## 3M<sup>™</sup> Optically Clear Adhesive 8142KCL

## **Product Description**

3M<sup>™</sup> Optically Clear Adhesive 8142KCL is for general purpose applications including display touch applications where very good adhesion and ITO compatibility is required.

### Construction

| Products                                | 3M™ Optically Clear Adhesive<br>8142KCL |
|---|---|
| Adhesive Type:                          | Acrylic                                 |
| Adhesive Carrier:                       | None                                    |
| Approximate Thickness:<br>Release Liner | 50 μm<br>(2.0 mil)<br>Clear Polyester   |
| Adhesive                                | 50 μm<br>(2.0 mil)                      |
| Release Liner                           | 50 µm<br>(2.0 mil)<br>Clear 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<br>8142KCL |  |
|---|--|
| 1.4735                                  |  |

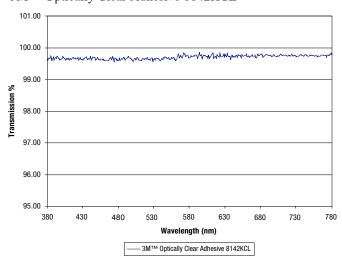
#### Haze:

Haze was measured according to ASTM D1003

| 3M™ Optically Clear Adhesive<br>8142KCL |  |
|---|--|
| 0.1%                                    |  |

#### **Transmission:**

ASTM E903, D1003, and E284
Reflective-Corrected Total luminous
Typical transmittance vs. wavelength for
3M™ Optically Clear Adhesive 8142KCL



#### **Peel Adhesion:**

ASTM D3330 modified, 90 degree peel, 12 in./min. (305 mm/min) 1 mil polyester backing.

|                              | Substrate | 3M™ Optically Clear Adhesive<br>8142KCL |
|------------------------------|-----------|---|
| Initial<br>(20 minute dwell) | PMMA      | 67 N/100mm<br>(61 oz/in)                |
|                              | Glass     | 39 N/100mm<br>(36 oz/in)                |



# Typical Physical Properties and Performance Characteristics (continued)

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

#### **Shear Adhesion:**

ASTM D-3654

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

|   | 3M™ Optically Clear Adhesive<br>8142KCL |
|---|---|
| Heat Aged<br>1000 gram, stainless steel | >10,000                                 |

#### **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.

## **Application Techniques**

For maximum bond strength the surface should be thoroughly cleaned and dried. To obtain greatest benefit, laminations should be done in the cleanest environment possible 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.

#### **General Information**

- Light transmission >99% when corrected for reflection losses.
- Free of birefringence with no film carrier.
- 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<sup>TM</sup> Optically Clear Adhesive is 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 laminate.
- · 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.

## 3M™ Optically Clear Adhesive 8142KCL

## Certification/Recognition

MSDS: 3M has prepared an MSDS for this product, although it is 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, the product 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 its performance and present potential health and safety hazards.

**TSCA:** This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements.

**RoHs Complaint/REACH Compliant:** This product complies with the European Union's "Restriction of Hazardous Substances" (RoHs) initiative and with European REACH regulations 2002/95/EC and 2005/618/EC.

## For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-866-599-4227. Address correspondence to: 3M, Electronics Markets Materials Division, 3M Center, Building 225-3S-06, 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.





3M Center, Building 225-35-06 State Paul, MN 55144-1000 1-866-599-4227 phone 651-778-4244 fax www.3M.com/electronics

