

Product Description

Venlon 6EN is a general-purpose grade plastic that offers an excellent blend of mechanical and impact strength, vibration damping, wear and creep resistance. Complimenting these properties are good electrical insulation and favorable chemical resistance. Widely used for washers and gasket applications. Venlon 6EN is applicable within a temperature range of -40 to +160 °C.

Applications

Venlon 6EN is used for a wide range of industrial components both for Original Equipment Manufacture and maintenance. Some examples: support and guide wheels, conveyor rollers, sleeves for wheels and rollers, cams, insulators, sealing rings, flanges, sleeves, impact rollers, feed screws, etc.

Other Material Properties

Venlon 6EN has a better creep resistance but its impact strength and mechanical damping ability are reduced. Well suited for machining on automatic and CNC lathes. General grade industrial nylon rod and sheet.

Key Features and Benefits

- High Mechanical Strength
- Tough and Impact Resistant
- Good Resilance
- Good Chemical Resistance
- Good Fatigue Resistance
- Good Wear Resistance
- Can be bonded

Physical Properties

	Value	Unit	Verification
Density	1.14	g/cm ³	ISO 1183
Moisture pick-up till saturation (in normal climate 23 °C / 50% r.h.)	2.50	%	ISO 62
Water absorption till saturation (in water at 23 °C)	9	%	ISO 62

Mechanical Properties

	Value	Unit	Verification
Tensile stress at yield [$v = 50$ mm/min]	76	MPa	ISO 527-2
Tensile stress at break [$v = 5$ mm/min]	-	MPa	ISO 527-2
Nominal percentage elongation at break	>50	%	ISO 527-2
Tensile modulus of elasticity	3250	MPa	ISO 527-2
Flexural modulus of elasticity	-	MPa	ISO 178
Ball indentation hardness (value at 30 sec.)	150	MPa	ISO 2039-1
Rockwell hardness (measured with test pieces 10 mm thk)	M 85		ISO 2039-2
Charpy impact strength (+23 °C)	No break	kJ/m ²	ISO 179/1eU
Charpy impact strength - notched (+23 °C)	5,5	kJ/m ²	ISO 179/1eA

Electric Properties

	Value	Unit	Verification
Specific insulation resistance [\geq]	10 ¹²	Ohm	IEC 60093
Specific surface resistance [\geq]	10 ¹³	Ohm	IEC 60093
Dielectric constant (at 1 MHz)	3.3	10 ⁵ Hz	IEC 60250
Dielectric constant (at 100 Hz)	3.9	10 ² Hz	IEC 60250
Dissipation factor (at 1 MHz)	0.021	10 ⁶ Hz	IEC 60250
Dissipation factor (at 100 Hz)	0.019	10 ² Hz	IEC 60250
Dielectric strength K20/K20 (in transformer oil)	25	kV/mm	IEC 60243-1
Comparative tracking index (CTI)	600		IEC 60112

Thermal Properties

	Value	Unit	Verification
Temperature for usage in air (max. short term)	160	°C	
Temperature for usage in air (max. lasting)	85	°C	
Minimum service temperature in air	-40	°C	
Heat distortion temperature (HDT A process)	70	°C	ISO 75-2
Coefficient of linear expansion (at length, 23 – 60 °C)	0.9	10 ^{-4/K}	ISO 11359
Thermal conductivity (+23 °C)	0.28	W/(K · m)	DIN 52612
Flammability according UL Standard (thickness 3 and 6 mm)	HB	Class	UL 94
Vicat softening temperature (VST/B/50)	-	°C	ISO 306
Melting point (DSC, 10 K/min)	220	°C	ISO 3146