

# ELCRES™ HTV150 FILM

## PRODUCT DATASHEET

### KEY FEATURES & BENEFITS

SABIC's ELCRES HTV150 dielectric film offers high temperature solutions for professional grade DC-Link power capacitors, addressing future high voltage industry requirements. ELCRES HTV150 dielectric film exhibits stable performance at -40°C to +150°C and frequency up to 100 kHz, including stable capacitance, good insulation resistance, stable dielectric constant (Dk) and low dissipation factor (Df). SABIC's HTV150 dielectric film has been validated by customers with both film-foil and metalized electrodes, including flat aluminum, heavy edge/light body and fused/patterned electrode designs. ELCRES HTV150 dielectric film can be processed on existing metallization, slitting, capacitor winding and squashing/flattening equipment. Capacitors made with HTV150 films meet damp heat aging requirements (85°C & 85%RH for 1000 hours) with little or no change in dielectric performance.



### TYPICAL PROPERTIES\*

	Test method	Unit	Value (5µm)	Value (3µm)
<b>Thickness</b>				
Mean Thickness	In-line x-ray	µm	5.0	3.0
Thickness variation	In-line x-ray	% (3σ / average thickness)	2.1	4.3
<b>Electrical</b>				
Breakdown Strength (BDS) 23°C	ASTM D149	V/µm	765	
Breakdown Strength (BDS) 150°C	ASTM D149	V/µm	725	
Dielectric Constant (Dk) at 27°C, 1 kHz (metallized film)	ASTM D150		2.9	
Dissipation Factor (Df) at 27°C, 1 kHz (metallized film)	ASTM D150		0.0017	
Clearing Counts @ 200 V/µm	Bosch Test	Counts/m²	1.5	--
Clearing Counts @ 250 V/µm	Bosch Test	Counts/m²	2.5	--
Clearing Counts @ 300 V/µm	Bosch Test	Counts/m²	5.5	--
<b>Thermal</b>				
Coefficient of Thermal Expansion (MD)	JIS K7197	(x10 <sup>-6</sup> /°C)	101	103
Coefficient of Thermal Expansion (TD)	JIS K7197	(x10 <sup>-6</sup> /°C)	138	149
Glass Transition Temperature (Tg)	ASTM D3418	°C	206	206
Shrinkage @ 150°C / 0.5 hr (MD)	JIS K7133	%	-0.21	-0.37
Shrinkage @ 150°C / 0.5 hr (TD)	JIS K7133	%	-0.21	-0.23
Shrinkage @ 170°C / 0.5 hr (MD)	JIS K7133	%	-0.34	-0.50
Shrinkage @ 170°C / 0.5 hr (TD)	JIS K7133	%	-0.25	-0.24

	Test method	Unit	Value (5µm)	Value (3µm)
<b>Physical</b>				
Density	ASTM D792	g/cm <sup>3</sup>	1.12	1.12
Water Absorption, Equilibrium, 23°C, 24 hours	ASTM D570	%	0.30	0.30
Surface roughness of roll face	JIS B0601	µm	0.23	0.21
Surface roughness of air face	JIS B0601	µm	0.25	0.23
COF (Dynamic) - Metal/Bare film	JIS K7125		0.44	0.51
COF (Static) - Metal/Bare film	JIS K7125		0.47	0.56
<b>Mechanical</b>				
Tensile Modulus (MD)	JIS K6781	MPa	2510	2490
Tensile Strength @ Break (MD)	JIS K6781	MPa	66	65
Tensile Elongation to Break (MD)	JIS K6781	%	39	22
Tensile Modulus (TD)	JIS K6781	MPa	2440	2410
Tensile Strength @ Break (TD)	JIS K6781	MPa	64	60
Tensile Elongation @ Break (TD)	JIS K6781	%	17	11
Tear Strength (MD)	JIS K7128	N/mm	100	83

\* These are typical properties and are not intended for specification purposes. Reported values are based on 5 & 3 µm film thickness and are tested at machine direction unless otherwise noted. BDS, Dk and Df are based on 3 µm film thickness.

## MANUFACTURING SPECIFICATIONS

Gauge	5 µm & 3 µm
Standard Roll Width	620 mm
Standard Roll Length	5000 m
Color code	1000
Color	Natural clear

## CONTACT INFORMATION

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