

# 3M™ Optically Clear Adhesives 8271 • 8272

## Product Description

### 3M™ Optically Clear Adhesives 8271 / 8272

3M™ Optically Clear Adhesives 8271 and 8272 are for use in touch screen displays and other applications requiring an optically clear bond and contact with bare ITO patterned substrates. Excellent compatibility with ‘bare’ ITO surface without any corrosion when aged at high temperature and high humidity condition.

## Construction

Products	3M™ Optically Clear Adhesive	
	8271	8272
<b>Adhesive Type:</b>	Acrylic	Acrylic
<b>Adhesive Carrier:</b>	None	None
<b>Approximate Thickness:</b>		
<b>Release Liner</b>	2.0 mil (50 micron) Polyester	2.0 mil (50 micron) Polyester
<b>Adhesive</b>	1.0 mil (25 micron)	2.0 mil (50 micron)
<b>Release Liner</b>	2.0 mil (50 micron) Polyester	2.0 mil (50 micron) 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.

### Refractive Index:

(± 0.0005 measured for Sodium D line @ 25°C)

3M™ Optically Clear Adhesive	
8271	8272
1.485	1.485

### Haze:

Haze was measured according to ASTM D1003-92.

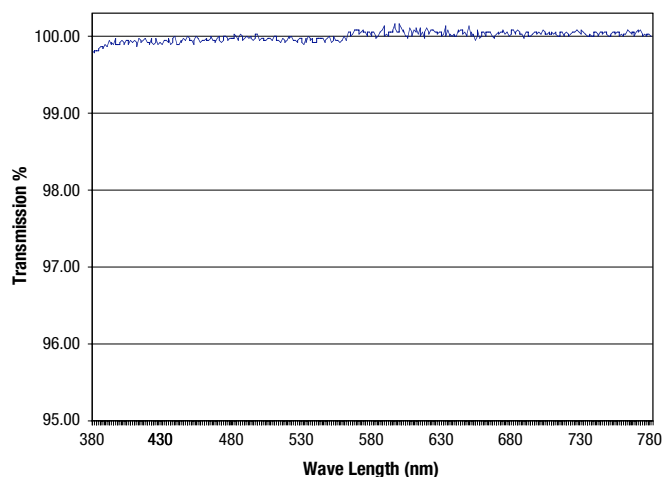
3M™ Optically Clear Adhesive	
8271	8272
0.3%	0.3%

### Transmission:

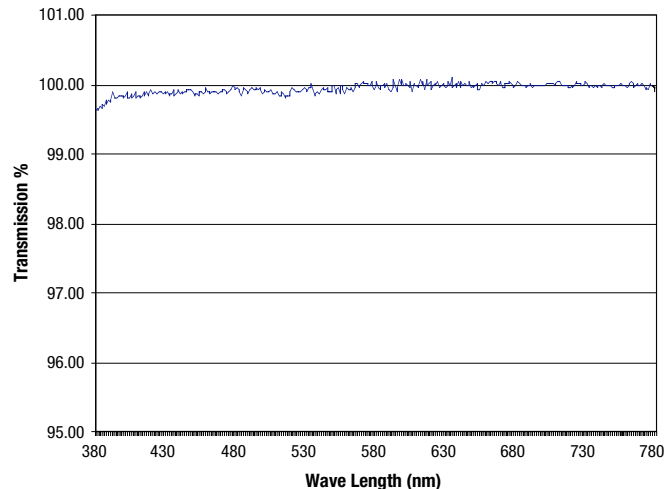
ASTM E903, D1003, and E284

Reflective-Corrected Total Luminous Transmission vs. Wavelength

#### 3M™ Optically Clear Adhesive 8271



#### 3M™ Optically Clear Adhesive 8272



# 3M™ Optically Clear Adhesives 8271 • 8272

## Typical Physical Properties and Performance Characteristics (continued)

**Note:** The following technical information and data should be considered representative or typical only 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 to various surfaces.

Condition	Substrate	3M™ Optically Clear Adhesive	
		8271	8272
		Oz/in (N/100mm)	Oz/in (N/100mm)
20 min dwell @ RT	Glass	50 (55)	57 (62)
	Acrylic	54 (59)	68 (74)
	Polycarbonate	66 (72)	73 (80)
3 days dwell @ RT	Glass	41 (45)	57 (62)
	Acrylic	54 (59)	71 (78)
	Polycarbonate	58 (63)	68 (74)
7 days dwell @ RT	Glass	52 (57)	67 (73)
	Acrylic	61 (67)	79 (86)
	Polycarbonate	76 (83)	85 (93)

### Shear Adhesion:

ASTM D-3654 Procedure H

1/2" x 1" Overlap, minutes to failure.

	3M™ Optically Clear Adhesive	
	8271	8272
Heat Aged (70°C) 500g, stainless steel	>10,000	>10,000

### Color:

ASTM – E1164-07 / CIELAB

(BYK Gardner TCS Plus spectrophotometer, model 8870)

3M™ Optically Clear Adhesive	
8271	8272
L* = 97.07	L* = 97.06
a* = -0.02	a* = -0.01
b* = 0.14	b* = 0.15

### Chemical Resistance:

When properly applied, 3M™ Optically Clear Adhesives can withstand splashes of numerous chemicals including acetone, isopropyl alcohol, and cleaners.

### Water Resistance:

Immersion in water has no appreciable effect on the bond strength at room temperature.

### Relative Temperature Resistance:

Short Term High Temperature 350°F (177°C)

Long Term High Temperature 185°F (85°C)

Long Term Low Temperature -40°F (-40°C)

### Shelf Life:

Product retains its performance and properties for two years from date of manufacture if properly stored at room temperature conditions of 72°F (22°C) and 50% relative humidity. Storage in a plastic bag is recommended.

## Available Sizes

Available Lengths (subject to minimum order requirements):

Maximum length - 3M™ Optically Clear Adhesives 8271 / 8272 180 yards or 540 feet

Available Widths (subject to minimum order requirements):

Maximum width - 3M™ Optically Clear Adhesives 8271 / 8272 24 inches

Normal Slitting Tolerance ± 1/32 in. (0.8 mm)

Core Size 3.0 in. (76.2 mm)

## Application Techniques

For maximum bond strength the surface should be thoroughly cleaned and dried. To obtain greatest benefit, laminations should be done in a class 10,000 cleanroom or better and using equipment with static charge elimination.

Bond strength can be improved with firm application pressure and moderate heat causing the adhesive to develop intimate contact with the bonding surface.

# 3M™ Optically Clear Adhesives 8271 • 8272

## General Information

- Light transmission >99% when corrected for reflection losses.
- Haze level < 5% for 3M™ Optically Clear Adhesives.
- ‘Bare’ ITO compatible.
- Non-birefringent when removed from carrier film.
- High temperature, humidity, and UV resistance.
- Long term durability without yellowing, delaminating, or degrading.
- High cohesive and peel strength for reliably bonding most transparent substrates.
- 3M™ Optically Clear Adhesives 8271 and 8272 are coated and converted in a clean room.
- 3M optically clear adhesives are inspected to reduce the occurrence of bubbles, dirt, gels and other optical distortions.
- Wound on plastic cores and wrapped in plastic to eliminate paper fiber contamination.
- Two film liners for optimum adhesive smoothness and differential release for ease of processing and protection from contamination.

## Application Ideas

- Touchscreens- for bonding film and glass laminates.
- Transparent graphic overlays.
- Projection screens.
- Avionics/military displays.
- Optical management films for LCD.

### **Processing:**

#### **Laminating**

Recommended nip roll or roller platen press type laminator to maintain optical aesthetics when laminated. Hand lamination not advised. Use best process control standards possible to control variables. (See **3M Laminating Technical Bulletin** for additional information.)

#### **Die-cutting**

Use high precision, tight tolerance tooling designed to cleanly cut film and pressure-sensitive adhesive.

## Certification/Recognition

**MSDS:** 3M has not prepared a MSDS for these products which are not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, these products should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

**TSCA:** These products are defined as articles under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.

**RoHS:** These products comply with the requirements of EU Directive 2002/95/EC and 2005/618/EC.

## For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634. Address correspondence to: 3M Electronics Markets Materials Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923.

In Canada, phone: 1-800-364-3577.

In Puerto Rico, phone: 1-787-750-3000.

In Mexico, phone: 52-70-04-00.

## Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

## Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture at the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



### Electronics Markets Materials Division 3M Electronics

3M Center, Building 21-1W-10, 900 Bush Avenue  
St. Paul, MN 55144-1000  
1-800-251-8634 phone  
651-778-4244 fax  
www.3M.com/electronics

3M is a trademark of 3M Company.  
Please recycle. Printed in U.S.A.  
© 3M 2008. All rights reserved.  
60-5002-0353-8

