

3M™ Scotch-Weld™ Epoxy Adhesive DP-460EG

Product Description

3M™ Scotch-Weld™ Epoxy Adhesive DP-460EG is designed to have lower outgassing and lower ionics than 3M™ Scotch-Weld™ Epoxy Adhesive DP-460. Laboratory testing has shown that 3M™ Scotch-Weld™ Epoxy Adhesive DP-460EG's curing and adhesive performance to be comparable to 3M™ Scotch-Weld™ Epoxy Adhesive DP-460.

Application Ideas

- Hard Disk Drive Assembly
- Spindle Motor Assembly
- Magnet Bonding
- E-Block Assembly
- Bearing Cartridge Assembly
- Potting
- Rigidizing

Key Features

- Curing and bonding performance comparable to 3M™ Scotch-Weld™ Epoxy Adhesive DP-460.
- Total outgassing < 1000 µg/g (via GC/MS, 85°C for 3 hours).
- Siloxane outgassing ≤ 5 µg/g (via GC/MS, 85°C for 3 hours).
- Lower chloride ion content than standard epoxies.

Typical Physical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

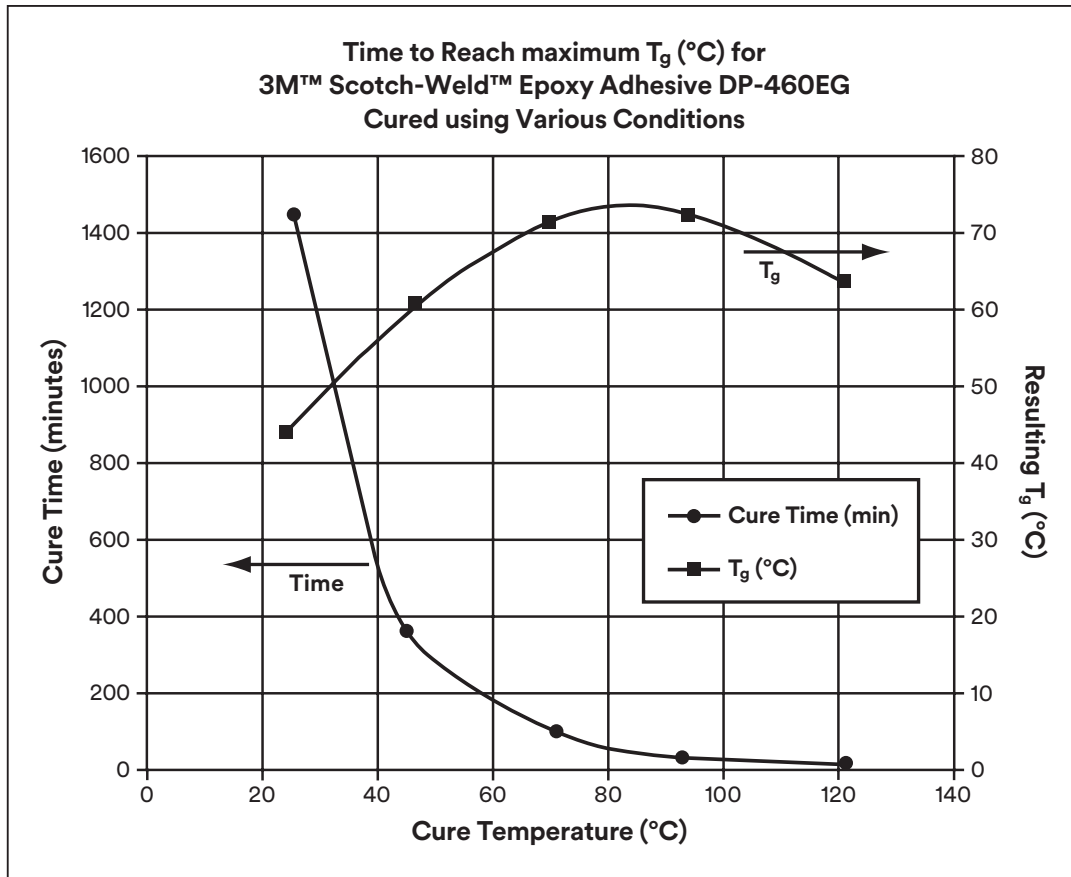
3M™ Scotch-Weld™ Epoxy Adhesive DP460EG		
Viscosity (at 72°F [23°C])	Base Accelerator Mixed	25,000 - 45,000 cps 8,000 - 14,000 cps 15,000 - 25,000 cps
Base Resin	Base Accelerator	Epoxy Amine
Color	Base Accelerator	White Amber
Net Weight (lb/gallon)	Base Accelerator	9.4 9.0
Mix Ratio (B:A)	Volume Weight	2:1 2:0 : 0.96
Worklife (72°F [23°C])		110 minutes
Thermal Conductivity, (btu-ft./sq.ft.-hr.°F)		0.104 @ 45°C
Thermal Coefficient of Expansion, (in./in./°C)		59 × 10 ⁻⁶ (-50°C to 30°C) 159 × 10 ⁻⁶ (50°C to 110°C)
Dielectric Constant, (1 KHZ @ 23°C)		4.7
Dielectric Strength, (volts/mil.)		510 (43 mil)

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Curing

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This adhesive will cure in 24 hours at room temperature. Heating will accelerate the cure and can result in a higher T_g than room temperature curing yields. Curing data is shown in the figure below.



Note: If the adhesive has become grainy or lumpy in appearance when dispensed, this may be due to crystallization of the adhesive. This can be corrected by heating the adhesive in the syringe to 120°F (49°C) for 30 minutes, then allowing the adhesive to cool before dispensing.

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Typical Performance Characteristics¹

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Shear and Peel Strength vs. Cure Temperature / Time

	72°F (23°C) 24 hours	120°F (49°C) 270 minutes	160°F (71°C) 90 minutes	200°F (93°C) 30 minutes	250°F (121°C) 10 minutes
Overlap Shear ² (lbf/in ²)	> 5000	> 5000	> 5500	> 5500	> 5500
T-Peel ³ (lbf/in)	60 ⁴	59 ⁴	43 ⁴	39 ⁵	45 ⁵

¹See Technical Data Sheet 3M™ Scotch-Weld™ Epoxy Adhesive DP-460 for additional typical performance characteristics.

²0.060 inch thick, etched aluminum pulled at 0.10 inches/minute. Tested in accordance with ASTM D-1002-72 test method.

³0.032 inch thick, anodized aluminum pulled at 20 inches/minute. Tested in accordance with ASTM D1876-61T test method.

⁴Cohesive failure mode.

⁵Adhesive failure mode.

Storage and Shelf Life

Storage: Store 3M™ Scotch-Weld™ Epoxy Adhesive DP-460EG at 60-80°F (15-27°C) or refrigerate for maximum shelf life.

Shelf Life: 3M™ Scotch-Weld™ Epoxy Adhesive DP-460EG has a shelf life of 15 months when stored in its original container.

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Safety Data Sheet: Consult Safety Data Sheet before use.

Regulatory: For regulatory information about this product, contact your 3M representative.

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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