

Fast Set™ Epoxy

Description

8332 is a quick-set, two-part epoxy adhesive with a five-minute working life. Bonded parts only need to be held together for eight to ten minutes before they sufficient set for handling. It offers excellent adhesion to a wide range of materials that are difficult to bond with, including glass, fiberglass, concrete, ceramics, woods, and most metals and plastics.

This is a general purpose adhesive suitable for household, industrial and manufacturing applications. It is available in convenient dual cartridges, and is suitable for automated dispensing applications.

Features and Benefits

- *1:1 mix ratio*
- *Tensile strength of 5 000 psi*
- *Set time: 8 to 10 minutes*
- *Cure time: 5 hours at room temperature or 15 minutes at 65 °C*
- *Low shrinkage*
- *Provides strong electrical insulation*
- *Protects against thermal and mechanical shocks*
- *Strong resistance to humidity, salt water, acids, bases, and aliphatic hydrocarbons*

Usage Parameters

| Properties | Value |
|--------------------------------|-------------|
| Working life @22 °C [72 °F] | 3 to 5 min |
| Set time | 8 to 10 min |
| Functional Cure @22 °C [72 °F] | 3 h |
| Shelf life @22 °C [72 °F] | ≥3 y |
| Full cure @22 °C [72 °F] | 5 h |
| Full cure @65 °C [149 °F] | 15 min |

Temperature Ranges

| Properties | Value |
|------------------------------|-------------------------------|
| Constant service temperature | -40 to 150 °C [-40 to 302 °F] |
| Storage temperature | 16 to 27 °C [61 to 81 °F] |

Cured Properties

| Physical Properties | Method | Value ^{a)} |
|--------------------------------------|-------------------|---|
| Color | Visual | Light yellow |
| Density @25 °C [77 °F] | ASTM D 1475 | 1.14 g/mL |
| Hardness | Shore D Durometer | 82D |
| Tensile strength | ASTM D 638 | 34 N/mm ² [5 000 lb/in ²] |
| Elongation % | ASTM D 638 | 1.2% |
| Compressive strength | ASTM D 695 | 63 N/mm ² [9 100 lb/in ²] |
| Lap shear strength (stainless steel) | ASTM D 1002 | 4.9 N/mm ² [710 lb/in ²] |
| Lap shear strength (aluminum) | ASTM D 1002 | 5.9 N/mm ² [860 lb/in ²] |
| Lap shear strength (copper) | ASTM D 1002 | 7.0 N/mm ² [1 000 lb/in ²] |
| Lap shear strength (brass) | ASTM D 1002 | 6.2 N/mm ² [890 lb/in ²] |
| Lap shear strength (polycarbonate) | ASTM D 1002 | 1.7 N/mm ² [250 lb/in ²] |
| Lap shear strength (ABS) | ASTM D 1002 | 1.8 N/mm ² [260 lb/in ²] |

Note: Specifications are for epoxy samples cured at 65 °C for 15 min and conditioned at ambient temperature and humidity.

a) N/mm² = mPa; lb/in² = psi

Cured Properties

| Electrical Properties | Method | Value |
|--|-----------------------------|---|
| Breakdown voltage @2.3 mm | ASTM D 149 | 23 300 V [23.3 kV] |
| Dielectric strength @2.3 mm | ASTM D 149 | 252 V/mil [9.94 kV/mm] |
| Breakdown voltage @3.175 mm [1/8"] | Reference fit ^{a)} | 27 100 V [27.1 kV] |
| Dielectric strength @3.175 mm [1/8"] | Reference fit ^{a)} | 217 V/mil [14.6 kV/mm] |
| Volume resistivity | ASTM D 257 | $1.7 \times 10^{14} \Omega \cdot \text{cm}$ |
| Volume conductivity | ASTM D 257 | $5.9 \times 10^{-15} \text{ S/cm}$ |
| Thermal Properties | Method | Value |
| Glass transition temperature (T_g) | ASTM E 3418 | 64 °C [147 °F] |
| CTE ^{b)} prior T_g | ASTM E 831 | 76 ppm/°C [169 ppm/°F] |
| after T_g | ASTM E 831 | 175 ppm/°C [347 ppm/°F] |

Note: Specifications are for epoxy samples cured at 65 °C for 15 min and conditioned at ambient temperature and humidity.

- a)** To allow comparison between products, the dielectric strength was recalculated with the Tauscher equation fitted to 5 experimental values and extrapolated to a standard thickness of 1/8" (3.175 mm).
b) Coefficient of Thermal Expansion (CTE) units are in ppm/°C = in/in/°C × 10⁻⁶ = unit/unit/°C × 10⁻⁶

Uncured Properties

| Physical Properties | Mixture (A:B) |
|---------------------|---------------|
| Color | Clear |
| Density | 1.14 g/mL |
| Mix ratio by volume | 1:1 |
| Mix ratio by weight | 1:1 |

| Physical Properties | Part A | Part B |
|--------------------------|---------------------|---------------------|
| Color | Clear yellow | Clear yellow |
| Viscosity @25 °C [77 °F] | 12 000 cP [12 Pa·s] | 14 000 cP [14 Pa·s] |
| Density | 1.16 g/mL | 1.13 g/mL |
| Odor | Mild | Mercaptan-like |

Compatibility

Adhesion—8332 epoxy adheres to most plastics and metals used to house printed circuit assemblies; however, it is not compatible with contaminants like water, oil, or greasy flux residues, which may affect adhesion. In case of contamination, first clean the surface to be coated with MG Chemicals 824 Isopropyl Alcohol.

For substrate substances with weak adhesion strengths, surface preparation such as sanding or pre-coating with a suitable primer may improve adhesion.

Chemical resistance—Once cured, the epoxy adhesive is inert under normal conditions. It will resist water and salt exposure.

It is expected to resist short term exposures to fuels or similar non-polar organic solvents, but it is not suitable for prolonged exposures. Avoid use with strong acids, strong bases, or strong oxidizers.

Storage

Store between 16 to 27 °C [61 to 81 °F] in a dry area, away from sunlight. Some of the components are sensitive to air, always recap firmly when not in use to maximize shelf life.

Substrate Adhesion (In Decreasing Order)

| Physical Properties | Adhesion | |
|---------------------|--|---------------|
| Copper/brass | Stronger | |
| Aluminum |  | |
| Steel | | |
| Fiberglass | | |
| Wood | | |
| Paper, Fiber | | |
| Glass | | |
| Rubber | | |
| Polycarbonate | | |
| Acrylic | | Weaker |
| Polypropylene | | Does not bond |

Health and Safety

Please see the 8332 Safety Data Sheet (SDS) parts A and B for further details on transportation, storage, handling, safety guidelines, and regulatory compliance.

Application Instructions

For best results, follow the procedure below.

Syringe:

1. Twist and remove the cap from the syringe. Do not discard cap.
2. Dispense a small amount to ensure even flow of both parts.
3. (Optional) Attach a static mixer.
 - a. Dispense and discard 3 to 5 mL of the product to ensure a homogeneous mixture.
 - b. After use, dispose of static mixer.
4. Without a static mixer, dispense material on a mixing surface or container, and thoroughly mix parts A and B together.
5. To stop the flow, pull back on the plunger.
6. Clean nozzle to prevent contamination and material buildup.
7. Replace the cap on the syringe.

Cure Instructions

Room temperature cure:

- Let cure at room temperature for 5 h.

Heat cure:

- Put in oven at 65 °C [149 °F] for 15 min.

Dispensing Accessories

Consult the table below for appropriate accessory selection. See the [Application Guide](#) for instructions on using the dispensing accessories.

| Cat. No. | Dispensing Gun | Static Mixer |
|-----------|----------------|--------------|
| 8332-25ML | N/A | 8MT-25 |

Packaging and Supporting Products

| Cat. No. | Packaging | Net Volume | Packaged Weight |
|-----------|--------------|--------------------|-----------------|
| 8332-25ML | Dual syringe | 25 mL [0.84 fl oz] | 83 g [0.18 lb] |

Technical Support

Please contact us regarding any questions, suggestions for improvements, or problems with this product. Application notes, instructions and FAQs are located at www.mgchemicals.com.

Email: support@mgchemicals.com

Phone: +(1) 800-340-0772 (Canada, Mexico & USA)
+(1) 905-331-1396 (International)
+(44) 1663 362888 (UK & Europe)

Fax: +(1) 905-331-2862 or +(1) 800-340-0773

Mailing address: Manufacturing & Support
1210 Corporate Drive
Burlington, Ontario, Canada
L7L 5R6

Head Office
9347-193rd Street
Surrey, British Columbia, Canada
V4N 4E7

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