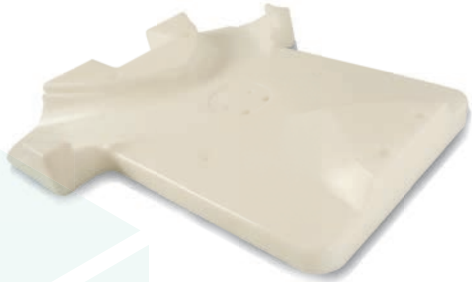
PA ●○

ERTALON® 66 SA

Semi-crystalline plastic, this material has better mechanical resistance to heat and wear as well as greater rigidity than ERTALON® 6 SA. It also provides excellent creep resistance. However, its impact resistance and mechanical damping capacity are smaller.

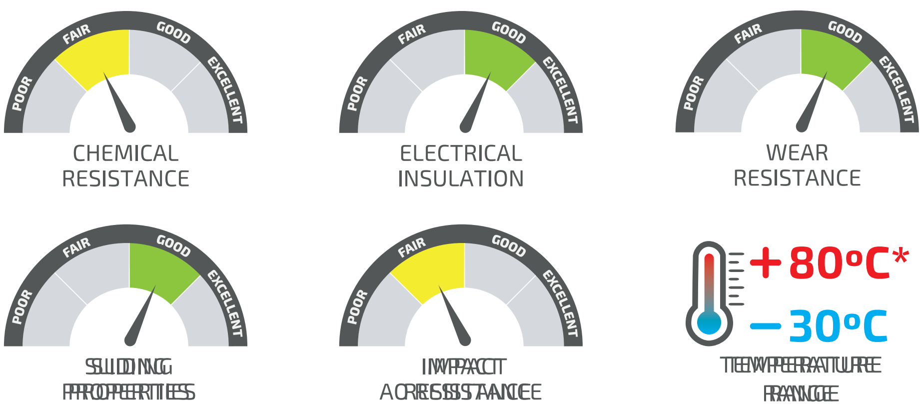


MAIN CHARACTERISTICS

- Higher mechanical, heat and wear resistance than ERTALON® 6 SA
- Higher creep resistance
- Easier machining
- Lower damping power
- Good sliding properties
- Good properties of electrical insulation
- Good resistance to high energy radiation (gamma rays and X-rays)

APPLICATIONS

- Automatic lathes machining
- High module sprockets
- Wheels and rollers
- Bushings
- Separators
- Large parts subjected to heavy loads



*continuously (20.000H)

PA

TECHNICAL DATASHEET

PROPERTIES		TEST METHODS	UNITS	ERTALON® 66 SA
COLOR			-	WHITE/BLACK
DENSITY		ISO 1183-1	g/cm³	1.14
WATER ABSORPTION				
AFTER 24/96H IMMERSION IN WATER OF 23ºC [1]		ISO 62	mg	40/76
AFTER 24/96H IMMERSION IN WATER OF 23ºC [1]		ISO 62	%	0.60/1.13
AT SATURATION IN AIR OF 23ºC / 50% RH		-	%	2.4
AT SATURATION IN WATER OF A 23ºC		-	%	8
THERMAL PROPERTIES[2]				
MELTING TEMPERARUTE (DSC, 10ºC/MIN)		ISO 11357-1/-3	ºC	260
GLASS TRANSITION TEMPERATURE (DSC, 20ºC/MIN)[3]		ISO 11357-1/-3	ºC	-
THERMAL CONDUCTIVITY A 23ºC		-	W/(K.m)	0.28
COEFFICIENT OF LINEAR THERMAL EXPANSION				
AVERAGE VALUE BETWEEN 23-60ºC		-	M/(m.K)	80×10^{-6}
AVERAGE VALUE BETWEEN 23-100ºC		-	M/(m.K)	95×10^{-6}
TEMPERATURE OF DEFLECTION UNDER LOAD				
METHOD A 1.8 MPA	+	ISO 75-1/-2	ºC	85
MAXIMUM ALLOABLE SERVICE TEMPERATURE IN AIR				
FOR SHORT PERIODS[4]		-	ºC	180
CONTINUOUSLY: FOR 5.000/20.000H[5]		-	ºC	95/80
MINIMUM SERVICE TEMPERATURE[6]		-	ºC	-30
FAMMABILITY[7]				
"OXYGEN INDEX"		ISO 4589-1/-2	%	26
ACCORDING TO UL94 (3/6MM DE ESPESSURA)		-	-	HB/HB
MECHANICAL PROPERTIES AT 23ºC[8]				
TENSION TEST[9]				
TENSILE STRESS AT YIELD/AT BREAK[10]	+	ISO 527-1/-2	MPa	90/-
TENSILE STRESS AT YIELD/AT BREAK[10]	++	ISO 527-1/-2	MPa	55/-
TENSILE STRENGTH[10]	+	ISO 527-1/-2	MPa	93
TENSILE STRAIN AT YIELD[10]	+	ISO 527-1/-2	%	5
TENSILE STRAIN AT BREAK[10]	+	ISO 527-1/-2	%	50
TENSILE STRAIN AT BREAK[10]	++	ISO 527-1/-2	%	>100
TENSILE MODULUS OF ELASTICITY[11]	+	ISO 527-1/-2	MPa	3550
TENSILE MODULUS OF ELASTICITY[11]	++	ISO 527-1/-2	MPa	1700
COMPRESSION TEST[12]				
COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN[11]	+	ISO 604	MPa	32/62/100
CHARPY IMPACT STRENGTH - UNNOTCHED[13]	+	ISO 179-1/1eU	KJ/m²	NO BREAK
CHARPY IMPACT STRENGTH - NOTCHED	+	ISO 179-1/1eA	KJ/m²	4.5
BALL IDENTATION HARDNESS[4]	+	ISO 2039-1	N/mm²	160
ROCKWELL HARDNESS[14]	+	ISO 2039-2	-	M 88
ELECTRICAL PROPERTIES AT 23ºC				
ELECTRIC STRENGTH[15]	+	IEC 60243-1	kV/mm	27
ELECTRIC STRENGTH[15]	++	IEC 60243-1	kV/mm	18
VOLUME RESISTIVITY	+	IEC 60093	Ohm.cm	$> 10^{14}$
VOLUME RESISTIVITY	++	IEC 60093	Ohm.cm	$> 10^{12}$
SURFACE RESISTIVITY	+	IEC 60093	Ohm	$> 10^{13}$
SURFACE RESISTIVITY	++	IEC 60093	Ohm	$> 10^{12}$
RELATIVE PERMITTIVITY ε_r : A 100HZ	+	IEC 60250	-	3.8
RELATIVE PERMITTIVITY ε_r : A 100HZ	++	IEC 60250	-	7.4
RELATIVE PERMITTIVITY ε_r : A 1MHZ	+	IEC 60250	-	3.3
RELATIVE PERMITTIVITY ε_r : A 1MHZ	++	IEC 60250	-	3.8
DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ	+	IEC 60250	-	0.013
DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ	++	IEC 60250	-	0.13
DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ	+	IEC 60250	-	0.020
DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ	++	IEC 60250	-	0.06
COMPARATIVE TRACKING INDEX (CTI)	+	IEC 60112	-	600
COMPARATIVE TRACKING INDEX (CTI)	++	IEC 60112	-	600

NOTE: 1 g/cm³ = 1000 kg/m³ ; 1 MPa = 1 N/mm² ; 1 KV/mm = 1 MV/m

+: values for dry material

++: values referring to material in equilibrium with the standard atmosphere 23ºC / 50% rh

(1) According to method 1 of ISO 62 and measured on ø 50x3 mm discs. **(2)** The elements supplied for this property are for the most part supplied by the manufacturers of the raw materials. **(3)** The values of this property are only attributed to amorphous rather than semi-crystalline materials. **(4)** Only for short periods of exposure in applications where only very low loads are applied to the material. **(5)** Temperature that resists after a period of 5,000 / 20,000 hours. After this time, there is a decrease of about 50% in tensile strength compared to the original value. The given temperature values are based on the thermal oxidation degradation which occurs which causes a reduction of the properties. In the meantime, the maximum permissible service temperature depends in many cases essentially on the deduction and magnitude of the mechanical stresses to which the material is subject. **(6)** As the impact strength decreases with decreasing temperature, the minimum allowable service temperature is determined by the extent of impact to which the material is subjected. The values given are based on unfavorable impact conditions and can not therefore be considered absolute limits. **(7)** These assessments derive from the technical specifications of the manufacturers of the raw materials and do not allow the determination of the behavior of the materials under fire conditions. **(8)** Most of the figures given by the properties of the (+) materials are mean values of the tests done on species machined with ø 40-60 mm. **(9)** Specimen testing: Type 1b. **(10)** Speed test: 5 or 50 mm / min. **(11)** Speed test: 1m / min. **(12)** Testing specimens: cylinders ø 8 x 16 mm. **(13)** Pendulum used: 15J. **(14)** Test on 10 mm thick specimens. **(15)** Electrode configuration: cylinders ø 25 / ø 75 mm, in transformer oil according to IEC 60296.

Note that the electrical force for the extruded black material can be considerably
lower than that of natural material. The possible micro porosity in the center of conserved forms in stock significantly reduces the electric force.