

# 3M™ Contrast Enhancement Film

## CEF71XX (8371-X) Series

- Superior conformability to surfaces steps
- High UV aging reliability

### Product Description

3M™ CEF71XX (8371-X) is a specialized optically clear adhesive (OCA) offering excellent clarity and adhesion to various transparent display substrates. CEF71XX (8371-X) is designed for applications that require soft OCA for filling thick ink step (lens border frame), sensor compatibility and high adhesion. CEF71XX (8371-X) is UV curable.

### Construction

Product	3M CEF71XX (8371-X)	
Adhesive Type:	Acrylic	
Adhesive Carrier:	None	
Approximate Thickness:		
Release Liner:	50 µm (2.0 mils) Clear Polyester	75 µm (2.0 mils) Clear Polyester
Adhesive:	25-100 µm (1.0-4.0 mils)	125-150 µm (5.0-6.0 mils)
Release Liner:	100 µm (4.0 mils) Clear Polyester	100 µm (4.0 mils) Clear Polyester



The 3M family of optically clear adhesives for electronic displays are usually available in two forms. 3M OCA come in roll good form. 3M Contrast Enhancement Films (CEF) are available in die-cut form.

## Typical Physical Properties and Performance Characteristics

**Note:** The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

### Performance to Environmental Conditions:

The following environmental tests were conducted in the 3M laboratory under the conditions specified without any appreciable deterioration in visible appearance (no bubbles, delamination, etc.). Sample construction is cover glass/3M CEF71XX (8371-X)/LCD cured at 3 J/cm<sup>2</sup>.

	Condition	Duration	Color-b*	% Haze	Delta E*1
High Temperature	+85°C	1000 hours	<1	<0.5	<1
Low Temperature	-40°C	1000 hours	<1	<0.5	<1
High Temp/Humidity	+65°C/90%RH	1000 hours	<1	<0.5	<1
Thermal Shock	40°C at 0.5hr & 85°C at 0.5hr	1000 cycles	<1	<0.5	<1
QUV	.55 W/m <sup>2</sup> at 340nm, Daylight filter	500 hours	<1	<0.5	<1
Xenon UV	.55 W/m <sup>2</sup> at 340nm, Daylight Filter	250 hours	<1	<0.5	<1

### Peel Adhesion:

ASTM D3330 modified, 180 degree peel from glass, 1 cm wide peel strips, 12 in/min (305 mm/min), 2.0 mil polyester backing, 3M CEF71XX (8371-X) cured at 3 J/cm<sup>2</sup>

Peel Adhesion to Glass	
Dwell Time	20 min dwell at 25°C/50%RH
Units	N/cm
3M CEF71XX (8371-X)	>5.79

### Color:

Konica Minolta 3700D, ASTM E308  
3M CEF71XX (8371-X) on LCD glass, uncured

3M CEF71XX (8371-X)
b* = 0.35

### 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 CEF71XX (8371-X)	3 J/cm <sup>2</sup>	>70%

### Haze:

Haze is measured according to ASTM D1003-92,  
3M CEF71XX (8371-X) on LCD glass, uncured

3M CEF71XX (8371-X)
0.2%

## Typical Electrical Properties at Room Temperature:

ASTM-D150-92. 3M CEF71 (8371-X) cured 3 J/cm<sup>2</sup>

### Dielectric Constant:

3M CEF71XX (8371-X)	
Frequency (kHz)	Dielectric Constant
100	3.70
500	3.51

### UV Cure Guidance

- Minimum UV dosage: 2 J/cm<sup>2</sup>, using a light source emitting UVA spectra.

### Storage and Handling

- 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.

## Technical Information

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

### Regulatory

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

### Notes

$$^1 \Delta E^* = \text{SQRT}(\Delta L^{*2} + \Delta a^{*2} + \Delta b^{*2})$$



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## Product Use

Many factors beyond 3M's control and uniquely within the user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for determining if the product is fit for a particular purpose and suitable for user's method of application.

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