

3M™ Contrast Enhancement Film

CEF3806

Product Description

3M™ Contrast Enhancement Film (CEF) 3806 is a specialized optically clear adhesive offering superior clarity and excellent adhesion to various transparent display substrates. 3M CEF3806 film is recommended for applications that require soft CEF for filling thick ink step (lens border frame), ITO compatibility and high adhesion. 3M CEF3806 film is UV curable which makes it suitable for film touch panel and LCM bonding applications.

Product Construction

Product	3M™ Contrast Enhancement Film CEF3806 film
Adhesive Type:	Acrylic
Adhesive Carrier:	None
Approximate Thickness:	
Release Liner:	3.0 mil (75 micron) Clear Polyester
Adhesive:	6.0 mil (150 micron)
Release Liner:	4.0 mil (100 micron) Clear Polyester



Typical Physical Properties and Performance Characteristics

Note: The following technical information and data is based upon limited 3M testing conditions and should not be used for specification purposes.

Peel Adhesion:

ASTM D3330 modified, 180 degree peel, 12 in/min (305 mm/min) 2.0 mil polyester backing

Peel Adhesion to Glass	
Dwell Time	20 min dwell at 25°C/50%RH
Units	Kgf/cm
CEF3806 film	0.78

Color:

Ultra Scan Pro (Hunter Lab)
ASTM E308, D65/10°

3M™ Contrast Enhancement Film	
CEF3806 film	
L* = 96.9	
a* = -0.06	
b* = 0.5	

Refractive Index:

(+ 0.0005 Metricon measurements)

3M™ Contrast Enhancement Film		
CEF3806 film		
405 nm	532 nm	633 nm
1.4914	1.4799	1.4747

Haze:

Haze is measured according to ASTM D1003-92

3M™ Contrast Enhancement Film	
CEF3806 film	
0.4%	

Gel Content:

Gel content is determined by the mass ratio of residual cured and uncured optically clear adhesive following immersion in ethyl acetate.

	UV Dose	Gel Content
3M CEF3806 Film	3 J/cm ² UVA	72 ± 2%

Typical Electrical Properties of 3M CEF3806 film at R.T.

ASTM-D150-92

Dielectric Constant:

3M™ Contrast Enhancement Film	
CEF3806 film	
Frequency (KHz)	Dielectric Constant
100	3.70
500	3.36

Suggested Lamination Process

Step 1: Remove secondary liner, and then laminate 3M CEF3806 film to first adherent substrate by roller at room temperature

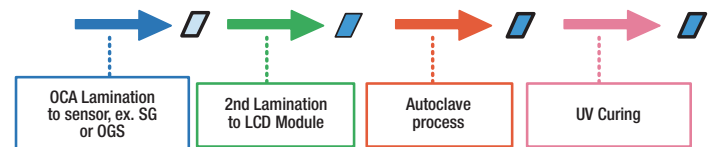
Recommendation: roller pressure 0.1 – 0.2 MPa, roller speed 0.5 – 1 m/min

Step 2: Remove primary liner, and then laminate 3M CEF3806 film/first adherent to second adherent by vacuum lamination

Recommendation: Vacuum condition < 50 Pa, pressure around 0.1 – 0.2 MPa

Step 3: Autoclave process recommendation: 30-60C/3-5kgf/cm²/20-30min

Step 4: UV curing with minimum 3J/cm² dosage



UV Cure Guidance

- UV range: 340-375nm (max absorption = 342nm)
- Minimum UV dosage and intensity: 3 J/cm², 10 mW/cm²
- Suggest using lower wavelengths of the UV-A spectra. Suitable UV sources would be Fusion D bulb and medium pressure Hg.
- LED sources, which output at longer UV-A wavelengths would be less ideal.

Storage

- Avoid applying pressure or resting objects on the product to prevent marking, denting, or deforming the surface.
- Wear gloves to prevent fingerprints or nail marks when handling.
- Product needs to be unpacked and handled in a clean-room facility.
- Product must be protected from light exposure.
- Store in sealed, foil bag under -20°C to 30°C and 50 ± 10% relative humidity. If removed from cold storage, ensure no condensation on packaging.
- Do not stack sheets more than fifteen pieces high.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Experimental Product

This 3M product is an experimental or developmental product that has not been introduced or commercialized for general sale, and its formulation, performance characteristics and other properties, specifications (if any), availability, and pricing are not guaranteed and are subject to change or withdrawal without notice.

Regulatory

For regulatory information about this product, please contact your 3M representative.

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