

Product Information

VESTAMID® L1670

LOW VISCOSITY, HEAT AND LIGHT STABILIZED POLYAMIDE 12 COMPOUND



VESTAMID® L1670 has been developed especially for the extrusion of thin wire insulations and cable jacketings.

VESTAMID® L1670 coatings exhibit a low coefficient of friction which facilitates the laying of cable.

Switchboard wiring isolated with VESTAMID® L1670 can be soldered with no worry of interference by the plastic resin. The wiring can be soldered without the need to strip the isolating layer.

Jacketing of VESTAMID® L1670 protects buried cables from attack by termites.

This partially crystalline polyamide 12 bases compounds have a very low water absorption. Therefore products produced from VESTAMID® L1670 maintain their dimensions in environments with varying humidity levels, while maintaining a high tenacity, a low coefficient of friction and good chemical resistance. VESTAMID® L1670 is supplied as cylindrical granules, ready for processing in moisture-proof packaging.

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.

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	1400 / 1090	MPa	ISO 527
Tensile Strength	44 / 40	MPa	ISO 527
Yield stress	44 / 40	MPa	ISO 527
Yield strain	5 / 13	%	ISO 527
Stress at 50% strain	31 / 30	MPa	ISO 527
Stress at break	50 / 60	MPa	ISO 527
Nominal strain at break, etB	>50 / >50	%	ISO 527
Charpy impact strength, +23°C	N / N	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N / N	kJ/m ²	ISO 179/1eU

Charpy notched impact strength, +23°C	4 / 4	kJ/m ²	ISO 179/1eA
Type of failure	C / C	-	-
Charpy notched impact strength, -30°C	5 / 4	kJ/m ²	ISO 179/1eA
Type of failure	C / C	-	-
Flexural modulus, 23°C	1350 / 1100	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	45 / 35	MPa	ISO 178
Flexural strain at flexural strength, 23°C	7 / 8	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	178 / *	°C	ISO 11357-1/-3
Glass transition temperature	45 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	50 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	120 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	176 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	140 / *	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	150 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	150 / *	E-6/K	ISO 11359-1/-2
Melting Temperature	178	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Water absorption	1.4 / *	%	Sim. to ISO 62
Humidity absorption	0.7 / *	%	Sim. to ISO 62
Density	1010 / -	kg/m ³	ISO 1183
Shore D hardness	75^[b] / -	-	ISO 7619-1
Density	1010	kg/m ³	ASTM D 792

b: 3 seconds

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	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested (1)	1	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested (2)	2	mm	-
Glow Wire Ignition Temperature (GWIT)	850	°C	IEC 60695-2-13
GWIT - thickness tested (1)	1	mm	-
Glow Wire Ignition Temperature (GWIT)	850	°C	IEC 60695-2-13
GWIT - thickness tested (2)	2	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 50Hz	3.9 / -	-	IEC 62631-2-1
Relative permittivity, 100Hz	3.8 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3 / -	-	IEC 62631-2-1
Dissipation factor, 1MHz	271 / -	E-4	IEC 62631-2-1
Volume resistivity, ρ_V	>1E13 / 3.2E12	Ohm*m	IEC 62631-3-1
Surface resistivity, σ_C , circular electrodes	8.5E12 / >1E15	Ohm per square	IEC 62631-3-2
Electric strength, AC, S20/S20	- / 33	kV/mm	IEC 60243-1
Electric strength, AC, S20/P50	27 / -	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	60 / *	cm ³ /10min	ISO 1133
Temperature	230 / *	°C	-
Load	2.16 / *	kg	-
Molding shrinkage, parallel	0.9 / *	%	ISO 294-4, 2577

Molding shrinkage, normal	1.1 / *	%	ISO 294-4, 2577
Mold temperature	60 / *	°C	-
Melt temperature	200 / *	°C	-

Characteristics

Key Feature, Industrial Sector

Electrical and Electronical, Instustry and Building Construction

Key Feature, Processing

Injection Molding, Extrusion

Key Feature, Additives

Lubricants, Unfilled

Applications

Cable sheathing

Processing

Profile Extrusion, Wire/Cable Extrusion

Special Characteristics

Light-stabilized, U.V. stabilized, Heat-stabilized

Features

General Chemical Resistance, Low Coefficient of Friction, Termite & rodent resistance

Color

Natural Color

Additives

Light stabilizer, Heat stabilizer, Processing aids

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)

This information and all technical and other advice are based on Evonik's present knowledge and experience. However, Evonik assumes no liability for such information or advice, including the extent to which such information or advice may relate to third party intellectual property rights. Evonik reserves the right to make any changes to information or advice at any time, without prior or subsequent notice. Evonik disclaims all representations and warranties, whether express or implied, and shall have no liability for, merchantability of the product or its fitness for a particular purpose (even if Evonik is aware of such purpose), or otherwise. EVONIK SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. It is the customer's sole responsibility to arrange for inspection and testing of all products by qualified experts. Reference to trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used.

® is a registered trademark of Evonik Industries AG or one of its subsidiaries

Evonik Operations GmbH
Smart Materials
High Performance Polymers
45772 Marl / Germany
Tel: +49 2365 49-9878
evonik-hp@evonik.com
www.plastics-database.com