

# DuPont™ Kapton® EN-A, EN-C and EN-Z

## Polyimide Film

### Description

DuPont™ Kapton® EN-A, EN-C and EN-Z are the premium performance polyimide films for use as a dielectric substrate for chip on film, flexible printed circuits and high density interconnects.

These polyimide films show superior surface quality, high modulus, and excellent CTE control, which makes them preferred dielectric films for very fine pitch circuitry and next generation IC packaging application

### Applications

- Chip on Film (COF)
- Metallized FPC
- Semiconductor
- Package TFT

### Key Features

- Very low surface roughness, ideal for sputtering processes
- Wide CTE line ups from ultra low to low, targetting to match various materials silicone, glass, and copper.
- Stable dimensional stability over wide temperature range

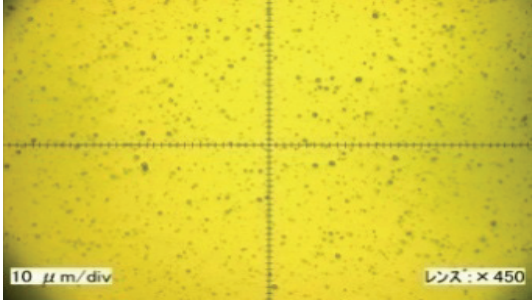
### Typical Properties of Kapton® EN-A, EN-C and EN-Z Polyimide Films

Property	Unit	Direction	150EN-C	150EN-A	140EN-Z	Test Method
			Normal CTE isotropic	Low CTE anisotropic	Ultra low CTE isotropic	
Thickness	µm	-	37.5	37.5	35.0	JIS K 7130
Tensile strength	MPa	MD	375	375	385	JIS K 7161
		TD	400	430	450	
Elongation	%	MD	80	85	70	JIS K 7161
		TD	65	60	55	
Modulus	GPa	MD	5.3	5.7	6.9	JIS K 7161
		TD	5.8	7.0	8.5	
Heat shrinkage [200 °C]	%	MD	0.01	0.01	0.01	JIS K 7133
		TD	0.01	0.01	0.01	
Tear strength - initial	N/2cm	MD	445	430	390	JIS C 2151
		TD	435	430	380	
CTE (50-200 °C)	ppm/°C	MD	16	12	7	JIS K 7197
		TD	13	5	2	
Surface roughness (Ra)	µm	-	0.01~0.03	0.01~0.03	0.01~0.03	JIS B 0601
Water absorption	%	-	1.9	2.1	2.3	JIS K 7209
Breakdown voltage	kV/mm	-	380	385	430	JIS C 2151
Flammability	UL-94	-	V-0	V-0	V-0	UL test method

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Film surface (150EN)



Film surface (150EN-C, 150EN-A, 140EN-Z)



[kapton.com](http://kapton.com)

For more information on DuPont™ Kapton® polyimide films or other DuPont products, please visit our website.

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