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 5000 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/mm^2 = mPa; lb/in^2 = 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	1.7×10^{14} Ω·cm
Volume conductivity	ASTM D 257	5.9×10^{-15} S/cm
Thermal Properties	**Method**	**Value**
Glass transition temperature (T_g)	ASTM E 3418	64 °C [147 °F]
CTE [b)] prior T_g after T_g	ASTM E 831 ASTM E 831	76 ppm/°C [169 ppm/°F] 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 Tautscher 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
8332-50ML	N/A	8MT-50

Packaging and Supporting Products

Cat. No.	Packaging	Net Volume
8332-25ML	Dual syringe	25 mL [0.84 fl oz]
8332-50ML	Dual cartridge	46 mL [1.55 fl oz]

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

Disclaimer

This information is believed to be accurate. It is intended for professional end users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.