3M

Scotch-Weld™

Epoxy Adhesive

DP-460 EG

Technical Data **October, 1999**

Product Description

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

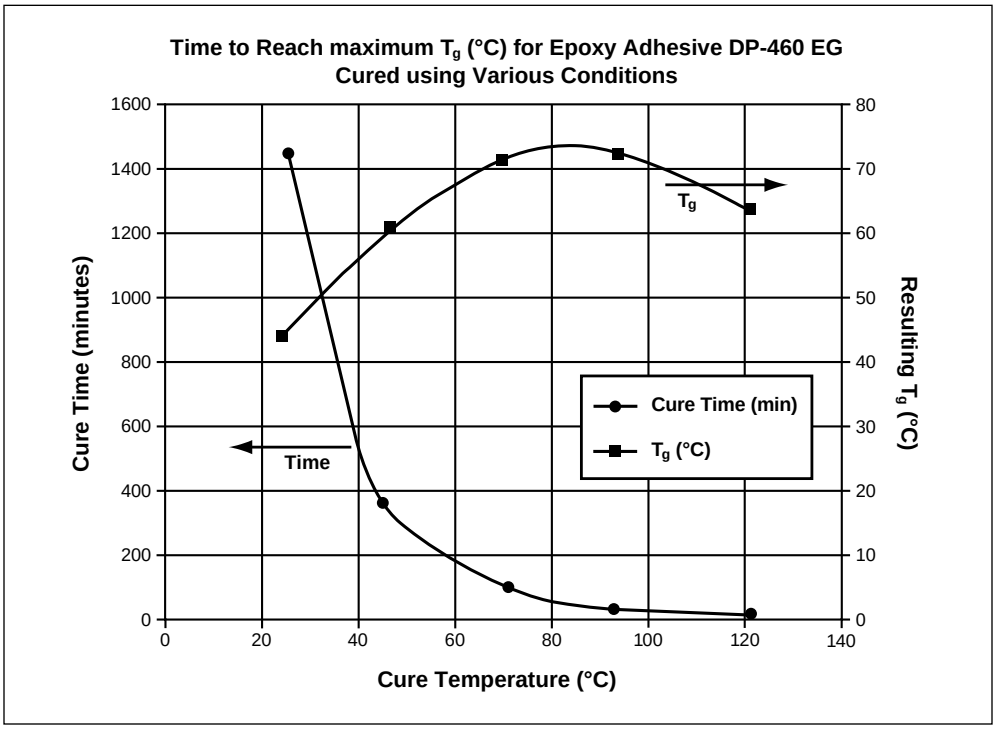
Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Product		**Epoxy Adhesive DP-460 EG**
Viscosity (at 72°F [23°C])	**Base** **Accelerator** **Mixed**	25,000 - 45,000 cps 10,000 - 15,000 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])		60 minutes

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.



Typical Performance Characteristics[1]

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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) (ASTM D-1002-72)	> 5000	> 5000	> 5500	> 5500	> 5500
T-Peel[3] (lbf/in) (ASTM D1876-61T)	60[4]	59[4]	43[4]	39[5]	45[5]

[1] - See Technical Data Sheet Scotch-Weld Epoxy Adhesive DP-460 for additional typical performance characteristics.

[2] - 0.060 inch thick, etched aluminum pulled at 0.10 inches/minute.

[3] - 0.032 inch thick, anodized aluminum pulled at 20 inches/minute.

[4] - Cohesive failure mode.

[5] - Adhesive failure mode.

Storage and Shelf Life

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

Shelf Life: Epoxy Adhesive DP-460 EG has a shelf life of 12 months in its original container.

Scotch-Weld™
Epoxy Adhesive
DP-460 EG

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for Health and Safety Information before using this product.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550. Address correspondence to: 3M Adhesives Division, 3M Center, Building 220-8E-05, St. Paul, MN 55144-1000. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 5-270-2180.

Important Notice

3M MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. Please remember that many factors can affect the use and performance of a 3M Adhesives Division product in a particular application. The materials to be bonded with the product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

Limitation of Remedies and Liability

If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including, but not limited to, contract, negligence, warranty, or strict liability.

ISO 9002

This Adhesives Division product was manufactured under a 3M quality system registered to ISO 9002 standards.

For Additional Product Safety and Health Information, See Material Safety Data Sheet, or call:

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Adhesives Division

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