Structural Adhesives
Selector Guide

THE IMMUTABLE LAWS OF
STRUCTURAL ENGAGEMENT

We're Writing the Law

KRAYDEN, INC.
AUTHORIZED DISTRIBUTOR
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Henkel

LOCTITE®

THE IMMUTABLE LAWS OF
STRUCTURAL ENGAGEMENT

WARNING: MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE EYE, THROAT, AND RESPIRATORY TRACT IRRITATION. READ TACK PANEL.
Loctite® Structural Adhesives Selector Guide

We’re writing the law on Structural Adhesives

Henkel would like to introduce to you The Immutable Laws of Structural Engagement™. The laws were written to help you understand why structural adhesives are stronger, tougher and more reliable than traditional fasteners. Loctite® Structural Adhesives can allow manufacturers to eliminate or significantly reduce the fasteners or welds, while improving the strength and durability of your assembly. Put The Immutable Laws of Structural Engagement™ to work for you.

1st Law of Structural Engagement

Mechanical fasteners can’t spread the load.

When forces are applied to a mechanically-fastened assembly, the stresses are concentrated at a single point rather than distributed evenly over a broader area. This may lead to premature failure of the joint. When forces are applied to an adhesive bonded assembly, the stresses are distributed across the entire area of the bonded joint. This results in an overall stronger assembly, which provides the opportunity to reduce substrate thickness and thus the cost and weight of the assembly.

Loctite® Structural Adhesives are nearly 2x stronger than spot welds and bolts and easier on the bottom line
Loctite® Structural Adhesives are available in a range of formulations, including one-part epoxy, two-part epoxy, acrylic and polyurethane, and two-step acrylic adhesives. They have been specially formulated to meet a variety of industrial bonding requirements and are available in four application categories:

**Magnet Bonding** – for the fastest, most durable bond strengths on ferrite, alnico and neodymium iron boron permanent magnets.

**Metal Bonding** – optimized to meet the demands of today’s metal fabricating requirements.

**Multiple Surface Bonding** – for excellent bond strengths on a variety of surfaces.

**Plastic and Composite Bonding** – for the toughest, most durable bond strength on composites and plastics, including polyolefins.

Loctite® Structural Adhesives are available in easy-to-use packages for hand-held, manual and semi-automated applications, including caulking cartridges, syringes, soft-squeeze bottles and dual cartridges for two-part formulations. Loctite® Structural Adhesives are also offered in larger packages, such as 5- or 55-gallon pails, for high volume and automated assembly operations.

All Loctite® Structural Adhesives are easily dispensed through Loctite® dispensing systems. Systems are available in a full range of options, including manual or pneumatic versions, portable or stationary systems, small or large package systems, and pressure-time or volumetric dispense systems.

Most importantly, you can rely on the industry’s most trusted brand – Loctite®. A name synonymous with the highest quality, superior technical support and the best overall value.

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  For the fastest, most durable bond strengths on magnets, including ferrite, alnico and neodymium iron boron permanent magnets.

- **Metal Bonding** ............. 8  
  Optimized to meet the demands of today’s metal fabricating requirements.

- **Multiple Surface Bonding** . 14  
  For excellent bond strengths on a wide range of surfaces.

- **Plastic / Composite / Polyolefin Bonding** ........ 24  
  For the toughest, most durable bond strength on plastics, composites and difficult-to-bond polyolefins.

- **Dispensing Equipment** ...... 30  
  A full line of adhesive dispensing equipment for manual, semi-automated or fully-automated assembly processes.

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**TOP CHOICE**

The Top Choice designation lets you know that this Loctite® product has demonstrated proven performance and/or represents the latest technology to handle a variety of customer applications, and is most often included in initial product testing and evaluation.
Loctite® Structural Adhesives for magnet bonding combine the benefits of fast process speeds with tough, durable, environmentally resistant bond strengths, making them ideal for bonding ferrite, alnico and neodymium iron boron permanent magnets used in electric motors, small engines, speakers, transformers and other devices. Magnets assembled with adhesives provide a wealth of benefits, including:

- Ability to use lower cost components
- Decreased inventory cost
- Easier to automate
- Will not chip magnets
- Prevent vibrational noise
- Prevent corrosion
- Acid-free
- Higher impact strength
- Higher temperature resistance
- Lower odor
Solution

Chemistry

<table>
<thead>
<tr>
<th></th>
<th>Two-Step Acrylic</th>
<th>Two-Step Acrylic</th>
<th>Two-Step Acrylic</th>
<th>External Mix Acrylic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loctite® 312™ Speedbonder™ Structural Adhesive</td>
<td>Clear to Amber</td>
<td>Amber</td>
<td>Yellow</td>
<td>Green</td>
</tr>
<tr>
<td>Loctite® 392™ Structural Adhesive</td>
<td>1,000</td>
<td>6,500</td>
<td>80,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Loctite® 334™ Structural Adhesive</td>
<td>.003</td>
<td>.025</td>
<td>.02</td>
<td>.1</td>
</tr>
</tbody>
</table>

Color

- Clear to Amber
- Amber
- Yellow
- Green

Viscosity (cP)

- 1,000
- 6,500
- 80,000
- 30,000

Gap Fill (in.)

- .003
- .025
- .02
- .1

Fixure Time (seconds)

- 30
- 60
- 90
- 30-60

Cure Time (hours)

- 24
- 24
- 24
- 1

Shear Strength¹ (psi)

- >2,490
- 2,500
- 2,800
- 2,500

Impact Strength¹ (kJ/m²)

- —
- —
- 5.2
- 9

Temperature Resistance

- 250°F (121°C)
- 250°F (121°C)
- 350°F (177°C)
- 311°F (155°C)

Suggested Activator

- Loctite® 736™ Primer NF
- Loctite® 7387™ Activator
- Loctite® 7387™ Activator
- N/A

Product Description

Loctite® 312™ Speedbonder™ Structural Adhesive

Ultra-Fast Fixture

- Single component, medium viscosity, activator-cure acrylic. Fixtures in 30 seconds with 75% of full strength developed in 10 minutes. Ideal for bonding a variety of close-fitting parts, including metal, glass and ceramic.

Loctite® 392™ Structural Adhesive

Fast Fixture / Toughened

- Single component, dual-cure acrylic. Provides fast fixture speed and tough, reliable bonds.

Loctite® 334™ Structural Adhesive

High Temperature

- Single component, dual-cure acrylic. Forms tough, flexible bonds on gaps up to 0.02". Resists up to 350°F.

Loctite® A-671™ Structural Adhesive

External Mix (adhesive/activator)

- Two-component external mix acrylic requires no static mixing or activators. Excellent humidity resistance and gap filling capability. Fast fixtureing.

* Made to Order Item

¹ Steel
### Temperature Resistance

<table>
<thead>
<tr>
<th>Condition</th>
<th>250ºF (121ºC)</th>
<th>350ºF (177ºC)</th>
<th>311°F (155°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixture Time (seconds)</td>
<td>.003</td>
<td>.025</td>
<td>.02</td>
</tr>
<tr>
<td>Gap Fill (in.)</td>
<td>.1</td>
<td>.04</td>
<td>.04</td>
</tr>
</tbody>
</table>

### Impact Strength1 (kJ/m²)
- A-6750™
- 325™
- 331™
- 3060™
- E-220IC™
- E-214HP™

### Shear Strength1 (psi)
- A-6750™
- 325™
- 331™
- 3060™
- E-220IC™
- E-214HP™

### Color
- Clear to Amber
- Amber
- Yellow
- Green

### Chemistry
- Two-Step
- External Mix

### Fixtures in 30 seconds with 75% viscosity, activator-cure acrylic.

### Purpose
- Loctite® 312™ Speedbonder™
- Loctite® 392™
- Loctite® 334™
- Loctite® A-671™
- Loctite® E-220IC™
- Loctite® E-214HP™

### P/N Package Size
- Loctite® 312™ Speedbonder™
  - 1062124* 5 gallon pail
  - 1057673 1 liter bottle
- Loctite® 392™
  - 1078499* 5 gallon pail
  - 1087986 1 liter, resin
- Loctite® 334™
  - 1256502 2 liter bottle, adhesive
  - 1255708 2 liter bottle, activator
- Loctite® A-671™
  - 1156488 4,000 ml kit
  - 1156489 40 ml kit
- Loctite® E-220IC™
  - 1087985 10 liter, resin
- Loctite® E-214HP™
  - 1087987 1 liter, activator

### Humidity Resistant
- Loctite® 325™
  - 7075™ Activator
- Loctite® 331™
  - 7387™ Activator
- Loctite® 3060™
  - 736™ Primer NF™
  - 7387™ Activator
- Loctite® 392™
  - 736™ Primer NF™
  - 7387™ Activator
- Loctite® 334™
  - 736™ Primer NF™
  - 7387™ Activator

### Chemical Resistant
- Loctite® 325™
  - Speedbonder™
- Loctite® 331™
  - Structural Adhesive
- Loctite® 3060™
  - Structural Adhesive

### External Mix Acrylic
- Loctite® A-6750™
  - 30,000
  - 12 minutes
  - 3
  - 9
  - 311°F (155°C)
- Loctite® 325™
  - Green
  - 20,000
  - 300
  - 2,200
  - 3,100
  - 300°F (149°C)
- Loctite® 331™
  - Clear Brown
  - 20,000
  - 20
  - 24
  - 24
  - 200°F (93°C)
- Loctite® 3060™
  - Cream
  - 15,000
  - 55
  - 24
  - 3,800
  - 300°F (149°C)
- Loctite® E-220IC™
  - Green
  - 12 minutes
  - 3
  - 9
  - 311°F (155°C)
- Loctite® E-214HP™
  - Grey
  - 30 minutes
  - 10
  - 300°F (149°C)

### Room Temperature Cure
- Loctite® 325™
  - Speedbonder™
  - 7075™ Activator
  - Loctite® 331™
  - Structural Adhesive
  - Loctite® 3060™
  - Structural Adhesive
  - Loctite® A-671™
  - Structural Adhesive
  - Loctite® 392™
  - 736™ Primer NF™
  - 7387™ Activator
  - Loctite® 334™
  - 736™ Primer NF™
  - 7387™ Activator

### Heat Cure
- Loctite® 325™
  - Speedbonder™
  - 7075™ Activator
  - Loctite® 331™
  - Structural Adhesive
  - Loctite® 3060™
  - Structural Adhesive
  - Loctite® A-671™
  - Structural Adhesive
  - Loctite® 392™
  - 736™ Primer NF™
  - 7387™ Activator
  - Loctite® 334™
  - 736™ Primer NF™
  - 7387™ Activator

### Oven Cure
- Loctite® 325™
  - Speedbonder™
  - 7075™ Activator
  - Loctite® 331™
  - Structural Adhesive
  - Loctite® 3060™
  - Structural Adhesive
  - Loctite® A-671™
  - Structural Adhesive
  - Loctite® 392™
  - 736™ Primer NF™
  - 7387™ Activator
  - Loctite® 334™
  - 736™ Primer NF™
  - 7387™ Activator

### New Products
- Loctite® A-6750™
- Loctite® 325™
- Loctite® 331™
- Loctite® 3060™
- Loctite® E-220IC™
- Loctite® E-214HP™
Metal Bonding

Loctite® Structural Adhesives for metal bonding have been specially formulated to provide tough, long-lasting bonds to metal surfaces, such as steel, galvanized steel, aluminum, sheet metal and stainless steel. These adhesives are capable of reducing or replacing the need for threaded fasteners, welds or rivets, resulting in a higher quality assembly. As a result, structural adhesives are ideal for use in agriculture and construction equipment, specialty vehicles, commercial furniture, appliances, signage, tub and spa, and structural building components.

Loctite® Structural Adhesives have been formulated to withstand higher temperatures, provide excellent chemical resistance, survive aggressive pre-treating and high performance paint processes, and provide long-term corrosion resistance. Loctite® Structural Adhesives are available in a variety of cure speeds for any type of job. Our two-part epoxies have strengths close to heat cure epoxies, eliminating the need for an oven-cure process, thereby reducing bottlenecks and lowering costs.

Overall, Loctite® Structural Adhesives for metal bonding offer:

- High strength coupled with high impact and peel resistance
- Compatibility with oily/unclean metal surfaces
- Resistance to high temperatures, aggressive chemicals
- Squeeze-out prevention in clamped assemblies
- A variety of open times to meet processing needs
- Fast fixture time for handling strength in minimal amount of time
- Even stress distribution over bond line
- Cost benefits for replacement and/or reduction of welds, rivets and mechanical fasteners

Vibration is everywhere. Vibrational loosening is not.

Metal fabricators like the benefits of pneumatic pins because of their fast processing speeds. Unfortunately, the pins can wallow out of their parts during transportation due to vibrational loosening. However, when used in combination with structural adhesives, not only are the assemblies able to withstand stronger forces, but the pins are bonded in place by the adhesive, thus preventing them from wallowing out.

THE IMMUTABLE LAWS OF STRUCTURAL ENGAGEMENT

We're Writing the Law

www.henkelna.com/loctitestucturals
**Loctite® 3050™ and Loctite® H8700™ Speedbonder™** can be welded-through in their liquid states and still maintain their high performance properties.

---

### Solution

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Two-Part Acrylic</th>
<th>Two-Part Acrylic</th>
<th>Two-Part Acrylic</th>
<th>Two-Part Acrylic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Grey</td>
<td>Grey</td>
<td>Teal</td>
<td>Light Yellow</td>
</tr>
<tr>
<td>Viscosity (cP)</td>
<td>45,000</td>
<td>70,000</td>
<td>70,000</td>
<td>70,000</td>
</tr>
<tr>
<td>Mix Ratio</td>
<td>10:1</td>
<td>10:1</td>
<td>10:1</td>
<td>1:1</td>
</tr>
<tr>
<td>Work Life (minutes)</td>
<td>6</td>
<td>5</td>
<td>65</td>
<td>60</td>
</tr>
<tr>
<td>Fixture Time (minutes)</td>
<td>15</td>
<td>15</td>
<td>105</td>
<td>120</td>
</tr>
<tr>
<td>Cure Time (hours)</td>
<td>24</td>
<td>48</td>
<td>48</td>
<td>24</td>
</tr>
<tr>
<td>Shear Strength¹ (psi)</td>
<td>3,100</td>
<td>1,800</td>
<td>4,200</td>
<td>3,800</td>
</tr>
<tr>
<td>Impact Strength¹ (kJ/m²)</td>
<td>11.5</td>
<td>&gt;14</td>
<td>8.5</td>
<td>7.7</td>
</tr>
<tr>
<td>Peel Strength¹ (pli)</td>
<td>10.7</td>
<td>16</td>
<td>25.3</td>
<td>15</td>
</tr>
<tr>
<td>Hot Strength² (psi)</td>
<td>950</td>
<td>540</td>
<td>1,100</td>
<td>900</td>
</tr>
</tbody>
</table>

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### Metal Bonding

**Your Application**

**A Clue From Prof. McGlue**

Loctite® 3050™ and Loctite® H8700™ Speedbonder™ can be welded-through in their liquid states and still maintain their high performance properties.

---

### Product Description

**Loctite® H4500™ Speedbonder™ Structural Adhesive**

- **Fast Fixture**: High strength structural adhesive for metals. Fixtures in 15 minutes. Now with mix color indication.

  - P/N: 996512
  - Package Size: 50 ml dual cartridge
  - 83041: 490 ml dual cartridge

**Loctite® H4701™ Speedbonder™ Structural Adhesive**

- **Corrosion Resistant**: Thixotropic, two-component, room temperature curing methacrylate adhesive designed for structural bonding of galvanized and galvanneal parts. Excellent environmental resistance. Its non-sag characteristics are well suited for filling gaps up to 0.375". Delivers excellent peel and impact strength with no surface preparation.

  - P/N: 1286594
  - Package Size: 50 ml dual cartridge
  - 913475: 490 ml dual cartridge

**Loctite® H4720™ Speedbonder™ Structural Adhesive**

- **Corrosion Resistant**: Maintains superior strength in corrosive environments. Excellent general-purpose metal bonder.

  - P/N: 1064166
  - Package Size: 50 ml dual cartridge
  - 1064321: 400 ml dual cartridge

**Loctite® H3151™ Speedbonder™ Structural Adhesive**

- **Extended Open Time**: Extended open time allows for adjustment of parts. Excellent bond strength on aluminum and steel. Impact and peel resistant.

  - P/N: 83015
  - Package Size: 50 ml dual cartridge
  - 83014: 400 ml dual cartridge

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* Made to Order Item
¹ 220°F (104°C) Shear on Steel
² Grit Blasted Mild Steel
³ Aluminum
⁴ Etched Aluminum
**General Performance**

- High Temperature / Chemical Resistant
- Corrosion Resistant
- Low Odor
- Paint Bake Compatible
- Low Sag
- Chemical Resistant
- Fast Room Temperature
- Fixture
- Extended Room Temperature
- Fixture
- Non-Sag
- High Performance
- High Strength
- High Temperature

### Chemistry

- Two-Part Acrylic
- Two-Part Epoxy
- One-Part Epoxy

### Color

- Grey
- Teal
- Light Yellow
- Tan
- Off-White
- Grey
- Blue

### Viscosity (cP)

- 45,000
- 70,000
- 60,000
- 47,000
- 225,000
- 40,000

### Mix Ratio

- 10:1
- 1:1
- 2:1
- N/A

### Work Life (minutes)

- 6
- 5
- 65
- 60
- 20
- 60
- N/A
- 25

### Fixture Time (minutes)

- 15
- 15
- 105
- 120
- 1504
- 1804
- N/A
- 401

### Cure Time (hours)

- 24
- 48
- 24
- 24
- 40 min. @ 218ºF (120ºC)
- 30 min. @ 218ºF (120ºC)
- 40 min. @ 218ºF (120ºC)
- 30 min. @ 218ºF (120ºC)

### Shear Strength1 (psi)

- 3,100
- 1,800
- 4,200
- 3,800
- 2,7903
- 4,3203
- 4,8203
- 3,000^3

### Impact Strength1 (kJ/m²)

- 11.5
- >14
- 8.5
- 7.7
- –
- –
- –
- 14

### Peel Strength4 (pli)

- 10.7
- 16
- 25.3
- 15
- –
- –
- –
- 7

### Hot Strength2 (psi)

- 950
- 540
- 1,100
- 900
- 1,100
- 4305
- 3,172^5
- 3,000^4

---

**Loctite® H4500™**

- **Speedbonder™**
- **Structural Adhesive**
- Fast Fixture
- High strength structural adhesive for metals.
- Fixtures in 15 minutes.
- Now with mix color indication.

**P/N  Package Size**

- 996512  50 ml dual cartridge
- 83041  490 ml dual cartridge

**Loctite® H4710™**

- **Speedbonder™**
- **Structural Adhesive**
- Corrosion Resistant
- Thixotropic, two-component, room temperature curing methacrylate adhesive designed for structural bonding of galvanized and galvaneal parts. Excellent environmental resistance. Its non-sag characteristics are well suited for filling gaps up to 0.375". Delivers excellent peel and impact strength with no surface preparation.

**P/N  Package Size**

- 1056941  50 ml dual cartridge
- 39317  490 ml dual cartridge

**Loctite® H4720™**

- **Speedbonder™**
- **Structural Adhesive**
- Corrosion Resistant
- Maintains superior strength in corrosive environments. Excellent general-purpose metal bonder.

**P/N  Package Size**

- 1296594  50 ml dual cartridge
- 913475  490 ml dual cartridge

**Loctite® H3151™**

- **Speedbonder™**
- **Structural Adhesive**
- Extended Open Time
- Extended open time allows for adjustment of parts. Excellent bond strength on aluminum and steel. Impact and peel resistant.

**P/N  Package Size**

- 83015  50 ml dual cartridge
- 83014  400 ml dual cartridge

**Loctite® E-20NS™**

- **Hysol®**
- **Epoxy Adhesive**
- Non-Sag
- A light tan, non-sag, high peel, high shear epoxy with a 20-minute work life. Excellent on stainless steel, copper and bronze.

**P/N  Package Size**

- 29334  50 ml dual cartridge
- 29335  200 ml dual cartridge
- 29336  400 ml dual cartridge

**Loctite® E-60HP™**

- **Hysol®**
- **Epoxy Adhesive**
- Toughened
- A high strength epoxy with a 60-minute work life. Off-white, high peel and shear strength.

**P/N  Package Size**

- 29319  50 ml dual cartridge
- 29320  200 ml dual cartridge
- 29321  400 ml dual cartridge
- 29322*  5 gallon pail, resin
- 29323*  5 gallon pail, hardener

**Loctite® E-214HP™**

- **Hysol®**
- **Epoxy Adhesive**
- High Strength
- A one-component, heat cure epoxy. Grey, temperature resistant, non-sag.

**P/N  Package Size**

- 29339  30 ml cartridge
- 29340  300 ml cartridge

**Loctite® 9432NA™**

- **Hysol®**
- **Epoxy Adhesive**
- High Temperature
- A grey, one-component paste, heat cure epoxy. Excellent high temperature performance, excellent chemical resistance, surface insensitive.

**P/N  Package Size**

- 83217*  2 lb. can
- 83216  55 lb. pail

**Loctite® H8700™**

- **Speedbonder™**
- **Structural Adhesive**
- Weld-Through Capable
- A weld-through capable, toughened, two-component acrylic adhesive designed for weld/rivet reduction. Exhibits high resistance to paint bake temperatures.

**P/N  Package Size**

- 1064166  50 ml dual cartridge
- 1064321  400 ml dual cartridge
## Solution

### Chemistry
- **Two-Part Acrylic**
  - Color: White
  - Viscosity (cP): 105,000
  - Mix Ratio: 2:1
  - Work Life (minutes): 5
  - Fixture Time (minutes): 20
  - Cure Time (hours): 48
  - Shear Strength (psi): 1,800
  - Impact Strength (kJ/m²): >14
  - Peel Strength (pli): 10
  - Hot Strength (psi): 500

- **Two-Part Acrylic**
  - Color: Blue
  - Viscosity (cP): 86,000
  - Mix Ratio: 2:1
  - Work Life (minutes): 25
  - Fixture Time (minutes): 55
  - Cure Time (hours): 48
  - Shear Strength (psi): 3,355
  - Impact Strength (kJ/m²): 38
  - Peel Strength (pli): 22.6
  - Hot Strength (psi): 460

- **Two-Part Epoxy**
  - Color: Grey
  - Viscosity (cP): 37,000
  - Mix Ratio: 4:1
  - Work Life (minutes): 50
  - Fixture Time (minutes): 75
  - Cure Time (hours): 24
  - Shear Strength (psi): 1,900
  - Impact Strength (kJ/m²): –
  - Peel Strength (pli): –
  - Hot Strength (psi): 1,273 (500 hours)

- **Two-Part Acrylic**
  - Color: Grey
  - Viscosity (cP): 60,000
  - Mix Ratio: 10:1
  - Work Life (minutes): 20
  - Fixture Time (minutes): 75
  - Cure Time (hours): 24
  - Shear Strength (psi): 2,899
  - Impact Strength (kJ/m²): 26.3
  - Peel Strength (pli): 46.4
  - Hot Strength (psi): 960

### Product Description

**Loctite® H8610™ Speedbonder™ Structural Adhesive**
- Galvanized Steel Bonder
  - A fast curing, two-component acrylic designed for bonding galvanized steel, galvalume and galvalum. Excellent shear strength on steel and aluminum. Especially designed for long-term heat and humidity resistance.

**Loctite® H8600™ Speedbonder™ Structural Adhesive**
- Galvanized Steel Bonder
  - Excellent shear strength on steel and aluminum. Especially designed for severe environments.

**Loctite® E-50GW™ Epoxy Adhesive**
- Galvanized Steel to Wood Bonder
  - A grey, two-component epoxy designed to bond galvanized steel to wooden surfaces. Extended, 50-minute work life makes for easy adjustment of larger parts.

**Loctite® H8100™ Speedbonder™ Ultra-Fast Fixture**
- Excellent peel strength on steel and aluminum. Contains 30 mil spacer beads to prevent excessive squeeze-out of adhesive due to over-clamping. Provides fast fixturing.
<table>
<thead>
<tr>
<th>Property</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
<th>Value 4</th>
<th>Value 5</th>
<th>Value 6</th>
<th>Value 7</th>
<th>Value 8</th>
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<tbody>
<tr>
<td>Hot Strength</td>
<td>201 psi</td>
<td>55 psi</td>
<td>50 psi</td>
<td>20 psi</td>
<td>10 psi</td>
<td>5 psi</td>
<td>3 psi</td>
<td>1 psi</td>
</tr>
<tr>
<td>Impact Strength</td>
<td>500 kJ/m²</td>
<td>460 kJ/m²</td>
<td>1,273 kJ/m²</td>
<td>460 kJ/m²</td>
<td>386 kJ/m²</td>
<td>26.3 kJ/m²</td>
<td>10 kJ/m²</td>
<td>2.8 kJ/m²</td>
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<tr>
<td>Shear Strength</td>
<td>1,800 psi</td>
<td>3,355 psi</td>
<td>1,900 psi</td>
<td>960 psi</td>
<td>350 psi</td>
<td>122 psi</td>
<td>105 psi</td>
<td>26 psi</td>
</tr>
<tr>
<td>Cure Time</td>
<td>2 hours</td>
<td>5 hours</td>
<td>6 hours</td>
<td>3 hours</td>
<td>1 hour</td>
<td>30 minutes</td>
<td>60 minutes</td>
<td>1 hour</td>
</tr>
<tr>
<td>Fixture Time</td>
<td>5 minutes</td>
<td>20 minutes</td>
<td>10 minutes</td>
<td>5 minutes</td>
<td>3 minutes</td>
<td>5 minutes</td>
<td>3 minutes</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Work Life</td>
<td>10 minutes</td>
<td>22.6 minutes</td>
<td>11 minutes</td>
<td>14 minutes</td>
<td>20 minutes</td>
<td>180 minutes</td>
<td>21 minutes</td>
<td>180 minutes</td>
</tr>
<tr>
<td>Mix Ratio</td>
<td>2:1</td>
<td>2:1</td>
<td>4:1</td>
<td>10:1</td>
<td>1:2</td>
<td>1:2</td>
<td>1:2</td>
<td>1:2</td>
</tr>
<tr>
<td>Color</td>
<td>Grey</td>
<td>Green</td>
<td>Grey</td>
<td>Green</td>
<td>Off-White</td>
<td>Light Grey</td>
<td>Light Grey</td>
<td>Light Grey</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Two-Part Acrylic</td>
<td>Two-Part Acrylic</td>
<td>Two-Part Acrylic</td>
<td>Two-Part Acrylic</td>
<td>Two-Part Urethane</td>
<td>One-Part Epoxy</td>
<td>One-Part Epoxy</td>
<td>One-Part Epoxy</td>
</tr>
<tr>
<td>P/N</td>
<td>996513</td>
<td>996514</td>
<td>996515</td>
<td>996516</td>
<td>1056942</td>
<td>1056943</td>
<td>996453</td>
<td>996454</td>
</tr>
<tr>
<td>Package Size</td>
<td>50 ml dual cartridge</td>
<td>50 ml dual cartridge</td>
<td>450 ml dual cartridge</td>
<td>50 ml dual cartridge</td>
<td>50 ml dual cartridge</td>
<td>50 ml dual cartridge</td>
<td>50 ml dual cartridge</td>
<td>50 ml dual cartridge</td>
</tr>
</tbody>
</table>

**Loctite® H8510™ Speedbonder™ Structural Adhesive Ultra-Tough**

- **Offers superior peel and impact strength on steel and aluminum.**
- **Two-component, room temperature curing,** methacrylate adhesive, exhibits superior peel strength on multiple substrates, especially aluminum.
- **Contains 5 mil spacer beads to prevent excessive squeeze-out of adhesive due to over-clamping.**

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
<th>Package Size</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>996513</td>
<td>50 ml dual cartridge</td>
<td>450 ml dual cartridge</td>
<td>50 ml dual cartridge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loctite® H8000™ Speedbonder™ Structural Adhesive Tough Aluminum Bonder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibits excellent peel strength on multiple substrates, especially aluminum.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>996432</td>
<td>50 ml dual cartridge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loctite® H8010™ Speedbonder™ Structural Adhesive Tough Aluminum Bonder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibits excellent peel and shear strength on aluminum.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1056942</td>
<td>50 ml dual cartridge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loctite® H810™ Speedbonder™ Structural Adhesive Fast Fixure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibits excellent peel strength on aluminum.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1056943</td>
<td>90 ml dual cartridge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loctite® U-05FL™ Urethane Adhesive High Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>A two-part, high performance urethane adhesive for metal bonding within a 5-7 minute work life.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>29351</td>
<td>5 gallon pail, hardener</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loctite® 3984™ Epoxy Adhesive High Performance / Various Substrates</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Highly fluorescent, one-part, heat cure epoxy adhesive offering superior physical, environmental and performance properties.</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3984</td>
<td>1 liter bottle</td>
</tr>
</tbody>
</table>
Loctite® Structural Adhesives for multiple surfaces bond a wide variety of materials, such as metal, ceramic and plastic. They are available in a variety of formulations and performance capabilities, including fast cure, superior water/humidity resistance, ease of dispense, excellent hot strength and resistance to a wide range of chemicals.

Overall benefits of Loctite® Structural Adhesives for multiple surfaces include:

- Range of cure profiles
- Range of viscosities
- High-impact strength
- Peel strength
- Variety of colors
- Toughness on a wide variety of substrates
- Durability on a wide variety of substrates
**Loctite® E-30UT™** contains Kevlar® to provide ultra-tough performance properties. As a result, special Loctite® mix nozzles are required for dispensing.

---

### Solution

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Two-Step Acrylic</th>
<th>Two-Step Acrylic</th>
<th>Two-Step Acrylic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Light Amber</td>
<td>Pale Yellow</td>
<td>Grey</td>
</tr>
<tr>
<td>Viscosity (cP)</td>
<td>17,000</td>
<td>67,500</td>
<td>15,000</td>
</tr>
<tr>
<td>Mix Ratio</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Work Life (minutes)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Fixture Time (minutes)</td>
<td>1</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>Cure Time (hours)</td>
<td>24</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Shear Strength¹ (psi)</td>
<td>3,500</td>
<td>3,300</td>
<td>3,500</td>
</tr>
<tr>
<td>Temperature Resistance</td>
<td>250°F (121°C)</td>
<td>250°F (121°C)</td>
<td>325°F (163°C)</td>
</tr>
</tbody>
</table>

---

### Product Description

**Loctite® 326™ Speedbonder™ Structural Adhesive**

*Fast Fixture*


**Loctite® 330™ Depend® Adhesive**

*General-Purpose*

A general-purpose, high viscosity adhesive for a wide range of materials, including metal, wood, ferrite, ceramic and plastic. Use with Loctite® 7387™ Depend® Activator.

**Loctite® A-533™ Structural Adhesive**

*(formerly National Adhesives Bondmaster™ 533)*

*Ultra-Fast Fixture*


---

* Made to Order Item
¹ Steel

---

### A Clue From Prof. McGlue

*Loctite® E-30UT™* contains Kevlar® to provide ultra-tough performance properties. As a result, special Loctite® mix nozzles are required for dispensing.
### General Performance

#### Clear Bonding

- **Fast Fixture**
  - General-Purpose Ultra-Fast Fixture
  - Flowable Non-Sag
  - Chemistry: Two-Step Acrylic
  - Color: Light Amber
  - Viscosity (cP): 17,000
  - Mix Ratio: N/A
  - Work Life (minutes): N/A
  - Fixture Time (minutes): 1
  - Cure Time (hours): 24
  - Shear Strength (psi): 3,500
  - Temperature Resistance: 250ºF (121ºC)

- **Medium Fixture**
  - Clear Bonding
  - Chemistry: Two-Part Epoxy
  - Color: Clear
  - Viscosity (cP): 67,500
  - Mix Ratio: 1:1
  - Work Life (minutes): 5
  - Fixture Time (minutes): 15
  - Cure Time (hours): 24
  - Shear Strength (psi): 3,300
  - Temperature Resistance: 180ºF (82ºC)

- **Extended Fixture**
  - Chemical Resistant
  - Chemistry: Two-Part Epoxy
  - Color: Clear
  - Viscosity (cP): 15,000
  - Mix Ratio: 2:1
  - Work Life (minutes): >180
  - Fixture Time (minutes): >180
  - Cure Time (hours): 24
  - Shear Strength (psi): 3,100
  - Temperature Resistance: 350ºF (177ºC)

---

**Loctite® 326™ Speedbonder™**
- *Structural Adhesive*
- An all-purpose bonder. Offers the strength of an epoxy and the speed of an instant adhesive.

- **P/N**
  - 32629 50 ml bottle
  - 32685 1 liter bottle

**Loctite® 330™ Depend® Adhesive**
- *General-Purpose*
- A general-purpose, high viscosity adhesive for a wide range of materials, including metal, wood, ferrite, ceramic and plastic. Use with Loctite® 7387™ Depend® Activator.

- **P/N**
  - 20253 3 ml kit (2.5 ml tube of Loctite® 330™ Depend® Adhesive and .6 ml ampule of Loctite® 7387™ Depend® Activator)
  - 20251 25 ml kit (25 ml syringe of Loctite® 330™ Depend® Adhesive and 25 g aerosol can of Loctite® 7387™ Depend® Activator)
  - 20252 250 ml kit (250 ml tube of Loctite® 330™ Depend® Adhesive and 128 g of Loctite® 7387™ Depend® Activator)
  - 33058 250 ml tube
  - 33064 300 ml cartridge
  - 33081 1 liter bottle

**Loctite® A-533™**
- *Structural Adhesive (formerly National Adhesives Bondmaster™ 533)*
- Ultra-Fast Fixture

- **P/N**
  - 1254145 50 ml bottle
  - 1254144 1 liter bottle
  - 1254143 14 liter pail

**Loctite® E-00CL™ Hysol® Epoxy Adhesive**
- *Flowable*
- A clear, flowable, fast setting epoxy with a 5-minute work life.

- **P/N**
  - 29289 50 ml dual cartridge
  - 29290 200 ml dual cartridge
  - 29291 400 ml dual cartridge

**Loctite® 608™ Hysol® Epoxy Adhesive**
- *Non-Sag*
- A fast-setting, low odor epoxy with a 5-minute work life. Cures at room temperature to form a clear bond line.

- **P/N**
  - 83086 4 g foil pack
  - 83075 50 ml dual cartridge
  - 83082 EPK 2.8 oz. kit

**Loctite® E-30CL™ Hysol® Epoxy Adhesive**
- *Chemical Resistant*
- An ultra clear, low viscosity, impact resistant epoxy with a 30-minute work life. An excellent glass bonder. Exhibits exceptional chemical resistance.

- **P/N**
  - 29329 50 ml dual cartridge
  - 29330 200 ml dual cartridge
  - 29331 400 ml dual cartridge

**Loctite® 0151™ Hysol® Epoxy Adhesive**
- *Ultra Clear*
- A general-purpose, thixotropic paste epoxy with a 60-minute work life. Allows for extended adjustment time.

- **P/N**
  - 83069 50 ml dual cartridge
  - 83179 2.8 lb. kit
  - 83178 10.7 lb. kit
Multiple Surface Bonding

Your Application

5th Law of Structural Engagement

There are no pretty bolt heads.

While fit and function are important, style is often the difference in a successful product in today’s marketplace. Fasteners protrude from the surface and can detract from the aesthetic styling of the assembly. Since adhesives are applied inside the joint, they are invisible within the assembly, resulting in a more cosmetically appealing product.

Solution

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Two-Part Epoxy</th>
<th>Two-Part Urethane</th>
<th>Two-Part Epoxy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Light Blue</td>
<td>Clear</td>
<td>Black</td>
</tr>
<tr>
<td>Viscosity (cP)</td>
<td>200,000</td>
<td>1,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Mix Ratio</td>
<td>1:1</td>
<td>1:1</td>
<td>1:1</td>
</tr>
<tr>
<td>Work Life (minutes)</td>
<td>10</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>Fixture Time (minutes)</td>
<td>25</td>
<td>150</td>
<td>360</td>
</tr>
<tr>
<td>Cure Time (hours)</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Shear Strength (psi)</td>
<td>3,825</td>
<td>1,146</td>
<td>2,630</td>
</tr>
<tr>
<td>Temperature Resistance</td>
<td>350°F (177°C)</td>
<td>350°F (177°C)</td>
<td>250°F (121°C)</td>
</tr>
</tbody>
</table>

Product Description

Loctite® 615™ Hyso1 Epoxy Adhesive
Sandable / Machinable
A high strength, low odor epoxy with a 10-minute work life. Blue, fast cure, gap filling.

Loctite® U-09LV™ Hyso1 Urethane Adhesive
Low Viscosity
A two-part, high performance urethane adhesive for plastic bonding with a 10-minute work life.

Loctite® E-60NC™ Hyso1 Epoxy Adhesive
Noncorrosive / Potting
An electronics-grade potting compound with a 60-minute work life. Black, opaque, low viscosity with excellent cure-through depth.

* Made to Order Item
1 Steel
2 Grit Blasted Mild Steel
## General Performance (Cont.)

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Color</th>
<th>Viscosity (cP)</th>
<th>Mix Ratio</th>
<th>Work Life (minutes)</th>
<th>Fixture Time (minutes)</th>
<th>Cure Time (hours)</th>
<th>Shear Strength1 (psi)</th>
<th>Temperature Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-Part Epoxy</td>
<td>Light Blue</td>
<td>2,500</td>
<td>1:1</td>
<td>10</td>
<td>25</td>
<td>24</td>
<td>3,825</td>
<td>350ºF (177ºC)</td>
</tr>
<tr>
<td>Two-Part Urethane</td>
<td>Clear</td>
<td>70,000</td>
<td>1:1</td>
<td>10</td>
<td>150</td>
<td>24</td>
<td>1,146</td>
<td>350ºF (177ºC)</td>
</tr>
<tr>
<td>Two-Part Epoxy</td>
<td>Black</td>
<td>40,000</td>
<td>1:1</td>
<td>5</td>
<td>30</td>
<td>24</td>
<td>2,630</td>
<td>250ºF (121ºC)</td>
</tr>
</tbody>
</table>

### Loctite® 615™ Hysol®
Epoxy Adhesive
- **Sandable / Machinable**
- A high strength, low odor epoxy with a 10-minute work life. Blue, fast cure, gap filling.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>83094</td>
<td>EPK 3.2 oz. kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>83095*</td>
<td>12 lb. kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Loctite® U-09LV™ Hysol®
Urethane Adhesive
- **Flexible**
- A two-part, high performance urethane adhesive for plastic bonding with a 10-minute work life.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>38588</td>
<td>50 ml dual cartridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>38589</td>
<td>200 ml dual cartridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Loctite® E-60NC™ Hysol®
Epoxy Adhesive
- **Noncorrosive / Potting**
- An electronics-grade potting compound with a 60-minute work life. Black, opaque, low viscosity with excellent cure-through depth.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
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<td></td>
<td></td>
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</tr>
<tr>
<td>29325</td>
<td>200 ml dual cartridge</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>29326</td>
<td>400 ml dual cartridge</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Loctite® E-05CL™ Hysol®
Epoxy Adhesive
- **Toughened**
- An ultra-clear, high peel, low odor epoxy with a 5-minute work life.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
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<td></td>
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<td>29300</td>
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<td>29301</td>
<td>400 ml dual cartridge</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29302*</td>
<td>5 gallon pail, resin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29303*</td>
<td>5 gallon pail, hardener</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Loctite® E-40FL™ Hysol®
Epoxy Adhesive
- **Flexible**
- A grey, impact resistant, toughened epoxy with a 40-minute work life.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td></td>
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<td>29305</td>
<td>200 ml dual cartridge</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>29306</td>
<td>400 ml dual cartridge</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Loctite® E-90FL™ Hysol®
Epoxy Adhesive
- **Impact Resistant**
- A grey, impact resistant, toughened epoxy with a 90-minute work life.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>29310</td>
<td>200 ml dual cartridge</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29311</td>
<td>400 ml dual cartridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>29312*</td>
<td>5 gallon pail, resin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29313*</td>
<td>5 gallon pail, hardener</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
High Toughness

Two-Part Epoxy

- Grey
- Off-White
- Beige

One-Part Epoxy

- Transparent

Mix Ratio

- 1:1
- N/A
- 2:1
- 2:1

Cure Time (hours)

- 24
- 24
- 24
- 24

Temperature Resistance

- 250°F (121°C)
- 300°F (148°C)
- 350°F (177°C)
- 350°F (177°C)

Shear Strength (psi)

- 3,200
- 3,600
- 4,200
- 3,270

Solution

E-05MR™

- Two-Part Epoxy
- Ultra Clear
- 25,000
- 5
- 5
- 24
- 3,200
- 250°F (121°C)

324™

- Two-Step Acrylic
- Amber
- 17,000
- N/A
- 5
- 24
- 3,600
- 300°F (148°C)

E-30UT™

- Two-Part Epoxy
- Purple
- 12,200
- N/A
- 180
- 24
- 4,200
- 350°F (177°C)

E-20HP™

- Two-Part Epoxy
- Off-White
- 30,000
- 22
- 120
- 24
- 3,270
- 350°F (177°C)

Product Description

Loctite® E-05MR™

- Epoxy Adhesive
- Moisture Resistant

- Clear, two-component, fast room temperature curing epoxy adhesive provides excellent moisture resistance and exceptional toughness for a 5-minute epoxy. Its low odor and non-skimming properties make bulk dispensing possible.

P/N Package Size

- 1087601 25 ml dual cartridge
- 1086509 50 ml dual cartridge
- 1086600 200 ml dual cartridge
- 1086509P 400 ml dual cartridge
- 1087601G 5 gallon pail, hardener

Loctite® 324™

- Speedbonder™ Structural Adhesive
- High Impact


P/N Package Size

- 32430 50 ml bottle

Loctite® E-30UT™

- Epoxy Adhesive
- Ultra-Tough

- A two-component room temperature curing epoxy adhesive that contains Kevlar® to provide exceptional fracture toughness characteristics for the most demanding structural bonding requirements. 35-minute work life.

P/N Package Size

- 1078234 400 ml dual cartridge

Loctite® E-20HP™

- Epoxy Adhesive
- High Performance

- A high strength epoxy with a 20-minute work life. Off-white, toughened, high peel, high shear.

P/N Package Size

- 29314 50 ml dual cartridge
- 29315 200 ml dual cartridge
- 29316 400 ml dual cartridge
- 29317 5 gallon pail, hardener

A Clue From Prof. McGlue

Unlike most 5-minute epoxies, Loctite® E-05MR™ has non-skimming properties, making it process friendly for bulk dispensing.
<table>
<thead>
<tr>
<th>Temperature Fixture</th>
<th>High Performance</th>
<th>Non-Sag</th>
<th>Flowable</th>
<th>Non-Sag</th>
<th>Low Temp. Impact Resistant</th>
</tr>
</thead>
<tbody>
<tr>
<td>250ºF (121ºC)</td>
<td>300ºF (148ºC)</td>
<td>350ºF (177ºC)</td>
<td>350ºF (177ºC)</td>
<td>250ºF (121ºC)</td>
<td>–</td>
</tr>
</tbody>
</table>

**Shear Strength (psi)**
- Grey: 24
- Off-White: 24
- Beige: 24
- Transparent: 5,000
- Black: 50,000
- Grey: 24
- Off-White: 24
- Beige: 24
- Transparent: 4,930
- Black: 1,500
- Grey: 350°F (177ºC)
- Off-White: 350°F (177ºC)
- Beige: 350°F (177ºC)
- Transparent: –
- Black: 250°F (121ºC)

**Cure Time (hours)**
- Grey: 15
- Off-White: 5
- Beige: 180
- Transparent: –
- Black: –
- Grey: 30 min.
- Off-White: –
- Beige: –
- Transparent: –
- Black: 40 min.
- Grey: –
- Off-White: –
- Beige: –
- Transparent: –
- Black: –

**Fixture Time (minutes)**
- Grey: 120
- Off-White: –
- Beige: –
- Transparent: –
- Black: –
- Grey: –
- Off-White: –
- Beige: –
- Transparent: –
- Black: –

**Work Life (minutes)**
- Grey: 5 N/A 35 20
- Off-White: N/A 35 20
- Beige: N/A 35 20
- Transparent: N/A 30 min. @ 25°F (125ºC)
- Black: N/A 30 min. @ 272°F (150ºC)
- Grey: 40 min. @ 275°F (135ºC)

**Chemistry**
- Grey, Off-White, Beige: Non-Sag, High Performance, Non-Sag
- Transparent, Black: High Toughness, Flowable, Low Temp. Impact Resistant

**Extended Room Temperature Fixture**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**Heat Cure - One Part**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**Non-Sag Impact Resistant**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**High Impact Structural Adhesive**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**Non-Sag High Toughness**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**Low Temp. Impact Resistant**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**High Performance**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**Flowable**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**One-Part Epoxy**
- Grey: Loctite® 9460™
- Off-White: Hysol® E-40HP™
- Beige: E-60HP™
- Transparent: 9462™
- Black: 3981™

**Two-Part Epoxy**
- Grey: Loctite® 9430™
- Off-White: Hysol® E-60HP™
- Beige: E-30UT™
- Transparent: 3981™
- Black: 3985™

**P/N  Package Size**
- Grey: 9460™ 25 ml dual cartridge
- Off-White: E-60HP™ 50 ml dual cartridge
- Beige: E-30UT™ 50 ml dual cartridge
- Transparent: 3981™ 50 ml dual cartridge
- Black: 3985™ 50 ml dual cartridge

**Specifications**
- Grey: Ultra Clear
- Off-White: Amber
- Beige: Purple
- Transparent: Off-White
- Black: Off-White
- Grey: Amaranth
- Off-White: Beige
- Beige: Beige
- Transparent: Transparent
- Black: Black
Multiple Surface Bonding

Your Application

6th Law of Structural Engagement

When was the last time you heard a structural adhesive rattling around?

Many assemblies fastened together using screws and bolts can loosen over time, resulting in rattling noises as your assemblies go through their paces. Using an adhesive instead of fasteners not only can prevent loosening, but the adhesive’s ability to absorb noise and damp vibrations also makes it an excellent sound deadener.

Solution

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Chemistry</th>
<th>Color</th>
<th>Viscosity (cP)</th>
<th>Mix Ratio</th>
<th>Work Life (minutes)</th>
<th>Fixture Time (minutes)</th>
<th>Cure Time (hours)</th>
<th>Shear Strength (psi)</th>
<th>Temperature Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loctite® 332™ Structural Adhesive</td>
<td>Two-Step Acrylic</td>
<td>Amber</td>
<td>100,000</td>
<td>N/A</td>
<td>N/A</td>
<td>3</td>
<td>24</td>
<td>3,000</td>
<td>400°F (204°C)</td>
</tr>
<tr>
<td>Loctite® 1C™ Hysol® Epoxy Adhesive</td>
<td>Two-Part Epoxy</td>
<td>White</td>
<td>350,000</td>
<td>2.5:1</td>
<td>25</td>
<td>210</td>
<td>24</td>
<td>1,750*</td>
<td>350°F (177°C)</td>
</tr>
<tr>
<td>Loctite® E-40HT™ Hysol® Epoxy Adhesive</td>
<td>Two-Part Epoxy</td>
<td>Off-White</td>
<td>16,000</td>
<td>2:1</td>
<td>45</td>
<td>180</td>
<td>24</td>
<td>4,030</td>
<td>350°F (177°C)</td>
</tr>
</tbody>
</table>

* Made to Order Item
1 Steel
2 Grit Blasted Mild Steel
3 Etched Aluminum

Loctite® 332™ Structural Adhesive
Severe Environment
An activator-cured, no-mix adhesive that provides high temperature capability with thermal durability up to 400°F (204°C). Use with Loctite® 7367™ Depend™ Activator.

Loctite® 1C™ Hysol® Epoxy Adhesive
Gap Filling
A high viscosity paste with a 25-minute work life. Excellent gap-filling capability and performance properties.

Loctite® E-40HT™ Hysol® Epoxy Adhesive
High Temperature
A two-component toughened adhesive, which combines high peel strength at room temperature with tensile lap shear strength at elevated temperatures. An off-white paste exhibiting exceptional high temperature performance.
# High Temperature / Chemically Resistant

## Extended Room Temperature Fixture

- **Flowable**
- **Non-Sag**
- **Self-Leveling**

<table>
<thead>
<tr>
<th>Description</th>
<th>E-50CR™</th>
<th>9340™</th>
<th>9459™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>Two-Step Acrylic</td>
<td>Two-Part Epoxy</td>
<td>Two-Part Epoxy</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
<td>Grey</td>
<td>Light Grey</td>
</tr>
<tr>
<td>Viscosity (cP)</td>
<td>100,000</td>
<td>350,000</td>
<td>16,000</td>
</tr>
<tr>
<td>Mix Ratio</td>
<td>N/A</td>
<td>2.5:1</td>
<td>2:1</td>
</tr>
<tr>
<td>Work Life (minutes)</td>
<td>N/A</td>
<td>25</td>
<td>45</td>
</tr>
<tr>
<td>Fixture Time (minutes)</td>
<td>3</td>
<td>210</td>
<td>180</td>
</tr>
<tr>
<td>Cure Time (hours)</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Shear Strength (psi)</td>
<td>3,000</td>
<td>1,750</td>
<td>4,030</td>
</tr>
<tr>
<td>Temperature Resistance</td>
<td>400°F (204°C)</td>
<td>350°F (177°C)</td>
<td>&gt;180°F (82°C)</td>
</tr>
</tbody>
</table>

**Loctite® 332™**
- **Structural Adhesive**
- **Severe Environment**
- An activator-cured, no-mix adhesive that provides high temperature capability with thermal durability up to 400°F (204°C). Use with Loctite® 7387™ Depend® Activator.

**P/N Package Size**
- 33201 25 ml syringe
- 33275 300 ml cartridge
- 33290 1 liter bottle

**Loctite® 1C™**
- **Hysol® Epoxy Adhesive**
- **Gap Filling**
- A high viscosity paste with a 25-minute work life. Excellent gap-filling capability and performance properties.

**P/N Package Size**
- 83200 EPK 4 oz. kit
- 83202 4 lb. kit
- 83201 17 lb. kit
- 83206* 60 lb. pail, resin
- 83183* 43 lb. pail, hardener

**Loctite® E-40HT™**
- **Hysol® Epoxy Adhesive**
- **High Temperature**
- A two-component toughened adhesive, which combines high peel strength at room temperature with tensile lap shear strength at elevated temperatures. An off-white paste exhibiting exceptional high temperature performance.

**P/N Package Size**
- 1086065 50 ml dual syringe
- 1086081 400 ml dual cartridge

**Loctite® E-50CR™**
- **Hysol® Epoxy Adhesive**
- **Chemically Resistant**
- A flowable, two-component, extended room temperature curing epoxy with excellent chemical resistance properties. Black, 50-minute work life.

**P/N Package Size**
- 1079594 50 ml dual syringe
- 1079593 400 ml dual cartridge

**Loctite® 9340™**
- **Hysol® Epoxy Adhesive**
- **Environmental Resistance**
- A grey, high viscosity epoxy with a 90-minute work life. Excellent high temperature and chemical resistance.

**P/N Package Size**
- 83104 EPK 2.7 oz. kit
- 83105 5 lb. kit

**Loctite® 9459™**
- **Hysol® Epoxy Adhesive**
- **High Temperature Resistance**
- A one-component, heat cure epoxy. Low viscosity, self-leveling. Light grey, excellent high temperature performance, excellent chemical resistance.

**P/N Package Size**
- 83126 10 lb. can
Loctite® Structural Adhesives for plastic, composite and polyolefin surfaces are capable of bonding a variety of materials, including fiberglass, gel coat, thermoplastics, polycarbonate, ABS, PVC, polyethylene and polypropylene. They have been specially formulated to provide UV resistance, high impact resistance and peel resistance.

Loctite® Structural Adhesives for plastic, composite and polyolefin materials are available with a variety of benefits, including the following:

- Non-sag
- High temperature resistance
- Flexible bond strengths
- Toughened bond strengths to polyolefins
- Fast fixture time
- Substrate failure on many composite materials
- Varying cure times

7th Law of Structural Engagement

Less is more.

Assemblies bonded with adhesives often provide higher bond strength versus those assembled with mechanical fasteners. However, some manufacturers cannot completely eliminate the use of mechanical fasteners, sometimes due to fast processing speed requirements and the cure time needed for adhesives. In these cases, manufacturers are able to significantly reduce the number of mechanical fasteners by using just enough to help “fixture” the part during assembly while the adhesive cures. The adhesive still absorbs the brunt of the force once cured, but allows the manufacturer to reduce the number of fasteners, thus reducing material costs.

THE IMMUTABLE LAWS OF STRUCTURAL ENGAGEMENT

We’re Writing the Law

www.henkelna.com/loctitestucturals
**Loctite® E-910™**

Low cure temperature makes it ideal for bonding most plastics.

### A Clue From Prof. McGlue

Loctite® E-910™

*Made to Order Item*

- Steel
- Aluminum
- Abraded Aluminum
- Etched Aluminum
- Block Shear Grit Blasted Steel

### Solution

<table>
<thead>
<tr>
<th>Product Description</th>
<th>H4100™</th>
<th>H4200™</th>
<th>H4000™</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemistry</strong></td>
<td>Two-Part Acrylic</td>
<td>Two-Part Acrylic</td>
<td>Two-Part Acrylic</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Pale Yellow</td>
<td>Pale Yellow</td>
<td>Pale Yellow</td>
</tr>
<tr>
<td><strong>Viscosity (cP)</strong></td>
<td>100,000</td>
<td>90,000</td>
<td>130,000</td>
</tr>
<tr>
<td><strong>Mix Ratio</strong></td>
<td>10 : 1</td>
<td>10 : 1</td>
<td>10 : 1</td>
</tr>
<tr>
<td><strong>Work Life (minutes)</strong></td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td><strong>Fixture Time (minutes)</strong></td>
<td>5</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td><strong>Cure Time (hours)</strong></td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td><strong>Shear Strength 1 (psi)</strong></td>
<td>3,140</td>
<td>4,020</td>
<td>3,500</td>
</tr>
<tr>
<td><strong>Impact Strength 1 (kJ/m²)</strong></td>
<td>8</td>
<td>&gt;42</td>
<td>20</td>
</tr>
<tr>
<td><strong>Peel Strength 2 (pli)</strong></td>
<td>13</td>
<td>55</td>
<td>45</td>
</tr>
</tbody>
</table>

### Product Description

**Loctite® H4100™ Speedbonder™ Structural Adhesive**

**Ultra-Fast Fixture**

A non-sagging, two-component methacrylate adhesive ideal for bonding PVC, polycarbonate, acrylic, ABS and FRP. Ultra-fast adhesive develops handling strength in 3 to 5 minutes. Forms resilient bonds and maintains its strength over a wide range of temperatures.

**Loctite® H4200™ Speedbonder™ Structural Adhesive**

**Toughened**

A plastic and composite bonder with high peel and impact resistance. Fixtures in 15 minutes.

**Loctite® H4000™ Speedbonder™ Structural Adhesive**

**Non-Sag**

A medium fixturing structural adhesive for bonding various plastic and composite substrates, including epoxy coat and glass fiber reinforced polyester.
## High Toughness

**Medium Room Temperature Fixture**
- **Heat Cure**
- **Extended Room Temperature Fixture**
- **Fast Room Temperature Fixture**
- **UV Resistant**
- **Impact Resistant**
- **High Temperature / Chemical Resistant**
- **Fluorescent**
- **Carbon Fiber Composite Bonder**
- **Low Cure Temperature**

### TOP CHOICE
- **Loctite® H6051™**
- **Loctite® H4800™**
- **Loctite® E-120HP™**
- **Loctite® H4000™**
- **Loctite® H6051™**
- **Loctite® E-119HP™**
- **Loctite® E-910™**

### Chemistry
- Two-Part Acrylic
- Two-Part Acrylic
- Two-Part Epoxy
- One-Part Epoxy
- One-Part Epoxy
- One-Part Epoxy

### Color
- White
- Light Yellow
- Amber
- Off-White
- Beige
- Green

### Viscosity (cP)
- 100,000
- 90,000
- 130,000
- 100,000
- 50,000
- 30,000
- 8,000
- Thixotropic
- 40,000

### Mix Ratio
- 10 : 1
- 10 : 1
- 10 : 1
- 2 : 1
- 10 : 1
- N/A
- N/A
- N/A

### Work Life (minutes)
- 2
- 5
- 8
- 35
- 25
- 120
- N/A
- N/A

### Fixture Time (minutes)
- 5
- 15
- 14
- 50
- 35
- 180
- N/A
- N/A

### Cure Time (hours)
- 24
- 24
- 24
- 24
- 24
- 24
- 24
- 30

### Shear Strength1 (psi)
- 3,140
- 4,020
- 3,500
- 2,400
- 3,930
- 4,300
- 5,830
- 4,930
- 2,000

### Impact Strength1 (kJ/m²)
- 8
- >42
- 20
- –
- –
- –
- –

### Peel Strength2 (pli)
- 13
- 55
- 45
- 35
- 50
- 20 to 50
- –
- –

---

**Loctite® H6051™**
- Speedbonder™
- Structural Adhesive
- UV Resistant
- A white UV resistant adhesive ideal for bonding gel-coated surfaces. Excellent non-sagging properties.

**Loctite® H4800™**
- Speedbonder™
- Structural Adhesive
- Toughened
- Excellent peel and impact resistance. Provides high bond strengths on composites.

**Loctite® E-120HP™**
- Hysol®
- Epoxy Adhesive
- Ultra Strength
- An amber, non-sag, aerospace grade epoxy with an extended open time to allow for the adjustment of large parts.

**Loctite® H4000™**
- Structural Adhesive
- Non-Sag
- A medium fixturing structural adhesive for bonding various plastic and composite substrates, including epoxy coat and glass fiber reinforced polyester.

**Loctite® H6051™**
- Speedbonder™
- Structural Adhesive
- UV Resistant
- A white UV resistant adhesive ideal for bonding gel-coated surfaces. Excellent non-sagging properties.

**Loctite® E-119HP™**
- Hysol®
- Epoxy Adhesive
- Non-Wicking
- One-component, heat-cure epoxy adhesive exhibits very low wicking during cure when exposed to elevated cure temperatures. A thixotropic, non-sag, beige paste that bonds extremely well to carbon composite and aluminum materials.

**Loctite® E-910™**
- Epoxy Adhesive
- Low Cure Temperature
- One-component, heat-cure epoxy can be cured at low temperatures, making it ideal for bonding most plastics.

---

**P/N**
**Package Size**
- 83062*: 490 ml dual cartridge
- 83065*: 30 lb. pail, adhesive
- 83063*: 60 lb. pail, activator

---

**P/N**
**Package Size**
- 29353: 50 ml dual cartridge
- 29354: 200 ml dual cartridge
- 29355: 400 ml dual cartridge
- 29356*: 5 gallon pail, resin
- 29357*: 5 gallon pail, hardener

---

**P/N**
**Package Size**
- 36767: 30 ml syringe

---

**P/N**
**Package Size**
- 1215342: 5 gallon pail

---

**P/N**
**Package Size**
- 1078992: 30 ml syringe
- 1080008*: 300 ml cartridge

---

**P/N**
**Package Size**
- 1078992: 30 ml syringe
- 1080008*: 300 ml cartridge
Unlike most other adhesives, a primer or surface treatment is not required when using Loctite® 3032™ or 3034™ to bond polyolefins.

**A Clue From Prof. McGlue**

**Unlabeled**

**Your Application**

**Product Description**

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Two-Part Acrylic</th>
<th>Two-Part Acrylic</th>
<th>Two-Part Acrylic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Cream</td>
<td>Yellow</td>
<td>Clear</td>
</tr>
<tr>
<td>Viscosity (cP)</td>
<td>45,000</td>
<td>110,000</td>
<td>18,000</td>
</tr>
<tr>
<td>Mix Ratio</td>
<td>1:1</td>
<td>1:1</td>
<td>1:1</td>
</tr>
<tr>
<td>Work Life (minutes)</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Fixture Time (minutes)</td>
<td>15</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Cure Time (hours)</td>
<td>24</td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td>Shear Strength' (psi)</td>
<td>3,830</td>
<td>3,350</td>
<td>2,000</td>
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<tr>
<td>Impact Strength' (kJ/m²)</td>
<td>25</td>
<td>20</td>
<td>–</td>
</tr>
<tr>
<td>Peel Strength' (pli)</td>
<td>45</td>
<td>40</td>
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</tbody>
</table>

**Product Description**

**Loctite® H3000™ Speedbonder™ Structural Adhesive**

*High Strength*

A low viscosity adhesive ideal for bonding a variety of substrates.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>83001</td>
<td>50 ml dual cartridge</td>
</tr>
<tr>
<td>83000</td>
<td>400 ml dual cartridge</td>
</tr>
</tbody>
</table>

**Loctite® H3300™ Speedbonder™ Structural Adhesive**

*Fast Fixture*

A non-sag, fast fixtureing structural adhesive for bonding a variety of substrates.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>83019</td>
<td>400 ml dual cartridge</td>
</tr>
<tr>
<td>83024*</td>
<td>40 lb. pail, adhesive</td>
</tr>
<tr>
<td>83022*</td>
<td>40 lb. pail, activator</td>
</tr>
</tbody>
</table>

**Loctite® H5004™ Speedbonder™ Structural Adhesive**

*Formerly National Adhesives Bondmaster® V5004*

*Low Odor*

A low odor, low viscosity adhesive, cures to a transparent color. Ultra-fast, this adhesive fixtures in 3 minutes.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1219217</td>
<td>50 ml dual cartridge</td>
</tr>
</tbody>
</table>

*Made to Order Item

1. Steel
2. Aluminum
3. Block Shear on
4. High Density Polyethylene
## General Bonding

### Polyolefin Bonding

- **Medium Room Temperature Fixture**
- **Extended Room Temperature Fixture**
- **Fast Room Temperature Fixture**
- **Medium Room Temperature Fixture**

### Bonding Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Chemistry</th>
<th>Color</th>
<th>Viscosity (cP)</th>
<th>Mix Ratio</th>
<th>Work Life (minutes)</th>
<th>Fixture Time (minutes)</th>
<th>Cure Time (hours)</th>
<th>Shear Strength1 (psi)</th>
<th>Impact Strength1 (kJ/m²)</th>
<th>Peel Strength2 (pli)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Loctite® H5004™ Speedbonder™</strong></td>
<td>Two-Part Acrylic</td>
<td>Clear</td>
<td>5,000</td>
<td>1:1</td>
<td>5</td>
<td>15</td>
<td>24</td>
<td>1,459</td>
<td>5 to 30</td>
<td>–</td>
</tr>
<tr>
<td><strong>Loctite® H3101™ Speedbonder™</strong></td>
<td>Two-Part Acrylic</td>
<td>Cream</td>
<td>75,000</td>
<td>1:1</td>
<td>5</td>
<td>120</td>
<td>8</td>
<td>3,350</td>
<td>20</td>
<td>–</td>
</tr>
<tr>
<td><strong>Loctite® 3032™ Speedbonder™</strong></td>
<td>Two-Part Acrylic</td>
<td>Off-White</td>
<td>14,000</td>
<td>10:1</td>
<td>10</td>
<td>120</td>
<td>24</td>
<td>2,450</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td><strong>Loctite® 3034™ Speedbonder™</strong></td>
<td>Two-Part Acrylic</td>
<td>Translucent</td>
<td>60,000</td>
<td>10:1</td>
<td>10</td>
<td>120</td>
<td>24</td>
<td>2,450</td>
<td>14</td>
<td>35</td>
</tr>
</tbody>
</table>

### Urethane Adhesives

**Loctite® U-09FL™**

- **Highly Flexible**
- A low viscosity adhesive ideal for bonding a variety of substrates.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>29460</td>
<td>50 ml dual cartridge</td>
</tr>
<tr>
<td>29461</td>
<td>200 ml dual cartridge</td>
</tr>
<tr>
<td>29462*</td>
<td>400 ml dual cartridge</td>
</tr>
</tbody>
</table>

**Loctite® H3000™**

- **H3300™**
- **NEW H5004™**
- **U-09FL™**
- **H3101™**
- **3032™**
- **3034™**

### Urethane Adhesives

**Loctite® H3000™ Speedbonder™**

- **Structural Adhesive**
- **Extended Work Life**
- A medium viscosity adhesive ideal for bonding a variety of substrates.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
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</thead>
<tbody>
<tr>
<td>83007</td>
<td>50 ml dual cartridge</td>
</tr>
<tr>
<td>83006</td>
<td>400 ml dual cartridge</td>
</tr>
</tbody>
</table>

**Loctite® H3300™ Speedbonder™**

- **Structural Adhesive**
- **Fast Fixture**
- A non-sag, fast fixturing structural adhesive for bonding a variety of substrates.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>83020</td>
<td>50 ml dual cartridge</td>
</tr>
<tr>
<td>83019</td>
<td>400 ml dual cartridge</td>
</tr>
<tr>
<td>83024*</td>
<td>40 lb. pail, adhesive</td>
</tr>
<tr>
<td>83022*</td>
<td>40 lb. pail, activator</td>
</tr>
</tbody>
</table>

**Loctite® H5004™ Speedbonder™**

- **Formerly National Adhesives Bondmaster® V5004**
- **Low Odor**
- A low odor, low viscosity adhesive, cures to a transparent color. Ultra-fast, this adhesive fixtures in 3 minutes.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1219217</td>
<td>50 ml dual cartridge</td>
</tr>
</tbody>
</table>

**Loctite® U-09FL™ Hysol® Urethane Adhesive**

- **Structural Adhesive**
- **Highly Flexible**
- A two-part, high performance urethane adhesive for plastic bonding with a 10-minute work life. Ultra-clear, impact resistant, high peel.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>29460</td>
<td>50 ml dual cartridge</td>
</tr>
<tr>
<td>29461</td>
<td>200 ml dual cartridge</td>
</tr>
<tr>
<td>29462*</td>
<td>400 ml dual cartridge</td>
</tr>
</tbody>
</table>

**Loctite® 3032™**

- **Structural Adhesive**
- **Fast Fixture**
- A fast fixturing, thixotropic acrylic adhesive. Designed to bond low energy plastic substrates. Excellent polypropylene bonder.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1051591</td>
<td>50 ml dual cartridge</td>
</tr>
<tr>
<td>40760*</td>
<td>490 ml dual cartridge</td>
</tr>
</tbody>
</table>

**Loctite® 3034™**

- **Structural Adhesive**
- **Toughened**
- Extended open time allows for adjustment of parts. Excellent peel and shear strength on polyethylene plastics.

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1051330</td>
<td>50 ml cartridge</td>
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<tr>
<td>960973</td>
<td>490 ml dual cartridge</td>
</tr>
</tbody>
</table>
Since 1971, Henkel Corporation has designed, built and integrated high-quality equipment solutions. From simple handheld devices to fully automated systems and a broad range of accessories, Henkel offers a complete line of off-the-shelf and custom-built Loctite® brand dispensing equipment that can easily be integrated into your manufacturing process.

Handheld Applicators

<table>
<thead>
<tr>
<th>Product Description</th>
<th>P/N</th>
<th>Used to Dispense</th>
<th>Package Types &amp; Sizes</th>
<th>Viscosity Range</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Syringe Dispensing</strong> – Simple manual dispensers for low-volume syringe applications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loctite® 30 ml Manual Syringe Applicator</td>
<td>98026</td>
<td>Any fluid in a 30 ml syringe including 25 ml syringes</td>
<td>30 ml syringe</td>
<td>Low to High</td>
<td>Manual</td>
</tr>
<tr>
<td>Loctite® 10 / 30 ml Syringe Manual Plungers</td>
<td>98192</td>
<td>Any fluid in a 10 ml syringe</td>
<td>10 ml syringe (3 pack)</td>
<td>Low to High</td>
<td>Manual</td>
</tr>
<tr>
<td>Loctite® 30 ml Manual Syringe Applicator</td>
<td>98193</td>
<td>Any fluid in a 30 ml syringe</td>
<td>30 ml syringe (3 pack)</td>
<td>Low to High</td>
<td>Manual</td>
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<tr>
<td><strong>Two-Part Dispensing</strong> – Simple and effective two-part dispensers to meet your lower precision dual cartridge application needs.</td>
<td></td>
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<tr>
<td>Loctite® 50 ml Dual Cartridge Manual Applicators</td>
<td>98472</td>
<td>Two-Component Epoxies, Urethanes, Methacrylates</td>
<td>50 ml dual cartridge, 1:1, 2:1</td>
<td>Low to High</td>
<td>Manual</td>
</tr>
<tr>
<td>Loctite® 50 ml Dual Cartridge Pneumatic Applicator</td>
<td>1034026</td>
<td>Two-Component Epoxies, Urethanes, Methacrylates</td>
<td>50 ml dual cartridge, 1:1, 2:1</td>
<td>Low to High</td>
<td>Manual</td>
</tr>
<tr>
<td>Loctite® 50 ml S-Style Dual Cartridge Pneumatic Applicator</td>
<td>97042</td>
<td>Two-Component Epoxies, Urethanes, Methacrylates</td>
<td>50 ml dual cartridge, (excludes 10:1)</td>
<td>Low to High</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Loctite® Caulking Gun Conversion Kits for 50 ml Cartridges</td>
<td>98466</td>
<td>Two-Component Epoxies, Urethanes, Methacrylates</td>
<td>50 ml dual cartridge, 1:1, 2:1</td>
<td>Low to High</td>
<td>Manual</td>
</tr>
<tr>
<td>Loctite® 200 ml / 400 ml Manual Applicators</td>
<td>983436</td>
<td>Two-Component Epoxies, Urethanes, Methacrylates</td>
<td>200 ml dual cartridge</td>
<td>High to Paste</td>
<td>Manual</td>
</tr>
<tr>
<td>Loctite® 200 ml / 400 ml Pneumatic Applicators</td>
<td>983438</td>
<td>Two-Component Epoxies, Urethanes, Methacrylates</td>
<td>400 ml dual cartridge</td>
<td>High to Paste</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Loctite® Universal Fixmaster® Dispenser</td>
<td>137271</td>
<td>Two-Component Epoxies, Urethanes, Methacrylates</td>
<td>200 ml and 400 ml dual cartridges</td>
<td>High to Paste</td>
<td>Manual</td>
</tr>
<tr>
<td><strong>Cartridge Dispensing</strong> – Manual and pneumatic applications for 300 ml cartridges.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loctite® 300 ml Pneumatic Cartridge Dispenser</td>
<td>1294304</td>
<td>Epoxy Acrylics</td>
<td>300 ml cartridges</td>
<td>Medium to High</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Loctite® 300 ml Pneumatic Cartridge Dispensing Retainer</td>
<td>98319A</td>
<td>Epoxy Acrylics</td>
<td>300 ml cartridges</td>
<td>Low to Medium</td>
<td>Pneumatic</td>
</tr>
</tbody>
</table>

For more information on our complete equipment offering, visit our equipment website at www.equipment.loctite.com or call 1.800.LOCTITE (562.8483) in the US or 1.800.263.5043 in Canada to speak with a technical representative.
Automated Dispensing Systems and Components

**Loctite® Precision Syringe Dispense System**

P/N 97006

A semiautomatic, pneumatically powered, pressure-time-vacuum dispensing system for 30 ml syringes. Precision regulator and digital controls ensure accurate dispensing.

**Loctite® Posi-Link™ Dispensing System**

A programmable, volumetric system that provides the highest level of precision dispensing for pre-packaged 30 ml syringes or 50 ml, 200 ml or 400 ml dual cartridges. The modular components are each sold separately.

**Loctite® Posi-Link™ Controller**

P/N 98377

Provides all operator interface and control signals to actuator.

**Loctite® Pinch Tube Valve**

P/N 97141

Attaches to square mix nozzle to provide positive, no-drip shut off.

**Loctite® Posi-Link™ Nests**

Connects actuator to syringe or cartridge.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>98645* N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Loctite® Posi-Link™ 5 – 25 Actuator</td>
<td></td>
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<tr>
<td>98640 98641</td>
<td>98642 N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Loctite® Posi-Link™ 10 – 50 Actuator</td>
<td></td>
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<tr>
<td>N/A N/A</td>
<td>N/A</td>
<td>98662 98663</td>
<td>98664</td>
<td></td>
<td></td>
<td>Loctite® Posi-Link™ 200 – 400 Actuator</td>
<td></td>
</tr>
</tbody>
</table>

**Complete Loctite® Posi-Link™ Dispense System**

For 30 ml Syringes:

Controller + Actuator + Nest

For 50 ml Dual Cartridges:

Controller + Actuator + Nest

For 200/400 ml Dual Cartridges:

Controller + Actuator + Nest + Pinch Tube

**Loctite® Posi-Link™ Actuators**

P/N 98378, 98379, 98380

Drives movement of syringe or cartridge piston and displace programmable quantities of adhesives.

<table>
<thead>
<tr>
<th>Product</th>
<th>Loctite® Posi-Link™ 5-25 Actuator</th>
<th>Loctite® Posi-Link™ 10-50 Actuator</th>
<th>Loctite® Posi-Link™ 200-400 Actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Type</td>
<td>Recommended for Handheld</td>
<td>Recommended for Mounted or Robotic</td>
<td>Recommended for Mounted or Robotic</td>
</tr>
<tr>
<td>Syringe/Cartridge Barrel Size</td>
<td>5, 10, 25 ml</td>
<td>10, 25 ml</td>
<td>All Dual 200 or 400 ml Cartridges 1:1/2:1/10:1 Ratio Adhesives</td>
</tr>
</tbody>
</table>
9th Law of Structural Engagement

You can’t fill gaps with a handful of screws.

No matter how many more fasteners you add to an assembly that has a large gap between its parts, you still won’t be able to close the gap. One of the significant advantages of using an adhesive over a mechanical fastener is its ability to fill in gaps between mating parts, which yields a more reliable bond and makes the end-assembly much more aesthetically pleasing.

NEW

Loctite® DuraPump™ Meter Mix Dispense Systems

Offer superior operating performance and durability for a wide range of two-component adhesive chemistries up to 10:1 mix ratios. The innovative rod displacement pump design ensures excellent shot repeatability, low wear and allows direct connection to high pressure feed systems. Available in programmable and pneumatic versions. Contact your sales or technical customer support engineer to confirm pricing and availability.

Load time: 2 weeks or stock.

<table>
<thead>
<tr>
<th>Pneumatic Loctite® DuraPump™ Fixed Ratio Systems</th>
<th>Item Number</th>
<th>Mix Ratio</th>
<th>Shot Size Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1041648</td>
<td>1:1</td>
<td></td>
<td>0.4 to 28 ml</td>
</tr>
<tr>
<td>1041643</td>
<td>2:1</td>
<td></td>
<td>0.4 to 21 ml</td>
</tr>
<tr>
<td>1041641</td>
<td>4:1</td>
<td></td>
<td>0.4 to 18 ml</td>
</tr>
<tr>
<td>1041637</td>
<td>10:1</td>
<td></td>
<td>0.4 to 15.5 ml</td>
</tr>
<tr>
<td>1041633</td>
<td>Custom*</td>
<td></td>
<td>Will vary based on ratio selected</td>
</tr>
</tbody>
</table>

For MMA Chemistry

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Mix Ratio</th>
<th>Shot Size Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1041647</td>
<td>1:1</td>
<td>0.4 to 28 ml</td>
</tr>
<tr>
<td>1041639</td>
<td>10:1</td>
<td>0.4 to 15.5 ml</td>
</tr>
<tr>
<td>1041620</td>
<td>Custom*</td>
<td>Will vary based on ratio selected</td>
</tr>
</tbody>
</table>

Programmable Loctite® DuraPump™ Fixed Ratio Systems

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Mix Ratio</th>
<th>Shot Size Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1041649</td>
<td>1:1</td>
<td>0.4 to 28 ml</td>
</tr>
<tr>
<td>1041644</td>
<td>2:1</td>
<td>0.4 to 21 ml</td>
</tr>
<tr>
<td>1041639</td>
<td>4:1</td>
<td>0.4 to 18 ml</td>
</tr>
<tr>
<td>1041638</td>
<td>10:1</td>
<td>0.4 to 15.5 ml</td>
</tr>
<tr>
<td>1041635</td>
<td>Custom*</td>
<td>Will vary based on ratio selected</td>
</tr>
</tbody>
</table>

* Custom ratios available from 1:1 up to 9:99:1.

Loctite® Integrated Semiautomatic Dispenser

Combines a controller and reservoir into a single unit. Available in 0-15 psi or 0-100 psi versions with optional low-level sensors.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Integrated Reservoir Controllers - Pressure Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1390321</td>
<td>0-100 psi with low-level sensor</td>
</tr>
<tr>
<td>1390322</td>
<td>0-15 psi with low-level sensor</td>
</tr>
</tbody>
</table>

Loctite® 300 ml Cartridge Pusher
P/N 98022

Pneumatic powered system, designed for use with a separate controller and dispense valve for automatic applications. Equipped with low level sensor.

Loctite® Stationary Applicator Valve
P/N 97113 (≤ 15,000 cP) and 97114 (≤ 80,000 cP)

Pneumatic powered dispense valve, designed for semiautomatic and robotic applications in conjunction with semiautomatic dispenser or a cartridge pusher.

For more information on our complete equipment offering, visit our equipment website at www.equipment.loctite.com or call 1.800.LOCTITE (562.8483) in the U.S. or 1.800.263.5043 in Canada to speak with a technical representative.
Loctite® Poppet Valve
P/N 986300 and 983914

Loctite® Stainless Steel Poppet Valve – P/N 982621
Designed for dispensing high viscosity structural adhesives.

Loctite® Spray Valve Digital Controller – P/N 1406023
Provides digital pressure control of both on/off timing and atomization air, for dispensing low viscosity activators.

Loctite® Spray Valve – P/N 98520
An effective solution for automatic spraying of low viscosity activators with high precision and long-term reliability.

Loctite® Mix Nozzles
Disposable, plastic nozzles conveniently attach to Loctite® Speedbonder™ dual cartridges. Adhesive is automatically mixed as it travels through the static-mix nozzle. Sold in bags of 10.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>98473</td>
<td>10</td>
<td>50 ml Square Mix Nozzle, Luer/Stepped Combo Tip, 4.5” Overall Length, 5.3 mm Diameter, 24 Elements, 1:1, 2:1, 4:1 Mix Ratios.</td>
</tr>
<tr>
<td>98454</td>
<td>10</td>
<td>50 ml Mix Nozzle, Luer Tip, 6.0” Overall Length, 6.0 mm Diameter, 21 Elements, 1:1, 2:1, 4:1 Mix Ratios.</td>
</tr>
<tr>
<td>98474</td>
<td>10</td>
<td>200/400 ml Square Mix Nozzle, Stepped Tip, 5.1” Overall Length, 7.5 mm, 24 Elements, 1:1, 2:1 Mix Ratios.</td>
</tr>
<tr>
<td>98459</td>
<td>10</td>
<td>200/400 ml Mix Nozzle, Stepped Tip, 10.8” Overall Length, 10 mm Diameter, 24 Elements, 1:1, 2:1 Mix Ratios.</td>
</tr>
<tr>
<td>98461</td>
<td>10</td>
<td>200/400 ml Mix Nozzle, Stepped Tip, Keyed, 10.8” Overall Length, 10 mm Diameter, 24 Elements, 4:1, 10:1 Mix Ratios.</td>
</tr>
<tr>
<td>1034575</td>
<td>10</td>
<td>50 ml – S Mix Nozzle, Stepped Tip, 6.2” Overall Length, 6.5 mm ID, 20 Elements, 10:1 Mix Ratio.</td>
</tr>
</tbody>
</table>

Loctite® Dispense Tips
Henkel offers a comprehensive line of Loctite® brand dispense tips, which include high precision stainless steel, tapered polyethylene and flexible polypropylene tips. Visit www.equipment.loctite.com for more details.
10th Law of Structural Engagement

**Adhesives can really help you slim down; fasteners go right to your waist.**

Fasteners limit a designer’s ability to use thinner materials of construction since most fasteners pull through thin gauge metals and plastics under loaded conditions. Adhesives can help you distribute your load, thereby allowing you to use thin materials and lowering the weight and cost of your assemblies. And you won’t even need any special diets to achieve these weight loss results!
<table>
<thead>
<tr>
<th>Loctite®</th>
<th>Structural Adhesives</th>
<th>PAGE No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loctite® 0151™</td>
<td>Hysol® Epoxy Adhesive</td>
<td>17</td>
</tr>
<tr>
<td>Loctite® 1C™</td>
<td>Hysol® Epoxy Adhesive</td>
<td>22</td>
</tr>
<tr>
<td>Loctite® 312™</td>
<td>Speedbonder™ Structural Adhesive</td>
<td>6</td>
</tr>
<tr>
<td>Loctite® 324™</td>
<td>Speedbonder™ Structural Adhesive</td>
<td>20</td>
</tr>
<tr>
<td>Loctite® 325™</td>
<td>Speedbonder™ Structural Adhesive</td>
<td>7</td>
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<tr>
<td>Loctite® 326™</td>
<td>Speedbonder™ Structural Adhesive</td>
<td>16</td>
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<tr>
<td>Loctite® 330™</td>
<td>Adhesive</td>
<td>16</td>
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<tr>
<td>Loctite® 331™</td>
<td>Structural Adhesive</td>
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</tr>
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<td>Loctite® 332™</td>
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<td>Loctite® 334™</td>
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<tr>
<td>Loctite® 392™</td>
<td>Structural Adhesive</td>
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<tr>
<td>Loctite® 608™</td>
<td>Hysol® Epoxy Adhesive</td>
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<tr>
<td>Loctite® 615™</td>
<td>Hysol® Epoxy Adhesive</td>
<td>18</td>
</tr>
<tr>
<td>Loctite® 3032™</td>
<td>Structural Adhesive</td>
<td>29</td>
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