Structural Adhesive Solutions for Composite Repair
Proven Solutions for Composite Repair

Henkel’s technical expertise is based on over 40 years of experience in aerospace applications. As a trusted partner of OEM and MRO customers, Henkel provides the optimum solution to meet the most rigorous industry requirements. Our proven technologies are listed in more than 5,000 aerospace specifications, which provides our customers with a broad portfolio of composite repair solutions.

With support from its authorized aerospace distribution network, Henkel delivers composite repair solutions for airline fleet requirements throughout the globe. Henkel offers its MRO customers products that meet major OEM qualifications in many ready-to-use size configurations.

Henkel offers adhesive solutions for a variety of composite repair requirements.

**Small Repair Applications**
Industry standard solutions for composite repairs.

**Out-of-Autoclave Applications**
Leading film adhesive composite repair solutions.

**Specialty Solutions**

**Surfacing Film and Lightning Strike Repairs**
Superior new technologies for composite repair requirements.
Authorized Aerospace Distributor Partners

Henkel maintains an AS 9100 registered Quality Management System and audits its distributor partners to this standard. All authorized distributors maintain an AS 9100 registration, which ensures warranty flow down throughout the value chain. As a result, Henkel’s composite repair solutions are readily available from our global network of authorized distributor partners. For a current list of authorized distributors, please visit the following link: www.henkel.com/aerospace-distributor

Ready-to-use Packaging Solutions

Barrier Cartridge Kit

Package Description:
- Improvable plastic dispensing system
- Pre-packaged part A and part B in system separated by foil barrier
- Pre-measured 2 component system ensures full cure and product performance after mixing
- Available in 5 oz and 6 oz sizes

Package Use:
- Item material according to manufacturer’s instructions in the original packaging from manufacturer
- For refrigerated materials, thaw materials to room temperature (72 °F ± 5 °F) prior to use.
- Remove kit from packaging and mix according to the instructions provided.
- The total number of mixing strokes should be accomplished within the allowance for time noted on instructions.
- Install kit in manual or pneumatic gun for extrusion of mixed material.
- Dispose of properly.

Injection Cartridge Kit

Package Description:
- Improvable plastic dispensing system
- Pre-packaged part A in tube and part B in rod
- Pre-measured 2 component system ensures full cure and product performance after mixing
- Available in 2.5 oz and 6 oz sizes

Package Use:
- Item material according to manufacturer’s instructions in original packaging from manufacturer
- For refrigerated materials, thaw materials to room temperature (72 °F ± 5 °F) before use.
- Remove kit from packaging and mix according to the instructions provided.
- For refrigerated materials, thaw materials to room temperature (72 °F ± 5 °F) prior to use.
- Store material according to manufacturer's instructions in the original packaging from manufacturer.
- Available in several sizes.
- Pre-measured 2 component system ensures full cure and product performance after mixing.
- Pre-packaged part A and part B system separated by a clip divider.
- Disposable plastic dispensing system.
- Dispose of properly.

Clip Pack

Package Description:
- Pre-packaged part A and part B system separated by a clip divider
- Pre-measured 2 component system ensures full cure and product performance after mixing.
- Available in 25 gram and 50 gram sizes

Package Use:
- Store material according to manufacturer’s instructions in original packaging from manufacturer.
- For refrigerated materials, thaw materials to room temperature (72 °F ± 5 °F) before use.
- Store material according to manufacturer's instructions in original packaging from manufacturer.
- Available in 50 ml, 200 ml and 400 ml sizes.
- Pre-measured 2 component system ensures full cure and product performance after mixing.
- Pre-packaged part A and part B in dual cartridge system.
- Disposable plastic dispensing system.
- Dispose of properly.

Pudding Cups

Package Description:
- Pre-packaged part A and part B system provided in separate containers
- Pre-measured 2 component system ensures full cure and product performance after mixing.
- Available in various sizes

Package Use:
- Store material according to manufacturer’s instructions in original packaging from manufacturer.
- For refrigerated materials, thaw materials to room temperature (72 °F ± 5 °F) prior to use.
- Remove kit from packaging, empty part A into part B and fold the materials together with a mix handle.
- To ensure full kit performance, use the entire contents of part A with part B.
- Dispose of properly.

Dual Cartridge Kit

Package Description:
- Disposable plastic dispensing system
- Pre-packaged part A and part B in dual cartridge system
- Pre-measured 2 component system ensures full cure and product performance after mixing
- Available in 100 ml, 200 ml and 300 ml sizes

Package Use:
- Store material according to manufacturer’s instructions in original packaging from manufacturer.
- For refrigerated materials, thaw materials to room temperature (72 °F ± 5 °F) prior to use.
- Install kit in manual or pneumatic gun with the static mix tip on the dual cartridge for extrusion of mixed material.
- Dispose of a small amount of material from the static mix tip prior to use.
- Dispose of properly.
## Composites Repair Portfolio

### Repair Type
- Laminating and Melt-Lap Up
- High Service Temperature
- Out-of-Autoclave

### Technology

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<thead>
<tr>
<th>Technology</th>
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### Color (A / B / Mixed)
- Light Blue / Light Blue
- Light Beige / Blue / Green-Purple
- Light Beige / Blue / Green-Purple
- Light Beige / Blue / Green-Purple

### Consistency
- Low Viscosity
- 35 Poise
- 162 Poise

### Key Features
- Long pot life
- Good co-cure capability with composites
- Excellent long-term mechanical strength
- Excellent peel and low temperature (–67°F / –55°C) properties

### Out-of-Autoclave
- Film Adhesive

### Specialty Repair – Surfacing Fillets and Lightning Strike
- Film Adhesive

### Service Temperature
- 300 °F (150 °C)
- 400 °F (204 °C)
- 500 °F (260 °C)

### Pot Life (Gelling Time)
- 45 days
- 45 days
- 45 days

### Specialty Features
- Excellent elevated temperature resistance
- Good co-cure capability with composites
- Long out-time makes it ideal for repairs
- Qualified by many OEMs

### Specialties
- Film Adhesive
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### Additional Information
- LOCTITE EA 9695 AERO
- LOCTITE EA 7000 AERO
- LOCTITE EA 9845SF AERO
- LOCTITE EA 9845LSC AERO

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Meet the Next Generation...
Benzoxazine Resins

Henkel launched a full product portfolio for the aerospace industry based on benzoxazine resin technology, offering advantages to commonly used epoxies, phenolics and BMI’s. Benefits are across the entire value chain, including: weight savings, improved health and safety, storage and shipment at room temperature, less waste due to less spoilage and minimal shrinkage.

LOCTITE® Benzoxazines are suitable for most fabrication methods and processes, including: Hand lay-up, ATL, AFP, autoclave, autoclave curing, RTM, VARTM, RFI, honeycomb sandwich co-curing and secondary bonding.

For more information on LOCTITE® Benzoxazines portfolio, please consult “Benzoxazine Resin Technology” brochure and your Henkel sales representative.

Main improvements
› Improved performance over epoxy, phenolic and BMI
› Storage and shipping at room temperature
› Reduced waste due to less spoilage
› Improved health and safety
› Lighter weight allows lower fuel consumption

Advantages To Comparable Technologies

<table>
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<tr>
<th>LOCTITE® Benzoxazine vs.</th>
<th>Epoxy</th>
<th>Phenolic</th>
<th>BMI</th>
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<tr>
<td></td>
<td>Lower cure shrinkage and cure exotherm</td>
<td>No microcracking</td>
<td>Lower cure temperature and shorter cure cycle</td>
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<td>Improved hot/wet performance</td>
<td>Improved durability</td>
<td>Lower cost</td>
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<td></td>
<td>Inherent Flame, Smoke and Toxicity characteristics</td>
<td>No water generated during cure</td>
<td>Higher toughness</td>
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