

PELCO 2-Hour Epoxy Mount Kit

Product No. 813-500

DESCRIPTION: 2:1 FAST CURING SYSTEM

Low viscosity water clear epoxy with an aliphatic polyamine hardener blend. Fast curing system designed for optical clarity, hardness and impact resistance. Easy to use 2:1 mix ratio by volume. No VOC's, 100% solids.

USES:

This 2:1 two-part epoxy system is designed for embedment of samples for metallographic polishing. It is a low viscosity, low exotherm and low shrinkage system that is ideal for embedment of printed circuit boards or other samples where flow into small features is required. It can be used in conjunction with vacuum impregnation to assure complete penetration. The cured resin is extremely hard, optically clear, and has high bond strength. These combine to make for excellent polish and edge retention of the sample.

PHYSICAL PROPERTIES OF 813-501-502 RESIN/813-504-505 HARDENER (neat):

| | |
|-----------------------------------|------------------------------|
| Mixed Viscosity @ 77° F, cps | 860 |
| Weight per Active H(813-504-505) | 94 |
| Color (Hardener) | 1 |
| Mix Ratio, Parts Per 100 of Resin | 43 by weight (2:1 by volume) |
| Gel Time (150 grams) | 10 minutes |
| Thin Film Set Time, Hours | 1 |

CURED PROPERTIES:

Cure schedule:

| |
|---|
| Gel Time: (150gm) 6-9 minutes @ 77°F |
| Initial Thin Film Cure Time: 2 hours @ 77°F |

| | |
|---------------------------|--------|
| HDT (ASTM D648 - 264) ° F | 147 |
| Shore D Hardness | 80 |
| Flexural Strength, psi | 15,870 |
| Flexural Modulus, psi | - |
| Tensile Strength, psi | 9,500 |
| Tensile Modulus, psi | - |
| Elongation % | 3.5 |

MEASURING

Use 2:1 by volume or 100:43 parts by weight of resin to hardener.

Filling a standard 1-1/4" diameter mold 1" deep requires approximately 0.7 fluid ounces. Since some of the epoxy will stay on the mixing container a good rule of thumb is to prepare 1.5 fluid ounces of epoxy for two embedments.

813-500 TN V1 102002

TED PELLA. INC.

Tools for Science and Industry

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PELCO® EPOXY PUMP SET:

Two one fluid ounce per stroke pumps screw directly onto gallon, half gallon and quart resin and hardener containers to allow for quick and clean dispensing of the mixture. Inserts that limit the stroke to 1/4 or 1/2 oz. volumes are included to allow for the correct ratio of epoxy to hardener to be dispensed. For example, one pump would be set at full stroke for one ounce of resin and one at half stroke for 1/2 oz of hardener. If three ounces were required two strokes of each pump would deliver this amount in the proper ratio.

MIXING

Accurate measuring and proper mixing are essential for complete uniform curing of an epoxy system. Once the resin and hardener are dispensed into the Tri-Stir® beaker, cant the beaker at a 45-degree angle and stir with a mixing stick in a circular motion to gently mix the components together as though you were gently scrambling an egg. Scrape the wall of the beaker with the edge of the stick and the base of the beaker with the tip of the stick and lift the stick through the epoxy as you mix to assure complete mixing. Continue stirring for at least two minutes using 60 -120 beats per minute for quantities up to 2 ounces. For larger quantities more mixing is required. Some testing may be necessary to determine the best method for your specimen and laboratory conditions.

EMBEDDING

Fast curing epoxies have a short working time and will gel in 6 to 9 minutes. Place specimen into a mold and cover with the mixed epoxy. The total thickness should not exceed one inch. The low viscosity resin mixture will flow into small crevices and also allows bubbles to escape. It may be used in conjunction with vacuum impregnation to assure complete embedment. Evacuate until the majority of the bubbles have risen to the surface and release the vacuum one to two times. To avoid overheating of specimens it is recommended to keep the thickness of the embedment under one inch.

CURING

Cure the epoxy at room temperature for two hours minimum to reach 95% strength. As with all room temperature curing epoxies it will continue to gain strength and hardness over a several day period. Using a conventional oven at up to 100°C for up to two hours can accelerate curing. This epoxy system is also microwave curable using 150W for 10 minutes.

ORDERING INFORMATION

| Product Description | Product Number |
|---|-----------------------|
| PELCO® Epoxy Mount Kit | 813-500 |
| Contains: 1ea, 813-501, 813-504, 813-503, 128-4, 12904-20, & 12906-20 | |
| PELCO® Epoxy Resin, 1 gallon (3785 ml) | 813-501 |
| PELCO® Epoxy Resin, 0.5 gallon (1892 ml) | 813-502 |
| PELCO® Fast curing Hardener 0.5 gallon (1892 ml) | 813-504 |
| PELCO® Fast curing Hardener 1 quart (946 ml) | 813-505 |
| PELCO® Epoxy Pump Set, 1 oz (29.6 ml) stroke, Set/2 | 813-503 |
| Mixing Sticks, 5/8"W x 5-1/2"L (16 x 140mm), Pkg/ 100 | 128-4 |
| Tri-Stir® Disposable Beakers, 3.0 oz 100 ml, Pkg/ 20 | 12904-20 |
| Tri-Stir® Disposable Beakers, 8.0 oz 250 ml, Pkg/ 20 | 12906-20 |

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