

# 3M™ Optically Clear Adhesive

## CEF08XX (821X/818X) Series

- General purpose adhesive
- Easy converting for good edge quality

### Product Description

3M™ Optically Clear Adhesives: Optically clear adhesive for bonding smooth or textured, transparent substrates.

3M CEF08XX is recommended for general purpose, non-touch applications. No UV curing is required.



### Construction

Product	3M CEF0801 (8211)	3M CEF0802 (8212)	3M CEF0803 (8213)	3M CEF0804 (8214)	3M CEF0805 (8215)	3M CEF0806 (8216)	3M CEF0807 (8217)
Adhesive Type:	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic
Adhesive Carrier:	None	None	None	None	None	None	None
Approximate Thickness:							
Release Liner:	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester
Adhesive:	25 um (1 mils)	50 um (2 mils)	75 um (3 mils)	100 um (4 mils)	125 um (5 mils)	150 um (6 mils)	175 um (7 mils)
Release Liner:	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) 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.

Product	3M CEF0808 (8218)	3M CEF0809 (8219)	3M CEF0810 (8180)	3M CEF0812 (8182)	3M CEF0814 (8184)
Adhesive Type:	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic
Adhesive Carrier:	None	None	None	None	None
Approximate Thickness:					
Release Liner:	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester
Adhesive:	200 um (8 mils)	225 um (9 mils)	250 um (10 mils)	275 um (12 mils)	300 um (14 mils)
Release Liner:	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester	50 um (2 mils) Polyester

## 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/3MCEF08 (821X/818X)/PET

Substrate	Condition	Duration
High Temperature	+95°C	800 hours
Low Temperature	-40°C	500 hours
High Temp/ Humidity	+65°C at 90% R.H.	800 hours
Thermal Shock	-40°C and +85°C (1 hour dwell, <1min ramp time)	500 hours
UV	0.55 W/m <sup>2</sup> at 340nm, Daylight filter	500 hours

**Peel Adhesion:**

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

	3M CEF0802 (8212)	3M CEF0805 (8215)	3M CEF0807 (8217)	3M CEF0808 (8218)	3M CEF0809 (8219)	3M CEF0810 (8180)
	N/cm	N/cm	N/cm	N/cm	N/cm	N/cm
20 min dwell at RT:						
Stainless Steel	6.3	7.1	6.6	7.3	7.0	9.0
Glass	6.5	7.6	7.3	8.8	8.6	9.8
Acrylic	4.5	6.2	5.6	6.3	6.7	6.7
Polycarbonate	4.6	5.5	5.1	4.7	4.9	6.2
72 hr dwell at RT:						
Stainless Steel	8.4	10.5	10.1	10.8	10.9	10.6
Glass	7.9	9.2	9.3	10.6	9.8	10.6
Acrylic	5.6	7.2	7.3	7.2	8.1	8.3
Polycarbonate	5.8	7.8	7.1	7.0	7.9	8.0

**Color:**

ASTM E 1164-07/CIELAB, 3M CEF08XX (821X/818X) on LCD glass  
(BYK Gardner TCS Plus Spectrophotometer, Model 8870)

3M CEF0802 (8212)	3M CEF0805 (8215)	3M CEF0807 (8217)	3M CEF0808 (8218)	3M CEF0809 (8219)	3M CEF0810 (8180)
L*=97.11	L*=97.12	L*=97.12	L*=97.11	L*=97.13	L*=97.12
a*=-0.02	a*=-0.05	a*=-0.04	a*=-0.05	a*=-0.05	a*=-0.05
b*=0.15	b*= 0.19	b*= 0.18	b*= 0.18	b*= 0.19	b*= 0.20

**Refractive Index:**

+ 0.0005 measured for Sodium D line @ 25°C

3M CEF0802 (8212)	3M CEF0805 (8215)	3M CEF0807 (8217)	3M CEF0808 (8218)	3M CEF0809 (8219)	3M CEF0810 (8180)
1.475	1.473	1.473	1.473	1.474	1.473

**Haze:**

Haze is measured according to ASTM D1003-92  
3M CEF08XX (821X/818X) on LCD glass

3M CEF0802 (8212)	3M CEF0805 (8215)	3M CEF0807 (8217)	3M CEF0808 (8218)	3M CEF0809 (8219)	3M CEF0810 (8180)
0.6%	0.8%	0.8%	0.8%	0.7%	0.8%

## Suggested Lamination Process

Step 1: Remove secondary liner, and then laminate 3M CEF08 (821X/818X) to first adherent substrate by roller at room temperature

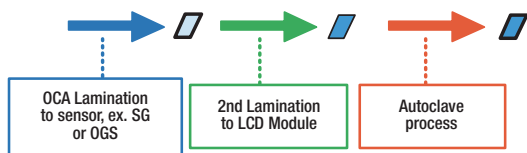
Recommendation: roller pressure 0.1 – 0.2 MPa, roller speed 0.5 – 1 m/min

Step 2: Remove primary liner, and then laminate 3M CEF08 (821X/818X)/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/cm<sup>2</sup>/ 20-30min



## Storage

- Store in original packaging or plastic bag
- 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
- Store at room temperature conditions of 22 ± 8°C and 50 ± 20% relative humidity



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## Regulatory

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

## 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.

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