

# UmaPET EMMML

Polyethylene Terephthalate

Ester Industries Ltd.

## Message:

### KEY FEATURES

Uma PET EMMML is metallized film with metal deposition on emboss able surface. This film exhibits excellent process ability and is suitable for high speed and high resolution hard embossing. The emboss able surface eliminates the need for additional polymer coating over film.

It has excellent mechanical properties, flex crack resistance and excellent gloss.

### APPLICATIONS

Uma PET EMMML film is mostly used as embossing film for making Holographic Film in different holographic textures which is used in wide range of applications.

Packaging for making pouches, paper lamination and other decorative end use.

Security stickers, stickers etc as deterrent for duplication and counterfeiting of products such as credit cards drivers licenses, pharmaceutical products, computer software etc.

General Information			
Features	Embossed		
	Good Crack Resistance		
	Good Processability		
	High Gloss		
	Metallizable		
Uses	Film		
	Packaging		
	Stationary Supplies		
Forms	Film		
Physical	Nominal Value	Unit	Test Method
Molding Shrinkage			ASTM D1204
Flow : 150°C, 30 min, 0.0130 mm	2.5	%	
Across Flow : 150°C, 30 min, 0.0130 mm	0.40	%	
Surface Tension - Metallized side (13.0 µm)	56	mN/m	ASTM D2578
Yield (12.0 µm)	55.0	m <sup>2</sup> /kg	Internal Method
Optical Density (13.0 µm)	-3.6 to 6.4	%	Internal Method
Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	13	µm	
Film Thickness - Recommended / Available	13 µm		
Tensile Strength			ASTM D882
MD : Break, 13 µm	206	MPa	
TD : Break, 13 µm	216	MPa	
Tensile Elongation			ASTM D882
MD : Break, 13 µm	100	%	
TD : Break, 13 µm	90	%	

Oxygen Permeability <sup>1</sup> (23°C, 13 μm)	< 1.80	cm <sup>3</sup> /m <sup>2</sup> /24 hr	ASTM D3985
Water Vapor Transmission <sup>2</sup>	< 1.5	g/m <sup>2</sup> /24 hr	ASTM F1249
NOTE			
1.	0%RH		
2.	37.8°C, 90%RH, 13 μm		

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