Fast Set Epoxy
Super Strength
8332 Technical Data Sheet

Description

The 8332 *Fast Set Epoxy* is an adhesive that combines quick set time, high strength, and ease of use. The adhesive bonds well to several plastics, ceramics, woods, fiberglass, glass, concrete, and most metals. Its convenient 1-to-1 mix ratio means it is perfectly suitable for both dual syringe and automated 2-part dispenser applications.

The 8332 is adaptable to many uses and conditions. At mixing, the product offers a low viscosity that wets and conforms to many types of bonding surfaces. Generally, the glued parts only need to be held together for about 8–10 minutes to be sufficiently set to handle. The bonds that are formed are electrically insulating and will generally resists to both thermal and mechanical shocks. As well, the bond offers high chemical resistance to water, salts, acids, bases, and even some organic solvents.

Applications & Usages

The 8332 glue has many uses in the production, repair for many operating conditions.

Benefits and Features

- **Easy 1:1 mix ratio**
- **Set time of only 8 to 10 minutes**
- **Heat cure in only 15 minutes at 65 °C**—safe for heat sensitive components
- **Very long shelf life of two years**—even when stored at room temperature
- **Strong water and chemical resistance** to brine, acids, bases, and aliphatic hydrocarbons
- **Excellent adhesion to most electronic substrates**
- **Solvent free**
- **Gap filler**
- **Additional static mixers 8MT-25 sold separately**

ENVIRONMENT
✓ RoHS
✓ REACH compliant

Usage Parameters

Properties	*Value*
Work Life [a)]	3–5 min
Set Time	8–10 min
Shelf Life	2 y
Functional Cure @25 °C [77 °F]	3 h
Full Cure @25 °C [77 °F]	5 h
Full Cure @65 °C [149 °F]	15 min

a) Work life value assume 5 g and room temperature unless stated otherwise.

Temperature Ranges

Properties	*Value*
Constant Service Temperature	-40 to 150 °C [-40 to 302 °F]
Intermittent Temp. Extrema [b)]	-50 to 175 °C [-58 to 347 °F]
Storage Temperature of Unmixed Parts	16 to 27 °C [60 to 80 °F]

b) Short-term exposure temperature toleration limit—not recommended as a sustained or repeated operation condition.

Properties of Cured 8332

Physical Properties	***Method***	***Value*** [a]	
Color	Visual	Light Amber	
Density @26 °C [79 °F]		1.14 g/cm^3	
Hardness	Shore D durometer	82D	
Tensile Strength	ASTM D 638	34 N/mm^2	[5 000 lb/in^2]
Elongation	"	1.23%	
Compression Strength	ASTM D 695	63 N/mm^2	[9 100 lb/in^2]
Lap Shear Strength (Stainless Steel Grade 2)	ASTM D 1002	14.8 N/mm^2	[2 100 lb/in^2]

Electrical Properties [b]	***Method***	***Value***
Breakdown Voltage @2.343 mm	ASTM D 149	23.3 kV
Dielectric Strength	"	9.94 kV/mm [252 V/mil]
Breakdown Voltage @3.175 mm [1/8”]	Reference fit [c]	27.1 kV
Dielectric Strength	"	14.6 kV/mm [217 V/mil]
Volume Resistivity	ASTM D 257	1.7 x 10^{14} Ω·cm

Thermal Properties	***Method***	***Value***
Glass Transition Temperature (T_g)	ASTM E 831	64 °C [147 °F]
CTE [d] prior T_g	ASTM E 831	76 ppm/°C
CTE [d] after T_g	ASTM E 831	175 ppm/°C

a) N/mm^2 = mPa; lb/in^2 = psi
b) The uncured epoxy mixture does not conduct electricity well and can have high resistance. To attain stated resistivity, ensure that the mix ratio is followed and that the product is fully cured by heat curing. Room temperature cures may give higher resistivity.
c) To allow comparison between products, the Tautscher equation was fitted to 5 experimental dielectric strengths and extrapolated to a standard reference thickness of 1/8” (3.175 mm).
d) Coefficient of Thermal Expansion (CTE) units are in ppm/°C = in/in/°C × 10^{-6} = unit/unit/°C × 10^{-6}

Properties of Uncured 8332

Physical Properties	*Mixture (1A:1B)*
Color	Clear
Density [a]	1.14 g/mL
Mix Ratio by volume (A:B)	1:1
Mix Ratio by weight (A:B)	1:1
Solids Content (w/w)	100%

Physical Properties	*Part A*	*Part B*
Color	Clear	Yellowish
Density	1.16 g/mL	1.13 g/mL
Viscosity	12 000 cP	14 000 cP
Flash Point	>250 °C [482 °F]	>93 °C [200 °F]

a) Calculated value based on measures densities of each part

Compatibility

Adhesion—As seen in the substrate adhesion table, the 8332 glue bonds to a wide variety of materials; however, it is not compatible with contaminants like water, oil, and greasy flux residues that may affect adhesion. If contamination is present, clean the pieces to be glued with solvents such as MG Chemicals 4050 Safety Wash, 406B Superwash, or 824 Isopropyl Alcohol.

Substrate Adhesion in Decreasing Order

Physical Properties	*Adhesion*
Steel	Stronger
Aluminum	
Fiberglass	
Wood	
Paper, Fiber	
Glass	
Rubber	
Polycarbonate	
Acrylic	
Polypropylene [a]	Weaker

a) Does not bond to polypropylene

Storage

Store between 16 and 27 °C [60 and 80 °F] in dry area away from sunlight. Prolonged storage or storage at or near freezing temperatures can result in crystallization.

> **Tip!** If stored at low temperatures, let the epoxy come back to room temperature before use. The lower the temperature, the harder the mixture will be to dispense and mix.

If crystallization occurs, reconstitute the component to its original state by temporarily warming it to 50 to 60 °C [122 to 140 °F].

Health, Safety, and Environmental Awareness

Please see the 8332 **Safety Data Sheet** (SDS) parts A and B for more details on transportation, storage, handling and other security guidelines.

Health and Safety: The 8332 parts can ignite if the liquid is both heated and exposed to flames or sparks.

Wear safety glasses or goggles and disposable polyvinyl chloride, neoprene, or nitrile gloves while handling liquids. Part B in particular causes skin burns and may cause sensitization if exposed over a long period of time. The epoxy will not wash off once cured: wear protective work clothing. Wash hands thoroughly after use or if skin contact occurs. Do not ingest.

Use in well-ventilated area since vapors may cause irritation of the respiratory tract and cause respiratory sensitization in susceptible individuals.

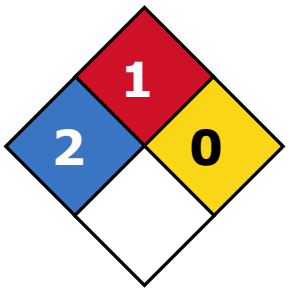
The cured epoxy resin presents no known hazard.

Part A

HMIS® RATING

HEALTH:	* **2**
FLAMMABILITY:	**1**
PHYSICAL HAZARD:	**0**
PERSONAL PROTECTION:	

NFPA® 704 CODES



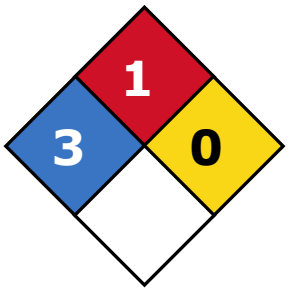
Approximate HMIS and NFPA Risk Ratings Legend:
0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

Part B

HMIS® RATING

HEALTH:	* 3
FLAMMABILITY:	1
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:
0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

Application Instructions

Follow the procedure below for best results.

To prepare a 1:1 (A:B) epoxy mixture by weight or volume

1. Remove cap or cover.
2. Dispense the material onto a mixing pad and thoroughly mix the parts together with a stir stick until homogenous.
3. Apply with an appropriate sized stick to the application area.

ATTENTION! If the parts have clumped (crystallized), pre-heat at 50 °C [122 °F] until fully re-liquefied. Let cool to room temperature before use.

NOTE: Remember to recap the syringe or container promptly after use.

TIP: You may preheat part A and part B to increase the flow and improve air release.

To heat cure the 8332 epoxy

Put in oven at 65 °C [149 °F] for 15 minutes or above.

TIP: Hair dryers are normally rated not to exceed 60 °C, so they can generally be used to accelerate the cure.

You can cure the epoxy faster by using higher temperatures of up to 100 °C [302 °F].

ATTENTION: Keep the curing temperature well below temperature limit of heat sensitive components that may be present. As a guideline, remember that commercial grade devices normally can be safely operated up to 70 °C, industrial grade up to 85 °C, and military grade up to 175 °C.

Heat guns can easily exceed the temperature limits for your assembly: they should not be used.

To room temperature cure the 8332 epoxy

Let stand for 5 hours.

TIP: While the product can be cured at room temperature, the best conductivity is achieved with the application of heat.

Packaging and Supporting Products

Cat. No.	*Packaging*	*Net Volume*	*Net Weight*	*Packaging Weight*
8332-25ML	Dual Syringe	25 mL 0.84 fl oz	2.86 g 1.01 oz	0.8 kg [a] 1.8 lb [a]

a) Case pack of 10

Technical Support

Contact us regarding any questions, improvement suggestions, 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

Warranty

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