Adhesives and Sealants for Handheld Devices and Displays
Henkel is your total solution provider for adhesives, sealants and functional coatings.

Through close customer partnership, industry know-how and engineering support, we enable innovative design for handheld devices and displays.

Global Capabilities
We are the global technology leader, with an extensive network to support the customers’ value stream.

Design Partnership
Our experienced team of engineers provides documented design and application support.

Engineering Support
With unsurpassed development, engineering and field support, Henkel provides the expertise to empower customers to improve quality, efficiency and innovation.

Customer Intimacy
Through close collaboration and intimate knowledge of customer applications and processes, Henkel creates exciting solutions that enable innovation.

Innovation Leader
As the innovation leader in sealing, bonding and coating, Henkel delivers solutions to meet fast design changes and developmental challenges.

Achieving more with less
Our commitment to leadership in sustainability is deeply embedded in our values. With our revised Sustainability Strategy for 2030, we are building on our strong track record. At the same time, we are aiming to address one of the central future challenges: to decouple growth from resource consumption. At the heart of this strategy is therefore the simple, yet challenging, ambition: to achieve more with less. It aims to create more value for our customers, consumers, communities and the company alike, while simultaneously reducing the environmental footprint.
Mobile Device Applications

Other Applications

**APPLICATION**
- Anti-scratch coating
**PRODUCT**
- Functional Coatings
**BENEFITS**
- Clear coating for plastic cover
- Anti-scratch
- Easy operation and reliability

**APPLICATION**
- Cushion / sealing
**PRODUCT**
- Cured-in-Place Gaskets
**BENEFITS**
- Good bonding strength
- Soft and highly flexible
- Reusable and durable
- Easily processed to high design tolerances

*We are currently developing several new formulations for this application. Contact us for samples or technical information.*

**APPLICATION**
- Keypad and side key bonding
**PRODUCT**
- Cyanoacrylate Adhesives
- Silicone Adhesives
- UV Acrylic Adhesives
**BENEFITS**
- High adhesion on flexible and inactive substrates with small bond areas
- High strength of silicon rubber to plastic / metal
- Low bloom
- Fast fixture
- Easy operation and reliability

**APPLICATION**
- Battery cell molding
**PRODUCT**
- TECHNOMELT® Molding
**BENEFITS**
- Water tightness
- Low cost
- Good thermal resistance

**APPLICATION**
- Logo bonding
**PRODUCT**
- PUR Hotmelt Adhesives
- 2-Part Acrylic Adhesives
- 2-Part Polyurethane Adhesives
- Cyanoacrylate Adhesives
**BENEFITS**
- High strength
- Thin bondlines
- Easy operation and reliability

**APPLICATION**
- Touch panel / windows bonding to cover
**PRODUCT**
- PUR Hotmelt Adhesives
- 2-Part Acrylic Adhesives
- 2-Part Polyurethane Adhesives
**BENEFITS**
- Structural strength
- Quick assembly and processing
- Impact and shear loading resistance

**APPLICATION**
- Direct bonding / cover lens bonding
**PRODUCT**
- Liquid Optically Clear Adhesives
**BENEFITS**
- Optical clarity with high bonding strength
- Eliminate air bubbles during lamination
- Flexible with low cure
- LCD compatible
- Ink step compatible

**APPLICATION**
- Metal and plastic bonding
**PRODUCT**
- PUR Hotmelt Adhesives
- 2-Part Acrylic Adhesives
- 2-Part Polyurethane Adhesives
**BENEFITS**
- Structural strength
- Quick assembly and processing
- Impact and shear loading resistance

**APPLICATION**
- Camera lens bonding
**PRODUCT**
- PUR Hotmelt Adhesives
- 2-Part Acrylic Adhesives
- Cyanoacrylate Adhesives
- UV Acrylic Adhesives
**BENEFITS**
- High strength
- Thin bondlines
- Easy operation and reliability

**APPLICATION**
- Plastic / metal trim bonding
**PRODUCT**
- PUR Hotmelt Adhesives
- 2-Part Acrylic Adhesives
- Cyanoacrylate Adhesives
- UV Acrylic Adhesives
**BENEFITS**
- High strength
- Thin bondlines
- Easy operation and reliability

**APPLICATION**
- Overmolding / insert molding
**PRODUCT**
- Overmolding Adhesives
**BENEFITS**
- Structural strength
- Fast fixture with molding process
- Impact and shear loading resistance
Tablet Applications

1. APPLICATION: Direct bonding / cover lens bonding
   PRODUCT: Liquid Optically Clear Adhesives
   BENEFITS:
   - Optical clarity with high bonding strength
   - Eliminate air bubbles during lamination
   - Flexible with low corrosion
   - LCD compatible
   - Ink step compatible

2. APPLICATION: Touch panel bonding to cover
   PRODUCT: 2-Part Acrylic Adhesives
   BENEFITS:
   - Structural strength
   - Quick assembly and processing
   - Impact and shear loading resistance

3. APPLICATION: Camera lens / logo bonding
   PRODUCT: 2-Part Acrylic Adhesives
   BENEFITS:
   - Small dispense volumes
   - Suitable for visible bondlines
   - Low outgassing

4. APPLICATION: Back cover bonding / inside bracket bonding
   PRODUCT: PUR Hotmelt Adhesives
   BENEFITS:
   - Structural strength
   - Quick assembly and processing
   - Impact and shear loading resistance
Laptop Applications

**APPLICATION**
**Touch panel / window bonding to LCD bezel**
**PRODUCT**
- 2-Part Acrylic Adhesives
- 2-Part Polyurethane Adhesives
- PUR Hotmelt Adhesives

**BENEFITS**
- Structural strength
- Quick assembly and processing
- Impact and shear loading resistance

**APPLICATION**
**Overmolding / insert molding**
**PRODUCT**
- Overmolding Adhesives

**BENEFITS**
- Structural strength
- Fast fixture with molding process
- Impact and shear loading resistance

**APPLICATION**
**Top case bonding**
**PRODUCT**
- 2-Part Acrylic Adhesives

**BENEFITS**
- Structural strength - high toughness
- Quick assembly and processing
- Impact and shear loading resistance

**APPLICATION**
**Battery bonding and sealing**
**PRODUCT**
- PUR Hotmelt Adhesives
- Cyanacrylate Adhesives

**BENEFITS**
- Bond dissimilar substrates
- High-strength with minimal bond area
- Resistance to impact, bending and fatigue

---

**Other Applications**

**APPLICATION**
**Latch, magnet and hinge bonding**
**PRODUCT**
- Acrylic Adhesives
- 2-Part Acrylic Adhesives

**BENEFITS**
- High vibration and peel force resistance
- Structural strength on dynamic parts

**APPLICATION**
**Connector & internal mounting**
**PRODUCT**
- Acrylic Adhesives
- 2-Part Acrylic Adhesives
- Cyanoacrylate Adhesives

**BENEFITS**
- Bond aluminum, magnesium and other metal and structural plastic materials
- Unisize with high tensile and impact strength
- Withstand thermal variations

**APPLICATION**
**Cushion & gasketing**
**PRODUCT**
- Cured-in-Place Gaskets (MS Polymer, Silicone, Foamed Hotmelt, Light Cure Adhesives)

**BENEFITS**
- Flexible with structural strength, low corrosion, and excellent durability
- Seal and bond
- LCD compatible

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*We are currently developing several new formulations for this application. Contact us for samples or technical information.*
## LCD TV Applications

### Other Applications

**APPLICATION**
Panel to frame bonding (ABS + epoxy ink)

**PRODUCT**
> PUR Hotmelt Adhesives

**BENEFITS**
> Good strength
> High resilience
> Good endurance against aging

**APPLICATION**
Panel to frame bonding (PC + PC)

**PRODUCT**
> UV Acrylic Adhesives

**BENEFITS**
> Fast cure
> Good bonding strength

**APPLICATION**
Panel to frame bonding (SS + SS, Al + SS, Al + PMMA)

**PRODUCT**
> 2-Part Acrylic Adhesives

**BENEFITS**
> High bonding strength
> Good endurance against aging

**APPLICATION**
Anti-dust, waterproofing agent between LCD module and top glass

**PRODUCT**
> Silicone Adhesives
> Cured-in-Place Gaskets
> Liquid Optically Clear Adhesives

**BENEFITS**
> Good water tightness
> High resistance against aging
> Disassembly
> High strength
> High impact

**APPLICATION**
TV stand bonding (ABS + ink glass)

**PRODUCT**
> PUR Hotmelt Adhesives
> 2-Part Acrylic Adhesives

**BENEFITS**
> High bonding strength
> Good endurance against aging

**APPLICATION**
TV stand bonding (PMMA + PC)

**PRODUCT**
> UV Acrylic Adhesives

**BENEFITS**
> Fast cure
> Good strength

**APPLICATION**
LED rail holding

**PRODUCT**
> 2-Part Acrylic Adhesives
> Thermally Conductive Acrylic Adhesives

**BENEFITS**
> High thermal conductivity
> High bonding strength
> Good endurance against aging

**APPLICATION**
Threadlocking

**PRODUCT**
> Threadlocking Adhesives

**BENEFITS**
> Disassembly
> Anti-vibration, anti-loosening

**APPLICATION**
Reinforced ribs bonding

**PRODUCT**
> 2-Part Acrylic Adhesives

**BENEFITS**
> High bonding strength
> Good endurance against aging

**APPLICATION**
Bottom chassis bonding

**PRODUCT**
> 2-Part Acrylic Adhesives

**BENEFITS**
> High heat conductivity
> Vibrating absorption
> High bonding strength
> Good endurance against aging
As a part of your development team, Henkel aims to find high-quality, cost-efficient design solutions for your challenging application requirements in peripherals assembly.
Typical Applications

Touch Panel / Window to Frame Assembly

<table>
<thead>
<tr>
<th>DEVICE TYPE</th>
<th>DIMENSIONS</th>
<th>TECHNICAL CHALLENGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smartphone</td>
<td>3 - 6 inch</td>
<td>Fine dispensing beads, high impact resistance at thin bonding line</td>
</tr>
<tr>
<td>Tablet</td>
<td>7 - 11 inch</td>
<td>High impact resistance at thin bonding line</td>
</tr>
<tr>
<td>LCD TV</td>
<td>20 - 70 inch</td>
<td>Flexible &amp; easy assembling process</td>
</tr>
</tbody>
</table>

Technical Solutions

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>PUR Hotmelt Adhesives</th>
<th>UV Pre-Activated PUR Hotmelt Adhesives</th>
<th>2-Part Acrylic Adhesives</th>
<th>2-Part Polyurethane Adhesives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonding Strength</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>Good</td>
<td>Good</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Fast Fixture</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Fair</td>
<td>Fair</td>
</tr>
<tr>
<td>Simple / Flexible Process</td>
<td>Good</td>
<td>Good</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Thinner Bonding</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Fair</td>
<td>Fair</td>
</tr>
</tbody>
</table>

LOCTITE® Products

- 3542: Excellent overall performance
- 3572: High reliability on plastics substrates
- 3573: Black color, faster fixture
- 3575: Black color, better reliability

Legend: Fair > > > > > Excellent

Case to Frame Assembly

<table>
<thead>
<tr>
<th>DEVICE TYPE</th>
<th>DIMENSIONS</th>
<th>TECHNICAL CHALLENGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tablet</td>
<td>7 - 11 inch</td>
<td>High productivity, high reliability</td>
</tr>
<tr>
<td>Laptop</td>
<td>12 - 15 inch</td>
<td>High productivity, less warpage, high reliability</td>
</tr>
<tr>
<td>LCD TV</td>
<td>20 - 70 inch</td>
<td>Flexible &amp; easy assembly process</td>
</tr>
</tbody>
</table>

Technical Solutions

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>PUR Hotmelt Adhesives</th>
<th>2-Part Acrylic Adhesives</th>
<th>2-Step Acrylic Adhesives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonding Strength</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Fast Fixture</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Fair</td>
</tr>
<tr>
<td>Simple / Flexible Process</td>
<td>Good</td>
<td>Excellent</td>
<td>Fair</td>
</tr>
<tr>
<td>Thinner Bonding</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Fair</td>
</tr>
</tbody>
</table>

LOCTITE® Products

- 3542: Excellent overall performance
- 3572: High reliability on plastics substrates
- 3573: Black color, faster fixture
- 3575: Black color, better reliability

Legend: Fair > > > > > Excellent
Typical Applications

Assembly of Sub-Assemblies

<table>
<thead>
<tr>
<th>APPLICATION OVERVIEW</th>
<th>TECHNICAL CHALLENGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEVICE TYPE</td>
<td>TECHNICAL CHALLENGE</td>
</tr>
<tr>
<td>I/O Components Bonding</td>
<td>Narrow bonding area, off-site issue control</td>
</tr>
<tr>
<td>Camera Module / Lens Bonding</td>
<td>High impact resistance</td>
</tr>
<tr>
<td>Magnet / Metal Logo Bonding</td>
<td>High bonding strength, easy process</td>
</tr>
</tbody>
</table>

Technical Solutions

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>PUR Hotmelt Adhesives</th>
<th>UV Pre-Activated PUR Hotmelt Adhesives</th>
<th>2-Part Acrylic Adhesives</th>
<th>2-Step Acrylic Adhesives</th>
<th>1-Part Epoxy Adhesives</th>
<th>2-Part Epoxy Adhesives</th>
<th>Cyanoacrylate Adhesives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonding Strength</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Fast Fixture</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Simple / Flexible Process</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Thinner Bondline</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
</tbody>
</table>

LOCTITE® Products

- 3542: Excellent overall performance
- 1910: Instant fixture, thinner bondline
- HF8010: Fast cure, excellent reliability
- HF3010: Excellent overall performance
- 3542: Instant fixture, thinner bondline
- 3512: Fast process, superior bonding
- 3572: High reliability on plastics substrates
- HHD 8072: Instant fixture, excellent impact resistance
- HHD 8061: Ultra fast cure, excellent reliability
- 3573: Black color, faster fixture
- HHD 2075: Black color, better reliability

Legend: ★ ★ ★ ★ ★ ★ Excellent

Today’s handheld devices and displays are loaded with amazing technologies. We think you’ll find these truly impressive.
2-Part Acrylic Adhesives

- Superior shear strength
- Excellent impact resistance
- High temperature / humidity performance
- Fast fixture
- Halogen-free

Specially formulated to provide tough, long-lasting bonds to most surfaces, including steel, galvanized steel, aluminum, sheet metal, stainless steel, plastics and composites.

Capable of reducing or replacing the need for threaded fasteners, welds or rivets, resulting in a lower cost assembly.

LOCTITE® HHD 8160 Structural Adhesive

LOCTITE® HHD 8160 Structural Adhesive has been specifically formulated to deliver lower temperature fast fixture processing capability. It processes excellent adhesion and damp heat resistance to magnesium aluminum alloys, anodized aluminum and PC/ABS blends.

- Ultra fast fixture at lower temperature
- Superior shear strength
- Excellent impact strength
- High temperature / humidity resistance
- Phthalate-free
- Halogen-free

### Properties Comparison

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>LOCTITE® HFB150R</th>
<th>LOCTITE® HFB150R</th>
<th>LOCTITE® HHD 8160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mix Ratio (Resin : Hardener)</td>
<td>10 : 1</td>
<td>10 : 1</td>
<td>10 : 1</td>
</tr>
<tr>
<td>Open Time</td>
<td>2 - 3 minutes</td>
<td>3 - 4 minutes</td>
<td>2 - 3 minutes</td>
</tr>
<tr>
<td>Fixture Speed at 60°C to 80°C</td>
<td>60 - 90 seconds</td>
<td>60 - 90 seconds</td>
<td>60 - 80 seconds</td>
</tr>
<tr>
<td>Metal to metal</td>
<td>Very high</td>
<td>Very high</td>
<td>Very high</td>
</tr>
<tr>
<td>Metal to Plastic</td>
<td>High</td>
<td>Very high</td>
<td>Very high</td>
</tr>
<tr>
<td>Aging Resistance</td>
<td>Good</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Henkel Dispensing Equipment</td>
<td>LOCTITE® 50 ml Dual Cartridge Dispense System</td>
<td>LOCTITE® 50 ml Dual Cartridge Dispense System</td>
<td>LOCTITE® 50 ml Dual Cartridge Dispense System</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>8°C to 25°C</td>
<td>2°C to 8°C</td>
<td>2°C to 9°C</td>
</tr>
</tbody>
</table>

### Fixture Time

![Fixture Time Graph]

### Lap Shear Strength

![Lap Shear Strength Graph]
2-Part Acrylic Hybrid Adhesives

**NEW**

**LOCTITE® HHD 8900 Structural Adhesive**

For small parts bonding where long open time minimizes cure in mix nozzle. For large parts bonding where long open time maximizes work life and fixture can be achieved quickly with heat.

- Henkel patented 2-part acrylic hybrid technology*
- Long open time (~10 minutes) with fast cure (45-60 seconds) at 60°C
- Excellent tensile strength
- High temperature / humidity resistance
- Halogen-free & phthalate-free
- Less odor

* Patent pending

**Properties**

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>LOCTITE® HHD 8900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Base</td>
<td>Acrylic</td>
</tr>
<tr>
<td>Color (Cured)</td>
<td>Light green</td>
</tr>
<tr>
<td>Full Cure Time</td>
<td>24 hours @ 23°C</td>
</tr>
<tr>
<td>Mix Ratio (by Volume)</td>
<td>1 : 1</td>
</tr>
<tr>
<td>Side Impact Strength (Metal to Polyamide)</td>
<td>2.1 J</td>
</tr>
<tr>
<td>Physical Form</td>
<td>Gel</td>
</tr>
<tr>
<td>Shear Strength on SS304 @ Room Temperature</td>
<td>3,270 pound-force per inch²</td>
</tr>
<tr>
<td>Shelf Life</td>
<td>12 months @ 4°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>4°C</td>
</tr>
<tr>
<td>Time to Handling Strength</td>
<td>16 - 20 minutes @ 23°C</td>
</tr>
<tr>
<td>Fixture Time @ 60°C</td>
<td>1 minute</td>
</tr>
<tr>
<td>Nozzle Life</td>
<td>11 minutes</td>
</tr>
<tr>
<td>Anti-sag</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**NEW**

**LOCTITE® HF368 Structural Adhesive**

**LOCTITE® SF 7888 Accelerator**

For Bonding in High-Impact Applications

- Long open time
- Fast fixture
- Good shear strength
- Good impact strength
- Thermal cycling resistance
- Phthalate-free & halogen-free

**Properties Comparison**

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>Traditional 2-Part Acrylic Adhesive</th>
<th>LOCTITE® HF368 + LOCTITE® SF 7888</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mix Method</td>
<td>Must mix</td>
<td>2-step</td>
</tr>
<tr>
<td>Open Time</td>
<td>Standard</td>
<td>Very long</td>
</tr>
<tr>
<td>Fixure Time</td>
<td>Standard</td>
<td>Very quick</td>
</tr>
</tbody>
</table>

**Shear Strength**

- **LOCTITE® HF368** Structural Adhesive
- **Traditional 2-Part Acrylic Adhesive**

**NEW**

**TYPICAL APPLICATIONS**

Structural bonding of frames and parts.
PUR Hotmelt Adhesives

- One-part, solvent-free
- Good adhesion to plastic, metal, glass and composite
- Fast initial bonding
- Very thin bondlines
- Long open time
- Low cost
- Wide variety of formulations available

Cure at room temperature with moisture reaction. Bond variety of materials such as plastics, metals and glass.

LOCTITE® Adhesives Compared to PSA Tape

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>LOCTITE® 3541 PUR Hotmelt Adhesive</th>
<th>LOCTITE® 3542 Cyanoacrylate Adhesive</th>
<th>Pressure Sensitive Adhesive (PSA) Tapes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond very thin joints</td>
<td>Yes</td>
<td>Very good</td>
<td>Can't bond very thin joints because of die-cutting design limitation, insufficient strength</td>
</tr>
<tr>
<td>Strength of bonding plastic</td>
<td>Very strong</td>
<td>Good</td>
<td>Weak bond, especially in very small area</td>
</tr>
<tr>
<td>Fill gap caused by parts variation</td>
<td>Yes, liquid fills gap easily</td>
<td>Yes, liquid fills gap easily</td>
<td>No, tape does not fill these gaps</td>
</tr>
<tr>
<td>Appearance of bonded edges</td>
<td>Very good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Complete seal</td>
<td>Yes</td>
<td>Yes</td>
<td>Difficult, depends on design and parts tolerance</td>
</tr>
<tr>
<td>Bonding curved surfaces</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Total applied cost</td>
<td>Low</td>
<td>Low</td>
<td>High (die-cutting cost)</td>
</tr>
</tbody>
</table>

Properties Comparison

- Bond very thin joints
- Good adhesion to plastic, metal, glass and composite
- Fast initial bonding
- Very thin bondlines
- Long open time
- Low cost
- Wide variety of formulations available

Cure at room temperature with moisture reaction. Bond variety of materials such as plastics, metals and glass.

New LOCTITE® 3573 Hotmelt Adhesives

- Black color
- Long open time and fast fixture
- Good bonding performance on various substrates
- Good impact strength

Product Profile / Positioning

- Reactive black hotmelt adhesives based on polyurethane prepolymers
- Provide high initial strength instantly after joining the parts
- Suitable open time for automatic or manual assembly line
- Aesthetic improvement

LOCTITE® 3573
- Ultra fast fixture
- Standard open time
- Improved bonding performance on plastics
- Long open time

LOCTITE® HHD 3575
- Ultra fast fixture
- Standard open time
- Improved bonding performance on plastics
- Long open time

Properties Comparison

- Appearance
- Viscosity (cP)
- Bonding Performance
- Fast Fixture
- Open Time
- Impact Resistance
- Pull Strength

- Bond performance depends on substrates
UV Pre-Activated PUR Hotmelt Adhesives

**NEW**

LOCTITE® 3580 Structural Adhesive
LOCTITE® HHD 3581 Structural Adhesive
LOCTITE® HHD 3582 Structural Adhesive

- Instant fixture
- Fast processing
- Easier rework
- High impact resistance
- High bonding performance at ultra thin bondline
- Waterproof

**Product Profile / Positioning**

- **LOCTITE® UV Pre-Activated PUR Hotmelt Structural Adhesives**
  - UV and moisture dual-curing reactive polyurethane hotmelt adhesives
  - High initial strength instantly under UV radiation after joining the parts
  - Suitable open time for automatic or manual assembly line
  - Superior overflow control after UV exposure
  - Good impact resistance performance for application

**Properties Comparison**

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>LOCTITE® 3580</th>
<th>LOCTITE® HHD 3581</th>
<th>LOCTITE® HHD 3582</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonding Performance*</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Fast Fixation</td>
<td>Fast</td>
<td>Ultra Fast</td>
<td>Ultra Fast</td>
</tr>
<tr>
<td>Bondline Control</td>
<td>Good</td>
<td>Excellent</td>
<td>Good</td>
</tr>
<tr>
<td>Overflow Control</td>
<td>Good</td>
<td>Excellent</td>
<td>Good</td>
</tr>
<tr>
<td>Thickness Control</td>
<td>Thinner</td>
<td>Thinner</td>
<td>Thinner</td>
</tr>
<tr>
<td>Open Time</td>
<td>Standard</td>
<td>UV Control</td>
<td>UV Control</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>Excellent</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Equipment Needs</td>
<td>Many Clamps</td>
<td>UV Lamp</td>
<td>UV Lamp</td>
</tr>
<tr>
<td>Appearance</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Spring, 30 ml</td>
<td>White</td>
<td>Orange</td>
<td>Orange</td>
</tr>
<tr>
<td>Viscosity (mPa·s, 100ºC)</td>
<td>4,000 - 7,000</td>
<td>4,000 - 7,000</td>
<td>3,500 - 7,000</td>
</tr>
<tr>
<td>Open Time**</td>
<td>4 - 6</td>
<td>2 - 4</td>
<td>1 - 2</td>
</tr>
</tbody>
</table>

* Bonding performance depends on substrates
** UV energy: 800 - 1,000 MJ/cm²

Epoxy Adhesives

- No small molecular generation during curing
- Strong, stable polymer network structure
- High bonding strength

**NEW**

LOCTITE® HHD 4274 Structural Adhesive

- Low viscosity
- Very long work life
- Halogen-free
- Low-temperature curing
- Excellent impact resistance performance

**Work Life - Viscosity**

<table>
<thead>
<tr>
<th>Viscosity (cP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00E+07</td>
</tr>
<tr>
<td>1.00E+06</td>
</tr>
<tr>
<td>1.00E+05</td>
</tr>
<tr>
<td>1.00E+04</td>
</tr>
<tr>
<td>1.00E+03</td>
</tr>
</tbody>
</table>

**Work Life - Flow Rate**

<table>
<thead>
<tr>
<th>Flow rate (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00E+00</td>
</tr>
<tr>
<td>1.00E+01</td>
</tr>
<tr>
<td>1.00E+02</td>
</tr>
<tr>
<td>1.00E+03</td>
</tr>
<tr>
<td>1.00E+04</td>
</tr>
</tbody>
</table>

**Lap Shear Strength**

- SS + SS
- AnAl + AnAl
- Zinc Coating Steel + Zinc Coating Steel
- PC + PC

**Aging Performance**

- Decline after aging
- Retention after aging

---

**Typical Applications**

The two-part heating cured epoxy adhesive is particularly suitable in the assembly of magnetic materials used in speakers and receivers.
**Polyurethane Adhesives**

- Bond a wide variety of materials, including most metals, plastics and composites
- Exhibit superior moisture and humidity resistance, as well as good toughness and flexibility

**2-Part Polyurethane Adhesives**

- Low warpages
- High temperature / humidity performance
- Fast fixture
- Superior flexibility
- Excellent impact & shear strength
- Halogen free

**Cyanoacrylate Adhesives**

- One-component, no-mix products that cure rapidly at room temperature without heat or light — exceptionally easy to use
- Excellent bond strengths to the widest range of plastics, rubbers and metals
- Widest selection of products

---

**LOCTITE® HHD 6006 Structural Adhesive**

LOCTITE® HHD 6006 is a high viscosity, 2-part urethane designed for sag resistance, low modulus and high impact resistance. Once mixed, it cures at room temperature or can be accelerated by heat.

**Properties Comparison**

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>LOCTITE® HFD6005</th>
<th>LOCTITE® HHD 6006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mix Ratio A : B</td>
<td>1 : 2</td>
<td>1 : 2</td>
</tr>
<tr>
<td>Viscosity before Mix (cP, 25°C)</td>
<td>Part A: 200 - 1,000</td>
<td>Part A: 16,000 - 19,000</td>
</tr>
<tr>
<td>Part B: 90,000 - 215,000</td>
<td>Part B: 6,000 - 55,000</td>
<td></td>
</tr>
<tr>
<td>Working Time</td>
<td>4 minutes</td>
<td>4 minutes</td>
</tr>
<tr>
<td>Curing Condition</td>
<td>Room temperature to 80°C</td>
<td>Room temperature to 80°C</td>
</tr>
<tr>
<td>Lap Shear Strength (Polyamide, psi)</td>
<td>700</td>
<td>&gt; 800</td>
</tr>
<tr>
<td>Side Impact (Polyamide)</td>
<td>9.2</td>
<td>9.2</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>21°C to 28°C</td>
<td>21°C to 28°C</td>
</tr>
</tbody>
</table>

**Cyanoacrylate Adhesives**

- One-component, no-mix products that cure rapidly at room temperature without heat or light — exceptionally easy to use
- Excellent bond strengths to the widest range of plastics, rubbers and metals
- Widest selection of products

**NEW**

**LOCTITE® Halogen-Free® Instant Adhesives**

Henkel’s LOCTITE® range of halogen-free cyanoacrylates minimizes health and environmental concerns via chlorine- and bromine-reduced formulas.

1 Based on IEC 61249-2-21 Definition

- 900 ppm maximum chlorine | 900 ppm maximum bromine | 1,500 ppm maximum total halogens

**NEW**

**Properties Comparison**

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>General Purpose</th>
<th>Light Cure</th>
<th>Toughened</th>
<th>Low Odor / Low Bloom</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCTITE® Product</td>
<td>-</td>
<td>HF382</td>
<td>HF4305</td>
<td>HF4307</td>
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<tr>
<td>Substrates</td>
<td>-</td>
<td>プラスチックス</td>
<td>クラスター</td>
<td>ポリオレフィン</td>
</tr>
<tr>
<td>ステアリズム</td>
<td>-</td>
<td>非常に良い</td>
<td>よい</td>
<td>よい</td>
</tr>
<tr>
<td>Light Source</td>
<td>Standard LOCTITE® HHD 6006</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**WARNING**

- In combination with LOCTITE® 712 or 7452 Accelerator
- Legend: PG: Great

Products designed specifically to meet the halogen-free standards.

**NEW**

**LOCTITE® HFD 6005 Structural Adhesive**

LOCTITE® HFD 6005 is a high viscosity, 2-part urethane designed for sag resistance, low modulus and high impact resistance. Once mixed, it cures at room temperature or can be accelerated by heat.
TECHNOMELT® Molding

TECHNOMELT® molding offers a gentle encapsulation process with adhesive molding compounds to achieve the ultimate seal and robust “molded-on protection”

- Replaces both the housing and potting in one operation
- Shorter cycle times (15 - 45 seconds) and reduced number of operations
- Reduced molding material consumption
- Complete sealing of the components, providing watertight encapsulation
- Effective strain relief and environmental resistance
- Safe encapsulation of fragile components

Low pressure molding process, to protect sensitive components from environmental hazard.

Light Cure Adhesives

- One-component, no-mix products that cure extremely fast for immediate QC in high-volume assembly operations
- Excellent bond strength to plastics and glass
- Bond-on-demand capability for unlimited repositioning

Liquid Optically Clear Adhesives

Henkel provides the total solution for Liquid Optically Clear Adhesives (LOCA), mainly from light cure adhesive technologies. Henkel offers leading LOCA technology from acrylate to silicone in its development pipeline and total application support with leading equipment process knowledge.

- Improving the viewing experience
- Increasing display ruggedness
- Extending display life
- Extending display product life
- Enabling thinner designs

Overmolding

LOCTITE® overmolding products are 1-component polyurethane primers used to enhance adhesion between multiple substrates during the co-molding or insert molding process

- The method replaces traditional assembly process to achieve a more compact, light, seamless and elegant design
- LOCTITE® overmolding products can help to increase the adhesion strength of the injected material to the parts surface

TYPICAL APPLICATIONS

- LOCA Bonding
- Cover Lens bonding
- Touch Panel Sensor bonding
- Display module bonding
- Without LOCA
- With LOCA

FOR MORE INFORMATION, PLEASE REFER TO HENKEL SOLUTIONS FOR TOUCH PANEL & DISPLAYS.

STICKY BONDING
**LOCTITE® 50 ML DUAL CARTRIDGE DISPENSE SYSTEM**

The interchangeable cartridge pushers with common mounting tooling can accommodate 1:1, 2:1, 4:1, or 10:1 dual cartridges for both A-System and B-System 50 ml cartridges.

- Independent cartridge pressure and actuation functions to control adhesive flow rate
- Fluid components designed for MMA and Epoxy adhesives, but can be used with any chemistry
- Accepts patent pending precision air-drip dispense valve 144439 (sold separately)
- Easy cartridge changeover
- Lightweight design; able to be used on any LOCTITE® Precision Adhesive Dispensing Robot system
- Dispenses adhesives up to 200,000 cP viscosity

**LOCTITE® 30 ML PUR HOTMELT DISPENSE SYSTEM**

- Controller has two individual temperature output channels designed to control the LOCTITE® PUR 30 ml Dispense Head and PUR Pre-Heater for 30 ml syringes
- Integrated dispense time control, pressure control, and temperature control features are all in one easy-to-use system
- Easily integrated with a LOCTITE® Robot System
- Digital display temperature controller and timer
- Easy syringe changeover design
- PTFE safety enclosure
- Pre-heater reduces time required for syringe changeover

**LOCTITE® 400 ML / 490 ML DUAL CARTRIDGE DISPENSE SYSTEM**

- System process monitoring
- Volumetrically controlled adhesive dispensing
- No-drip stop and start dispense control
- Variable ratio capability
- High-output production capability
- Minimal downtime for package changeover and fluid system maintenance
- Slim design maximizes floor space utilization

---

**NEW**

**LOCTITE® EQ VA35 HOTMELT JET SYSTEM**

The VA35 Jet Valve is designed for fluid dispensing in the electronics, industrial, semiconductor, and life sciences markets. It is unlike any other jet on the market because only our jet dispensing product employs a unique diaphragm technology. Hard-to-dispense fluids can be dispensed reliably in volumes as small as 10 nanoliters. The VA35 Jet Valve is extremely fast and can dispense on the fly. It can apply multiple drops-per-location at a speed up to 300 drops/second. The drops can be dispensed into areas with clearance as small as 300 μm without contamination of the surface. The VA35 Jet Valve is suited for dispensing a wide range of fluids for a variety of applications. To ensure best product compatibility, the fluid path is made from ceramics and stainless steel and the diaphragm made of a highly fluorinated elastomeric material.

- Up to 300 drops/second
- Drops as small as 0.01 µl
- No fluid seals to clean or replace
- Field repairable, not necessary to return to factory for rebuild or repair
- Integral heater with minimal fluid heated
- Tungsten carbide internal components for long life

**NEW**

**COMPACT ROTOR DISPENSING SYSTEM**

- Volumetric device, flow rate proportional to speed, electronically controlled
- Dispenses anaerobics, acrylics and light cure acrylics
- Applications include drop or bead dispensing or potting
- Integrated Luer lock-adapter with O-ring (patented) ensures sealing in reverse flow
- Dispenses anaerobics, acrylics and light cure acrylics
- Volumetric device, flow rate proportional to speed, electronically controlled
- Modular nozzle
- Modular heater with separate heater controls for nozzle and 30 ml product reservoir
- Robust internal components for long life

---

**Equipment Selector Guide**

**Robot Dispense Systems**

**LOCTITE® 50 ML DUAL CARTRIDGE DISPENSE SYSTEM**

**LOCTITE® 30 ML PUR HOTMELT DISPENSE SYSTEM**

**LOCTITE® 400 ML / 490 ML DUAL CARTRIDGE DISPENSE SYSTEM**

---

**NEW**

**LOCTITE® EQ VA35 HOTMELT JET SYSTEM**

The VA35 Jet Valve is designed for the contactless dispensing of highly viscous hotmelt and other highly viscous, high temperature materials for a variety of applications in the electronics, industrial, semiconductor, and handheld devices markets. To ensure best product compatibility, the fluid path is made from stainless steel. Due to extremely short triggering intervals (≤ 0.1 ms) it is possible to accurately apply smallest amounts of such materials over distances from 2 to 200 μl. The volume of a single shot can be set from 10 to 200 μl. Thus, depending on the material, dot sizes from a minimum of 300 μm to a maximum of 2000 μm can be reached without contamination of the surface. It can apply multiple drops-per-location at a speed up to 150 drops/second. The separation of the fluidic part from the actuator part as well as a longer tappet ensures protection of the valve system and a considerably safe operation.

- Up to 150 drops/second
- Drops as small as 0.01 µl
- Modular nozzle
- Modular heater with separate heater controls for nozzle and 30 ml product reservoir
- Robust internal components for long life

---

**Application Data**

**LOCTITE® EQ VA35 HOTMELT JET SYSTEM**

- Compatible with LOCTITE® light Cure anaerobic (acrylates), acrylates, Perman, Pronix, and other chemistries
- Variable drop size and drop frequency
- Easy syringe changeover design
- Precision dispense valve
- System integration: designed for robotic applications

---

**Equipment Selector Guide**

**Dispensing**

**LOCTITE® EQ VA35 HOTMELT JET SYSTEM**

**COMPACT ROTOR DISPENSING SYSTEM**

- Volumetric device, flow rate proportional to speed, electronically controlled
- Dispenses anaerobics, acrylics and light cure acrylics
- Applications include drop or bead dispensing or potting
- Integrated Luer lock-adapter with O-ring (patented) ensures sealing in reverse flow
- Because of the reversible direction of flow (back-and-forward), and exact stop of the product flow can be achieved

---

**Application Data**

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- Because of the reversible direction of flow (back-and-forward), and exact stop of the product flow can be achieved
EQUIPMENT SELECTOR GUIDE

Dispensing

Dispense Systems — Adhesive Bottles

<table>
<thead>
<tr>
<th>LOCTITE® Product</th>
<th>Item Number</th>
<th>Dispense Patterns</th>
<th>Used to Dispense</th>
<th>Viscosity Range</th>
<th>Valve 98013</th>
<th>Valve 98009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rack Dispenser</td>
<td>98013</td>
<td>Light, Medium</td>
<td>Adhesive</td>
<td>0 to 100,000 cP</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ceiling Dispenser</td>
<td>98009</td>
<td>Light, Medium</td>
<td>Adhesive</td>
<td>0 to 100,000 cP</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Dispense Systems — Pneumatic Syringe Dispensing

<table>
<thead>
<tr>
<th>LOCTITE® Product</th>
<th>Item Number</th>
<th>Dispense Patterns</th>
<th>Used to Dispense</th>
<th>Viscosity Range</th>
<th>Valve 98013</th>
<th>Valve 98009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rack Dispenser</td>
<td>98013</td>
<td>Light, Medium</td>
<td>Adhesive</td>
<td>0 to 100,000 cP</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ceiling Dispenser</td>
<td>98009</td>
<td>Light, Medium</td>
<td>Adhesive</td>
<td>0 to 100,000 cP</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Dispensing Valves

<table>
<thead>
<tr>
<th>LOCTITE® Product</th>
<th>Item Number</th>
<th>Dispense Patterns</th>
<th>Used to Dispense</th>
<th>Stroke Adjustment</th>
<th>Back-Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rack Dispenser</td>
<td>98013</td>
<td>Light, Medium</td>
<td>Adhesive</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Ceiling Dispenser</td>
<td>98009</td>
<td>Light, Medium</td>
<td>Adhesive</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

LOCTITE® C110 Curing System

<table>
<thead>
<tr>
<th>Curing Spectrum</th>
<th>Spottable LED Read</th>
<th>Curing Distance</th>
<th>Intensity*</th>
<th>Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV-A</td>
<td>20 - 22 mm</td>
<td>20, 30, 50 psi</td>
<td>0 to 1000 mW/cm²</td>
<td>21 ft-lb</td>
</tr>
<tr>
<td>UV-V</td>
<td>-</td>
<td>-</td>
<td>0 to 1000 mW/cm²</td>
<td>21 ft-lb</td>
</tr>
</tbody>
</table>

LOCTITE® LED Flood System

<table>
<thead>
<tr>
<th>Curing Spectrum</th>
<th>Curing Area</th>
<th>Curing Distance</th>
<th>Intensity*</th>
<th>Integration</th>
<th>Controller</th>
<th>Advanced Internal Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV-A</td>
<td>50 - 150 mm</td>
<td>50 - 150 mm</td>
<td>0 to 1500 mW/cm²</td>
<td>Yes</td>
<td>NASA</td>
<td>Provides digital and visual fault isolation to each individual LED.</td>
</tr>
</tbody>
</table>

LOCTITE® LED Line Array System

<table>
<thead>
<tr>
<th>Curing Spectrum</th>
<th>Curing Area</th>
<th>Curing Distance</th>
<th>Intensity*</th>
<th>Integration</th>
<th>Controller</th>
<th>Advanced Internal Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV-A</td>
<td>50 - 150 mm</td>
<td>50 - 150 mm</td>
<td>0 to 1500 mW/cm²</td>
<td>Yes</td>
<td>NASA</td>
<td>Provides digital and visual fault isolation to each individual LED.</td>
</tr>
</tbody>
</table>

LOCTITE® CureJet LED System

<table>
<thead>
<tr>
<th>Curing Spectrum</th>
<th>Curing Area</th>
<th>Curing Distance</th>
<th>Intensity*</th>
<th>Integration</th>
<th>Controller</th>
<th>Advanced Internal Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV-A</td>
<td>50 - 150 mm</td>
<td>50 - 150 mm</td>
<td>0 to 1500 mW/cm²</td>
<td>Yes</td>
<td>NASA</td>
<td>Provides digital and visual fault isolation to each individual LED.</td>
</tr>
</tbody>
</table>

Asia Pacific
www.loctiteequipment.com

North America
www.equipment.loctite.com
<table>
<thead>
<tr>
<th>Product Category</th>
<th>Application</th>
<th>Color</th>
<th>Mix Ratio (by Volume)</th>
<th>Viscosity (cP)</th>
<th>Open Time</th>
<th>Flash Off Time</th>
<th>Shear Strength (psi)</th>
<th>Fixture Time</th>
<th>Shear Strength (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2-PART ACRYLIC ADHESIVES FOR MOBILE PHONE AND TABLET BONDING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5192 Silicone UV / Moisture PR</td>
<td>5192DM Silicone UV</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>2-PART ACRYLIC ADHESIVES FOR LAPTOP BONDING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3195 Acrylic UV</td>
<td>3191 Acrylic UV</td>
<td>3196 Acrylic UV</td>
<td>3196PR Acrylic UV</td>
<td>3199 Acrylic UV</td>
<td>3198DM Acrylic UV</td>
<td>3199DM Acrylic UV</td>
<td>5192DM Silicone UV</td>
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<td></td>
</tr>
<tr>
<td><strong>2-STEP ACRYLIC ADHESIVES</strong></td>
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<tr>
<td>3019 Acrylic UV</td>
<td>3020 Acrylic UV</td>
<td>3021 Acrylic UV</td>
<td>3022 Acrylic UV</td>
<td>3023 Acrylic UV</td>
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<td>3026 Acrylic UV</td>
<td>3027 Acrylic UV</td>
<td>3028 Acrylic UV</td>
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<tr>
<td><strong>PUR HOTMEL ADHESIVES</strong></td>
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<tr>
<td>3030 Polyamide Hotmelt</td>
<td>3031 Polyamide Hotmelt</td>
<td>3032 Polyamide Hotmelt</td>
<td>3033 Polyamide Hotmelt</td>
<td>3034 Polyamide Hotmelt</td>
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<td>3037 Polyamide Hotmelt</td>
<td>3038 Polyamide Hotmelt</td>
<td>3039 Polyamide Hotmelt</td>
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<tr>
<td><strong>COATINGS</strong></td>
<td></td>
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<td>3040 Polyamide Hotmelt</td>
<td>3041 Polyamide Hotmelt</td>
<td>3042 Polyamide Hotmelt</td>
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<td>3047 Polyamide Hotmelt</td>
<td>3048 Polyamide Hotmelt</td>
<td>3049 Polyamide Hotmelt</td>
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<tr>
<td><strong>LIQUID OPTICALLY CLEAR ADHESIVES</strong></td>
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<td></td>
<td></td>
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<tr>
<td>3050 Polyamide Hotmelt</td>
<td>3051 Polyamide Hotmelt</td>
<td>3052 Polyamide Hotmelt</td>
<td>3053 Polyamide Hotmelt</td>
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<td>3057 Polyamide Hotmelt</td>
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<tr>
<td><strong>TECHNOMELT® MOLDING</strong></td>
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<tr>
<td>3060 Polyamide Hotmelt</td>
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<tr>
<td><strong>OVERMOLDING</strong></td>
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<td>3070 Polyamide Hotmelt</td>
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</table>
Wearable Technology Devices

**APPLICATIONS**

<table>
<thead>
<tr>
<th>Device Category</th>
<th>Device Type</th>
<th>Applications</th>
<th>Henkel Solution</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitness and Wellness</td>
<td>Activity Tracker</td>
<td>Full Range Activity Tracking</td>
<td>LOCTITE® UV Pre-Activated Acrylic Adhesive</td>
<td>Broad band gap function and UV-activated bonding for flexible and stretchable substrates.</td>
</tr>
</tbody>
</table>
| Fitness and Wellness | Activity Tracker | Full Range Activity Tracking | LOCTITE® UV Pre-Activated Acrylic Adhesive | High cohesive strength to wearables, such as polyurethane or polyimide.
| Fitness and Wellness | Activity Tracker | Full Range Activity Tracking | LOCTITE® Light Cure Epoxy Adhesive | UV-curable epoxy adhesive for wearables, providing strong adhesion to a variety of substrates. |
| Activity Tracker | Mechanical Component | TECHNOLOGY™ Bonding | Environmental protection for mechanical components, such as joints and hinges. |
| Activity Tracker | Full Range Activity Tracking | LOCTITE® 50 ml Dual Cartridge Dispense | Fast fixture within 3 minutes. |
| Activity Tracker | Full Range Activity Tracking | LOCTITE® 2-Part Acrylic Adhesive | High cure rate and peel strength. |
| Activity Tracker | Full Range Activity Tracking | LOCTITE® 4530-HC Robot Dispensing | Dual cure system, fast fixture (around 0.7 mm) and high peel strength. |
| Activity Tracker | Full Range Activity Tracking | LOCTITE® 2-Part Acrylic Adhesive | One component system, easy to use. |
| Activity Tracker | Full Range Activity Tracking | LOCTITE® Light Cure Cyanoacrylate | One component system, easy to use. |

**Smartwatch Category**

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Applications</th>
<th>Henkel Solution</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Surface Energy</td>
<td>LOCTITE® UV Pre-Activated Acrylic Adhesive</td>
<td>Low surface energy polymer for easy bonding on low-energy surfaces.</td>
<td></td>
</tr>
<tr>
<td>High Strength</td>
<td>LOCTITE® Light Cure Epoxy Adhesive</td>
<td>High strength bonding, suitable for high-strength applications.</td>
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</tbody>
</table>

**Technological Advancements**

- **Technical Support**: Provides instant fixture of parts without the need for high temperatures.
- **On-Site Support**: Provides instant fixture of parts without the need for high temperatures.
- **Customer Trainings**: Provides instant fixture of parts without the need for high temperatures.
- **Product Development**: Provides instant fixture of parts without the need for high temperatures.
- **Product Safety / Regulatory Affairs**: Provides instant fixture of parts without the need for high temperatures.
- **Toxicological Assessments**: Provides instant fixture of parts without the need for high temperatures.

**Henkel’s Corporate Technology Group**

Henkel’s Corporate Technology group can evaluate products and materials, considering the intended application of our customers and the use of the final product. Our certified toxicologists have access to a comprehensive toxicological archive containing data collected on behalf of our customers. This ensures that our products are safe for use and can be used in a variety of applications, including dermatological product support. We can also conduct in vivo tests to assess the safety of our products.

**Henkel’s Center for Dermatological Safety**

Henkel’s center for dermatological product support can evaluate products and materials, considering the intended application of our customers and the use of the final product. Our certified toxicologists have access to a comprehensive toxicological archive containing data collected on behalf of our customers. This ensures that our products are safe for use and can be used in a variety of applications, including dermatological product support. We can also conduct in vivo tests to assess the safety of our products.
The World of Henkel

Engineering Service
Henkel offers complete engineering services for projects demanding expertise and support beyond the limits of standard technical services. Our engineers provide the following value-added services.

- On-site engineering assistance and consultation
- Joint product development programs
- Contract lab services and testing
- Prototype testing
- Custom formulations

Training Service — Henkel Technology Day
Two- to four-hour seminar providing solutions to handheld devices and displays manufacturers on design and assembly challenges. It is designed specifically for material, manufacturing and design engineers.

- Reviews in detail how using adhesives and sealants can improve quality and increase production
- Touches on the wide array of LOCTITE® product solutions including adhesives and sealants, dispensing and curing equipment
- Includes hands-on demonstrations and real-world case histories

Unsurpassed Industry Know-How
Empowering customers to improve
- Development, engineering and field support
- Depth of industry know-how
- Technology expertise

Depth of Knowledge
Solutions to solve design challenges
- Understanding of applications and processes
- Close collaboration
- Anticipated needs

Limitless Opportunities
Enabling the experience
- Technology and brand leader
- Enabling new design
- High value specialty solutions
- Most comprehensive portfolio

Learn how today's advances in adhesive technology will help you cut product costs and improve product quality.

We invite you to Experience • Learn • Discover the world of Henkel's LOCTITE® products.

Innovation is at your fingertips.
Henkel products are designed to meet the specifications and testing standards of a variety of agencies. Because such standards change or may be modified, no warranty is given regarding such compliance. The information provided may be used as a quick reference tool to aid in design or application. For up-to-the-minute information on agency approvals, or to inquire about additional agency approvals, please contact the Henkel Product Management team or your local Henkel Technical Support team.

Contact us at: www.loctite.com/hhdd