



*Technical Bulletin*

**SYMPOXY 1877 A&B**

**LOWEST COST, LOW VISCOSITY, FLEXIBLE EPOXY POTTING/CASTING SYSTEM  
FOR MEDIUM TO VERY LARGE CASTINGS**

**DESCRIPTION:**

**Sympoxy 1877 A&B** is a two component, flexible, room temperature cure, potting/casting system. This system was designed primarily for maximum flexibility and moisture resistance where large masses are cast with flexible plastic covered wires protruding from the castings.

Its low shrinkage and minimal exotherm makes large castings of 1 to 5 gallons permissible. Full cure is attained in 24-48 hours depending upon the mass cast and temperature.

**Sympoxy 1877 A&B** has the following outstanding properties:

- |  |                                    |
|--|------------------------------------|
| Easy 1 to 1, by weight or volume mix ratio | Excellent thermal shock resistance |
| Low viscosity                              | Low specific gravity               |
| Low exotherm in gallon masses              | Low shrinkage in large masses      |
| Excellent tensile elongation               | Excellent moisture resistance      |

**PHYSICAL PROPERTIES:**

Mix Ratio	
by volume A:B	1:1
by weight A:B	1:1
Gel Time - 400 grams	3 hrs.
5400 grams	2 hrs.
Viscosity - mixed @ 25°C cps	6,100
Hardness Shore - 1350 grams	
after 24 hrs. @ 25°C	70 A / 25 D
after 120 hrs. @ 25°C	80 A / 30 D
after 2 hrs. @ 100°C	80 A / 30 D
Specific Gravity - mixed	1.55
Cure schedule (see curing procedure)	24-48 hrs. @ 25°C
Shrinkage - in/in	0.0007
Tensile Strength (psi)	1,350
Tensile Elongation - %	80
Izod Impact (ft/lbs/in of notch)	2.10
Water Absorption - 24 hrs. @ 25°C	0.93
Weight Loss - 24 hrs. @ 150°C (%)	1.92

**ELECTRICAL PROPERTIES:**

Dielectric Constant - 1 MHz	3.71
Volume Resistivity (ohm-cm)	
@ 25°C	1.0 x 10 <sup>13</sup>
@ 100°C	2.8 x 10 <sup>9</sup>
@ 125°C	8.0 x 10 <sup>7</sup>
Coefficient of Thermal Expansion 10 <sup>-6</sup> °C	36
Thermal Shock Resistance - ¼" washer °C	-65 to 155
Dissipation Factor - 1 MHz	0.025

**MATERIAL HANDLING, PROCESSING, & SAFETY NOTES**

**MIXING:**

***IMPORTANT: Before each use, mix individual components, Part A and Part B, thoroughly before proportioning out the required amount.***

Mix, only when ready to use, by adding 1 part of Part B to 1 part of Part A, by weight or volume, and blending together thoroughly. Be sure to scrape and stir in all material sticking to the sides and bottom of the mixing container. Do not use paper containers or wooden mixing sticks. They may contain moisture. For best results, use plastic or coated containers, and metal or plastic sticks.

Electronic grade sand may be added to this system to lower cost or make thicker or increase the thermal conductance of the system.

**CURING:**

Cure 24-48 hours at room temperature (25°C). Requires longer cures when temperature is below 15°C (60°F). This system may also be cured at 65°C for 3 hours or 2 hours at 100°C.

**SURFACE PREPARATION TO PREVENT ADHESION:**

To prevent adhesion to the mold, use a GREASE-IT release agent. The following are recommended: GREASE-IT II, GREASE-IT IV, GREASE-IT V, GREASE-IT WAX P, or GREASE-IT WAX LT, use GREASE-IT FDG when a Food & Drug grade release is required. For best results, apply in a few thin coats, drying between coats. Porous surfaces, i.e. wood, plaster, etc, must be sealed thoroughly before release is applied. Use multiple coats of a good coating, such as: a high grade lacquer or urethane lacquer.

**SURFACE PREPARATION FOR ADHESION:**

For applications where adhesion is desired, the surface must be cleaned, abraded and dried. Sandblasting and mechanical roughing are the preferred ways of abrading surfaces to be bonded. For added adhesion to metals, use Primer 200 and for added adhesion to plastic, use Primer 810. Make sure all surfaces are clean, dry, and free from moisture.

**CLEAN UP:**

Cured polymers are difficult to remove. It is best to clean tools and equipment immediately after use. For best results use Hapco's A-TAK.

**STORAGE:**

Polymer systems have a minimum shelf life of six months when unopened. Both components should be stored in a room temperature dry place. When not in use, containers should be kept tightly closed.

**RESEALING:**

Many polymers are moisture sensitive, reseal, using one of the following two (2) methods: blanket with nitrogen or use a hair dryer for 30 seconds to cover with dry air.

**PRECAUTIONS:**

**CAUTION:** The MSDS should be read thoroughly before using this product.

Skin or eye contact with polymers should be avoided. Clean housekeeping procedures are urged and the use of gloves and/or protective creams suggested. All polymers, as a general practice, should be used in well ventilated areas. Spot ventilation is most effective. Contaminated clothing should be removed immediately and the skin washed with soap and water or waterless skin cleaner. Should accidental eye contact occur, wash thoroughly with water and consult a physician.

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The information presented here is based on carefully conducted laboratory tests and is believed to be accurate. However, results cannot be guaranteed and it is suggested that customers confirm results under their conditions and in their applications before production use.

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