



Technical Bulletin

SYMPOXY 1960G / 1961G

**ONE COMPONENT, LOW HEAT CURE, LOW DENSITY, FLAME RETARDANT (TO UL 94-VO)
EPOXY FOR POTTING /CASTING/ENCAPSULATION APPLICATIONS**

DESCRIPTION:

Symoxy 1960G/1961G are one component, lightweight powders with the following outstanding properties:

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|-------------------------------------|--------------------------------------|
| Specific gravity of .26 to .34 | One component - no mixing |
| Flame retardancy to UL 94-VO | Excellent filler suspension |
| Low shrinkage when cured at 85-90°C | Excellent penetration of componentry |
| Thermal shock resistant | Low heat cure - from 85°C |
| Excellent moisture resistance | Lower cost than most liquid systems |

Symoxy 1960G/1961G have excellent versatility in that units to be potted need only be filled to the desired level with vibration to assure complete filling of voids. If the cured powder is to be an exterior surface, 1960G/1961G may be coated with a liquid, flame retardant system to improve compressive strength. The chemical and moisture resistance of these powders are excellent, and are preferred over many liquid systems.

Symoxy 1960G/1961G are directed at applications where low density, exothermic or curing temperatures above 85°C cannot be tolerated and where thermal expansion problems should not harm delicate componentry.

TYPICAL CHARACTERISTICS:

	<u>1960G / 1961G</u>		<u>1960G / 1961G</u>
Mixing ratios	one component	Dielectric strength (Vol/mil)	480
Specific gravity	.26 to .30 / .30 to .34	Dielectric constant (1MHZ)	3.0
Viscosity, cps	Fine powder	Dissipation factor (1 MHZ)	0.02
Shelf life: (see storage procedure)		Compressive strength (psi)	500 / 1200
@ 21°C	3 mos.	Volume resistivity	4.0 x 10 ¹⁰ / 8.3 x 10 ¹⁰
@ 0°C	6 mos.	50V @ 25°C (ohm-cm)	
Recommended cure: (see curing procedure)		Thermal conductivity	1.6
@ 85°C	2-4 hrs.	(BTU/hr/sq ft/°F/in)	
@ 95°C	2-4 hrs.	Moisture resistance	0.03
@ 125°C	2 hrs.	(168 hrs @ 25°C)	
@ 150°C	1 hr.	Thermal shock resistance	Pass
Weight loss	0.10	(after post cure of 1hr. @150°C -55°C to 150°C)	
(168 hrs @ 150°C)			
Flammability Rating	UL 94 V-0	Color	Grey

MATERIAL HANDLING, PROCESSING, & SAFETY NOTES

PROCESSING / STORAGE:

If stored below 21°C, bring to room temperature (DO NOT USE HEAT) before using or extend curing time or temperature. Take bag from container and tumble in hands to insure good blend, make sure color is constant. Pour powder into unit to be potted and tap or shake to assure penetration of tight componentry.

CURING PROCEDURE:

Sympoxy 1960G/1961G may be cured at 85-90°C for 4 to 16 hours, depending on mass being cured. If operating temperature or thermal shock requirements are higher than 90°C then post cure 1 hour @ 150-160°C. Curing at the lower temperatures keeps shrinkage to a minimum.

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.

PRECAUTIONS:

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

Skin or eye contact should be avoided. Clean housekeeping procedures are urged and the use of gloves and/or protective creams suggested. All powders, 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.

Any finely-divided powder can become potentially explosive if it is dispersed in air. Do not expose this material to sparks, flames, or temperatures higher than those recommended for proper application.

0809

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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Distributed by:
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