

# 3M™ Scotch-Weld™ Epoxy Adhesive DP-4XL EG

## Product Description

3M™ Scotch-Weld™ Epoxy Adhesive DP-4XL EG is an electronic grade, high performance, two-part, toughened epoxy adhesive offering outstanding shear and peel adhesion, and very high levels of durability similar to 3M™ Scotch-Weld™ Epoxy Adhesive DP-460 EG. Scotch-Weld DP-4XL EG has an extra long worklife to allow for bonding large parts, longer dispensing time after mixing or assembling large batches of parts prior to heat curing. Scotch-Weld DP-4XL EG will achieve handling strength after 24 hours at room temperature and will finish curing at room temperature in 7 days. Curing can be completed more quickly at elevated temperatures as shown in the attached figure.

## Application Ideas

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

## Key Features

- High shear and peel strength
- 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.

Product		3M™ Scotch-Weld™ Epoxy Adhesive DP-4XL 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 8.7
Mix Ratio (B:A)	Volume Weight	2:1 2:0 : 0.89
Worklife (72°F [23°C])		5-6 Hours

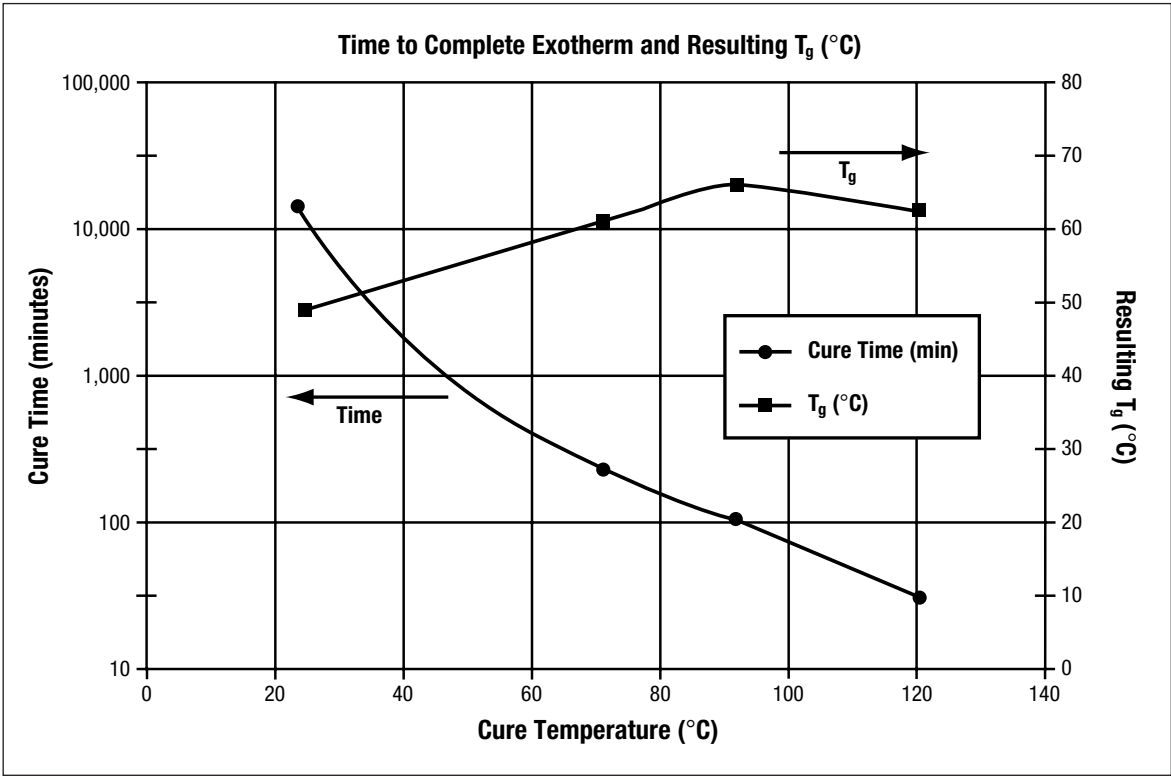


# 3M™ Scotch-Weld™ DP-4XL EG

## Curing

**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 DP-4XL EG cures in 7 days at room temperature. Heat accelerates cure and results in a higher  $T_g$  than room temperature cure. See 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.

# 3M™ Scotch-Weld™ DP-4XL EG

## Typical Performance Characteristics<sup>1</sup>

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

### Shear and Peel Strength as a Function of Different Curing Conditions.

	72°F (23°C) 4 weeks	160°F (71°C) 240 minutes	200°F (93°C) 120 minutes	250°F (121°C) 30 minutes
<b>Overlap Shear<sup>2</sup></b> (lbf/in <sup>2</sup> ) (ASTM D-1002-72)	5000	> 5300	> 5300	> 5300
<b>T-Peel<sup>3</sup></b> (lbf/in) (ASTM D1876-61T)	5	31 <sup>4</sup>	26 <sup>4</sup>	30 <sup>4</sup>

<sup>1</sup> - See Technical Data Sheet 3M™ Scotch-Weld™ Epoxy Adhesive DP-460 for electrical and environmental performance characteristics.

<sup>2</sup> - 0.060 inch thick, etched aluminum pulled at 0.1 inches/minute.

<sup>3</sup> - 0.032 inch thick, etched aluminum pulled at 20 inches/minute.

<sup>4</sup> - Adhesive failure mode is observed under these conditions, heating for shorter times will give cohesive failure and higher values.

## Storage and Shelf Life

**Storage:** Store 3M™ Scotch-Weld™ Epoxy Adhesive DP-4XL EG at 60-80°F (15-27°C) or refrigerate for maximum shelf life.

**Shelf Life:** 3M™ Scotch-Weld™ Epoxy Adhesive DP-4XL EG has a shelf life of 15 months in its original container.

# 3M™ Scotch-Weld™ Epoxy Adhesive DP-4XL EG

## Certification/Recognition

**MSDS:** Refer to Product Label and Material Safety Data Sheet for Health and Safety Information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

**TSCA:** This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements.

**RoHs Complaint/REACH Compliant:** This product complies with the European Union's "Restriction of Hazardous Substances" (RoHs) initiative and with European REACH regulations 2002/95/EC and 2005/618/EC.

## For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634. Address correspondence to: 3M, Electronics Markets Materials Division, 3M Center, Building 225-3S-06, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

## Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

## Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture at the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



### Electronics Markets Materials Division

3M Center, Building 225-3S-06  
St. Paul, MN 55144-1000  
1-800-251-8634 phone  
651-778-4244 fax  
[www.3M.com/electronics](http://www.3M.com/electronics)

3M and Scotch-Weld are trademarks  
of 3M Company.  
Please recycle. Printed in U.S.A.  
©3M 2011. All rights reserved.  
78-6900-9815-3



# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[3M:](#)

[DP-4XL-EG](#)