

TECHSIL® EP25485 BLACK FLAME RETARDANT EPOXY

Techsil® EP25485 is a low viscosity, thermally conductive flame retardant potting and encapsulating compound. The mixed system has a long usable life and may be hot or cold cured. The system exhibits a good surface finish, high electrical strength, excellent thermal conductivity and low cure shrinkage. EP25485 is compatible with most circuit board components and materials over a wide temperature range. Adhesion is excellent to most plastics and substrates. The combination of properties and the ease of use of the material will lend itself to a wide range of applications. The flame-retardants in EP25485 are of a non-halogen type and do not contain heavy metals. It is available in bulk, kits and twin pack form. The standard colour is Black but other colours are available on request.

Features

- Excellent thermal conductivity
- High electrical insulating characteristics
- Non-toxic
- Low shrinkage
- High adhesion
- Flame retardant to UL94-VO
- Good chemical and water resistance
- RoHS and WEEE compliant

Specification:

Property	Resin	Hardener	Mixed
Colour	Black	Clear	Black
Specific gravity g/ml	1.82	0.93	1.64
Viscosity mPa.s @ 25 °c	250000	100	30000
Mix ratio by weight	7.8:1		
Mix ration by volume	4.0:1		
Usable life (150g @ 25°C)	120 minutes		
Gel time (150g @ 25°C)	360 minutes		

Approvals	
RoHS compliant	Yes
UL94 VO	No
REACH (SVHC concentration)	0%

Cure Schedule	Minimum cure	Full cure
	24 hrs @ 25°C	1 week
	4 hrs @ 60°C	6 hours
	2 hrs @ 80°C	4 hours

Contact Details

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The above are typical values and will vary depending on the cured mass and application. Hotter temperatures may be used for faster cure but will result in higher post cure shrinkage and higher cure exotherm. Experimentation and testing is suggested to avoid side effects. For the encapsulation of intricate components and densely populated PCBs the material should be heated to a maximum of 60°C to aid flow and reduce air entrapment. For maximum properties a post cure may be required.

Typical Properties:

Peak Exotherm	50
Shrinkage % (volume)	0.3
Thermal conductivity	1.15 W/mK
Operating temperature range	-40 to +150°C
Dielectric strength	18 kV/mm
Volume resistivity	12 ohm.cm
Shore D hardness	85
Flame Retardancy	Approvable to UL94-V0
Tensile strength	65 mPa
Compressive strength	80mPa
Deflection temperature	80°C
Co-efficient of expansion	35-45 ppm/°C
Loss Tangent	0.045 @ 50Hz
Permittivity	4.99 @ 50 Hz
Continuous tracking index	>850V
Water absorption	0.5% (30 days @ 20°C)
Elongation at break	1-3%
Flexural strength	90-100

Packaging:

Techsil EP25485 is available in Bulk, Twin packs, kits

Twinpacks:

Twinpacks are pre-weighed resin and hardener components contained in a tough flexible film, separated by a removable clip and rail. Once the clip and rail is removed the resin and hardener can be thoroughly mixed within the bag and is then ready for use. Mixing will normally take ~ 3 minutes depending on the operator and viscosity of the material. Twinpacks are ideal for small to medium production runs, prototyping and on-site or field use. The twin pack weight/volume may also be tailored to a specific size on request.

Bulk Material:

Techsil EP25485 is a filled system and formulated to avoid sedimentation. However, if sediment is found after storage, this must be re-dispersed in the original container before use. Failure to do so may result in defective product. Long-term sedimentation will be aggravated by storage above 25°C and should be avoided. In bulk or kit form gentle mixing with a paddle or spatula will homogenise the material. In bulk or kit form evacuation may be necessary for best results.

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Kits:

In kit form, resin and hardener are provided in separate containers to the correct ratio. In most cases, pour the hardener into the larger resin container and use it as a mixing vessel. Stir well using an appropriate mixer until homogeneous. Note: Incomplete mixing will be characterised by variable/partial cure (even after extended time periods).

Cleaning:

All equipment contaminated with mixed material should be cleaned before the material has hardened. Techsil Pronatur is suitable non-flammable cleaning agent. Techsil Silstrip will also remove cured material provided it is allowed to soak for a number of hours.

Storage and Shelf Life:

Material stored in the original unopened containers under cool dry condition between 10 and 25°C will have a shelf life of at least one-year. Once used the containers must be kept sealed to prevent effects from water, air or contaminants.

Health and Safety:

Epoxy resin systems may cause sensitisation by skin contact or inhalation may be corrosive, harmful, or toxic. It is therefore strongly recommended that skin and eye contact is avoided by the using of appropriate personal protective equipment such as gloves, safety glasses or goggles and overalls. Wash any contamination from the skin immediately and thoroughly and do not eat, smoke or drink in the working vicinity. Under normal working conditions a good source of ventilation is adequate, however if the material is heated then local exhaust ventilation (LEV) may be required especially for curing ovens. The above is given as a guide only; please refer to Health and Safety data sheets for more information.

DISCLAIMER

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy themselves as to the suitability of such information for their particular use.

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