

**EPOXY, TWO-COMPONENT - THERMALLY CONDUCTIVE
WHEN USED WITH SILICA SAND - POTTING COMPOUND****ESB-M3D139-A****1. SCOPE**

The material defined by this specification is a two-component epoxy tape casting resin which, when mixed in the proper ratio, cures to a flexible, thermally conductive sealer system.

2. APPLICATION

This specification was released originally for material used as a potting compound with the ability to adhere and densely encapsulate (without any voids) the wiring and other components of the rear, front and center sensor assemblies of the air bag system. The potting compound is to be used in conjunction with the originally approved silica sand to produce a low shrinkage and high shock resistance in the epoxy/sand composite compound.

3. REQUIREMENTS**3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS**

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.3 UNMIXED COMPONENT PROPERTIES

		<u>Resin</u>	<u>Hardener</u>
3.3.1	Color	White	Black
3.3.2	Solids, % min (ASTM D 2834, except heat at 100 +/- 2 °C for 3 h in a mechanical convection oven)	99-100	99-100
3.3.3	Viscosity at 23 +/- 2 °C, mPa.s (ASTM D 2393, Brookfield RVT)		
	Spindle No. 3, 50 rpm	1200-1800	-
	Spindle No. 2, 100 rpm	-	120-170
3.3.4	Weight Per Volume, kg/L (ASTM D 816)	1.12 - 1.14	0.96 - 0.97

The weight tolerance for any supplier shall be +/- 0.02 kg/L based on the weight of the original approved productions (see para 5.3).

Date	Action	Revisions
2004 12 16	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.5, 3.7 & 4
1985 03 11	Released	C3P1-DR526998

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**3.4 MIXED COMPONENT PROPERTIES**

- 3.4.1 Mixing Ratio by Weight (Resin to Hardener) 5:2
- 3.4.2 Pot Life
30 +/- 5 minutes in 0.225 kg lots at 23 +/- 2 °C.
- 3.4.3 Recommended Cure Cycle
24 h at 23 +/- 2 °C.

3.6 FUNCTIONAL APPROVAL

Material being evaluated for initial approval to the specification shall be subjected to a production trial in an area intended for use. This trial will be conducted after all other specification requirements have been met including laboratory evaluation and engineering approval for the trial. The assembly requirements must be met per specifications VES-E53B-14A685-A and VES-E53B-14A686-A.

5. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification.

- 5.1 **VISCOSITY OF MIXED COMPONENT** 500 - 1000 mPa•s
(Spindle No. 2, 20 rpm, 23 +/- 2 °C)
- 5.2 **VOLUME RESISTIVITY AT 23 +/- 2 °C** $3 \times 10^{14} \Omega \text{ cm}$
(ASTM D 257)
- 5.3 **DIELECTRIC STRENGTH, min** 12 kV/mm
(ASTM D 149, up to 10^6 Hz at 23 +/- 2 °C)
- 5.4 **DIELECTRIC CONSTANT** 4.4
(ASTM D 150, up to 10^6 Hz at 23 +/- 2 °C)
- 5.5 **DISSIPATION FACTOR** 0.036
(ASTM D 150, up to 10^6 Hz at 23 +/- 2 °C)
- 5.6 **SPECIFIC GRAVITY**
(ASTM D 792)
- | | |
|----------|------|
| Resin | 1.13 |
| Hardener | 0.96 |
- 5.7 **SHELF LIFE AT 23 +/- 2 °C** 12 months
- 5.8 **FLASH POINT**
- | | |
|----------|--------|
| Resin | 213 °C |
| Hardener | 79 °C |