



*Technical Bulletin*

**SYMPOXY 18752 A&B**

**LOW VISCOSITY, LOW EXOTHERM, GENERAL PURPOSE  
EPOXY POTTING & CASTING SYSTEM**

**DESCRIPTION:**

**Sympoxy 18752 A&B** is a two component, filled, semi-flexible, room temperature curing, potting and casting resin. It has an easy 2:1 mix ratio by volume or weight and each component is a different color so that a more uniform mixing can be attained. This system is excellent for casting applications where operating temperatures will not exceed 125°C. Long pot life and relatively fast cure (6-12 hours) speeds production in casting or potting applications.

This system has the following outstanding characteristics:

Excellent moisture resistance	Low viscosity
Excellent thermal shock resistance	Good thermal conductivity
Meets or exceeds MIL I-16923, type B	Long pot life with low exotherm
Low thermal expansion properties	Easy 2:1 by volume or weight mix ratio

**PHYSICAL PROPERTIES:**

Mix Ratio - (*see processing notes for other ratios)	
by volume A:B	200:100
by weight A:B	200:100
Gel Time - @ 25°C	100 min.
Viscosity - mixed @ 25°C cps	6,200
Color	Black
Hardness Shore D (*see processing notes)	65 D
Specific Gravity – Mixed	1.55
Cure schedule (see curing procedure)	
@ 25°C	6-12 hrs.
@ 54°C	3 hrs.
@ 65°C	2 hrs.
Flexural Strength (psi)	16,000
Tensile Strength (psi)	6,500
Compressive Yield (psi)	8,200
Water Absorption % (24 hrs. @ 25°C)	0.10
Linear Shrinkage (in/in 400 grams)	0.0001
Flame Retardancy - MIL I-16923, type B	SE
Thermal Shock Resistance (-55 to 130°C)	Pass

**ELECTRICAL PROPERTIES:**

Arc Resistance - seconds	80
Thermal Conductivity (BTU/hr/ft <sup>2</sup> /°F/in)	5.4
Thermal Expansion (10 <sup>-6</sup> /°C)	32
Dielectric Constant - to 1 MHz	3.48
Dielectric Strength (volts/mil.)	420
Volume Resistivity (ohm-cm)	
@ 25°C	1.0 x 10 <sup>14</sup>
@ 100 °C	3.5 x 10 <sup>10</sup>
Dissipation Factor - 1 MHz	0.035

**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. Components may separate and should be mixed before each use.

Mix, only when ready to use, by adding Part B to Part A 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. Pour down side of mold or potting cup to lessen air entrapment.

\* To increase flexibility and decrease hardness, mix at a ratio of 3 Parts A to 2 Parts B.  
To increase hardness, use a mix ratio of 3 Parts A to 1 Part B.

**CURING:**

Cure overnight at 25°C (room temperature) or 2 hours @ 150°F or 3 hours @ 130°F. Very large masses over 4 inches thick should be gelled at room temperature and post cured to hasten curing.

**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 L, 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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