tube extrusion

### Special Characteristics

High impact strength, Light-stabilized, U.V. stabilized, High heat resistant

### Features

Low coefficient of friction

### Additives

Plasticizer, Impact resistant, Light stabilizer, Heat stabilizer

### Chemical Resistance

General chemical resistance