metastar® YT516 is a calendered paper which offers excellent inherent dielectric and mechanical strength, flexibility and resilience. There are 9 thicknesses, from 2 mil to 30 mil (0.05 to 0.76 mm). Due to its lower content of chlorine elements, it is always used in electronic products.

Electrical properties

The typical electrical property values for metastar® YT516 paper are shown in Table1. The AC Rapid Rise dielectric strength data of Table1, representing voltage stress levels, withstood immediate at a frequency of 50Hz.

Since metastar® YT516 paper is chemically identical to YT510, the minor effects of temperature on dielectric strength and dielectric constant are shown for YT510 paper in Figure 1 of the metastar® YT510 data sheet, the same applies to YT516 paper.

Thermal properties

It is thermally similar to YT510 (210℃ UL component rated)

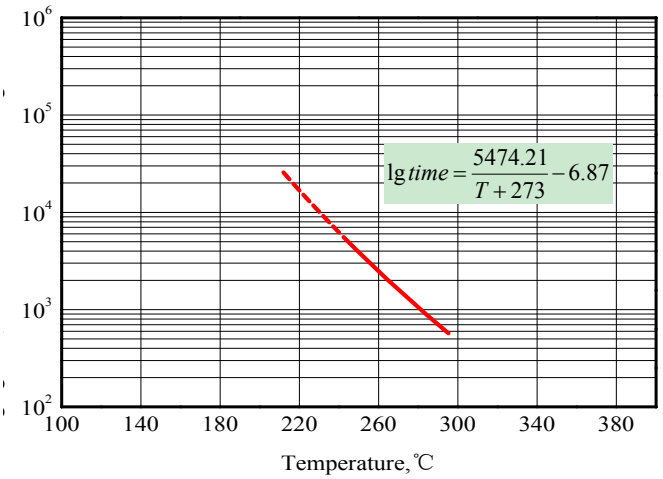

Figure1 Useful life Versus Temperature

Table 1 Typical Electrical Properties of metastar® YT516 Aramid Paper

Nominal Thickness	mil	**1**	**1.5**	**2**	**3**	**5**	**7**	**10**	**12**	**15**
	mm	**0.025**	**0.04**	**0.05**	**0.08**	**0.13**	**0.18**	**0.25**	**0.30**	**0.38**
Dielectric Strength [1)]	V/mil	**279**	**279**	**305**	**330**	**330**	**336**	**381**	**406**	**406**
	kV/mm	**11**	**11**	**12**	**13**	**13**	**14**	**15**	**16**	**16**
Dielectric Constant [2)]	—	**1.5**	**1.5**	**1.5**	**1.5**	**2.1**	**2.4**	**2.5**	**2.7**	**3.0**
Dissipation Factor [2)]	$\times 10^{-3}$	**4**	**4**	**4**	**5**	**6**	**7**	**8**	**8**	**8**

1）Testing standard GB/T1408.1-2006，using Φ25 mm top electrode and Φ75 mmbottom electrode;

2）Testing standard GB/T1409-2006，usingΦ50 mm electrode and 50Hz test frequency.

The effect of moisture (humidity) on the electrical properties of metastar® aramid paper has been shown for YT516 paper in Table 2 of YT516 data sheet. Since YT516 paper is chemically identical to YT510, the two are expected to be similarly insensitive to moisture (humidity) .

Mechanical properties

Table 3 is the typical mechanical properties of YT516.

Figure 2 and 3 reflects the temperature and moisture effect on mechanical properties of metastar® YT516 paper. The influence of two factors are similar, like elongation, tear strength and toughness are improved, tensile strength is small decreased. Conditions will increase in size due to moisture absorption. This swelling is largely reversible when the paper is re-dried. We suggest that the paper should be kept sealed in its protective polyethylene wrapper, to maintain uniform moisture content, until just before use.

Table 3 Typical Mechanical Properties of metastar® YT516 Aramid Paper

Nominal Thickness	mil	1	1.5	2	3	5	7	10	12	15	Testing standard
	mm	0.025	0.04	0.05	0.08	0.13	0.18	0.25	0.3	0.38	
Typical Thickness	mm	0.03	0.04	0.055	0.079	0.125	0.175	0.247	0.290	0.370	GB/T451.3-2002
Basis Weight	g/m^2	21	30	42	63	116	172	245	300	390	GB/T451.2-2002
Density	g/cc	0.70	0.67	0.74	0.80	0.89	0.98	1.00	1.03	1.04	
Tensile Strength N/cm	MD	16	24	35	63	130	195	235	295	360	GB/T12914-2008
	CD	6	9	14	26	52	95	160	190	245	
Elongation%	MD	3.1	4.5	6.0	7.5	9.0	10.0	12.5	15	12	
	CD	4.0	5.0	6.0	8.0	10.5	11.0	13.5	14.5	11	
Tear Strength[3)] N	MD	0.30	0.50	0.60	1.00	2.00	3.00	5.00	6.00	9.50	GB/T455-2002
	CD	0.55	0.70	1.10	1.70	3.00	4.50	6.00	7.50	13.00	

3）Elmendorf tear strength MD=Machine direction CD=Cross direction

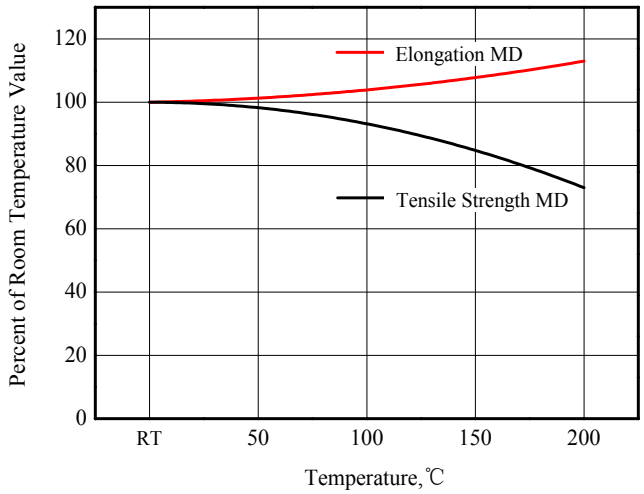

Figure 2 Temperature Effect on Mechanical properties

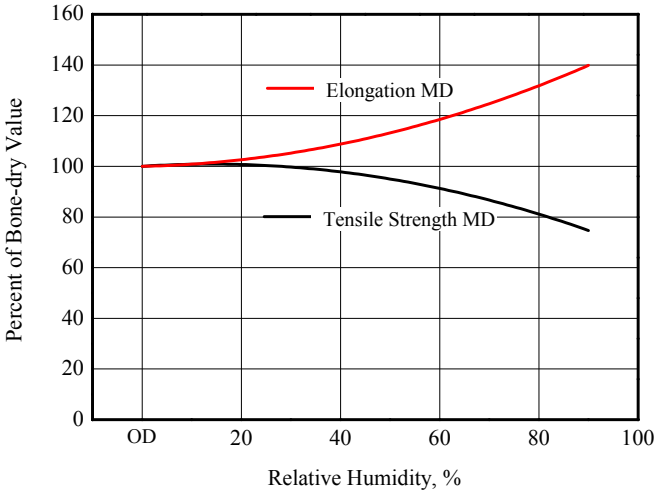

Figure 3 Humidity Effect on Mechanical properties

Chemical stability

metastar® YT516 have excellent chemi -cal stability. Owing to its stable molecular structure and corrosion resistance, it has a slight softening and swelling effect on paper, The compatibility of YT516 paper with virtually all classes of electrical varnishes and adhesives, as well as transformer fluids and with lubricating oils and refrigerants is absolutely good.

The limiting Oxygen of metastar® YT-516 is over 28% at room temperature, it will not support combustion. It forms thermal insulation protection layer under high temperature in its surface, and own UL94 VTM-0 and V-0 certification. Besides, it has an outstanding resistance, that let YT516 could use in critical control equipment for high-radiation application.

metastar

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Please note：

The properties are average values and should not be used as specification limits. All properties were measured in air under 23°C,50%RH. Metastar® papers have machine direction(MD) and cross direction(XD). Please orient the paper in the optimum direction to obtainits maximum potential performance.