



Features:

- High electrical insulating characteristics
- Non-toxic
- Good thermal conductivity
- Low shrinkage
- High adhesion
- Non-toxic
- Flame retardant to UL94-V0 at 3 mm
- Good chemical and water resistance
- Meets the requirements of WEEE



Description:

Epoxy resin is a non-toxic general purpose flame retardant potting and encapsulating compound has a long usable life and may be hot or cold cured. The system exhibits good surface finish, high electrical strength, good thermal conductivity, low exothermic and low cure shrinkage. The semi-flexible nature allows thermal expansion without cured stress and this makes 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. does not contain halogens or heavy metals and is available in bulk, kit or twin pack form. The standard colour is black but other colours are available on request

Specification Table

| Property | Mixed |
|-----------------------------|-------------|
| Colour | Black |
| Specific Gravity g / ml | 1.7 |
| Viscosity m.Pa.s at 25°C | 9,000 |
| Maximum Ratio by Volume | 4.8: 1 |
| Maximum Ratio by Weight | 8.6: 1 |
| Usable life (150 g at 25°C) | 120 Minutes |
| Gel Time (150 g at 25°C) | 360 Minutes |

Approvals

| | |
|----------------------------|-----|
| UL94-V0 | Yes |
| REACH (SVHC concentration) | 0% |

Cure Schedule

| Minimum cure | Full cure |
|------------------|-----------|
| 24 hours at 20°C | 1 week |
| 2 hours at 60°C | 4 hours |
| 1 hour at 80°C | 2 hours |

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 exothermic. Experimentation and testing is suggested to avoid side effects. For maximum properties a post cure may be required

Typical Properties

| | |
|---------------------------------|----------------------------------------------------|
| Peak Exothermic (150 g at 25°C) | 40 |
| Shrinkage % (Volume) | 0.3 |
| Thermal Conductivity | 0.85 W / m K |
| Operating Temperature Range | -55 to +130°C (application and geometry dependent) |
| Electric Strength | 18 kV / mm |
| Volume Resistivity | 11 Log 10 Ω - cm |
| Shore D Hardness | 80 |
| Flammability | UL94-VO 3 mm |
| Tensile Strength | 50 mPa |
| Compressive Strength | 60 mPa |
| Deflection Temperature | 50°C |
| Co-efficient of Expansion | 35 - 55 ppm / °C |
| Loss Tangent | 0.06 at 50Hz |
| Permittivity | 4.8 at 50 Hz |
| Continuous Tracking Index | > 850 V |
| Water Absorption | 0.3% (30 days at 20°C) |
| Elongation at Break | 2 - 5% |

Availability

Available through

Twin Packs

Twin packs are pre-weighed resin and hardener 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 to 3 minutes depending on the operator and viscosity of the material. Twin packs are ideal for small to medium production runs, prototyping and on-site or field use. Light sediment may be re-dispersed by carefully warming (to avoid distortion of the clip and rail) and kneading the pack. The twin pack weight /volume may also be tailored to a specific size on request. The use of twin packs results in reduced chemical handling and less environmental impact as the waste product is inert

Bulk Material

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

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 or partial cure (even after extended time periods)

Cleaning

All equipment contaminated with mixed material should be cleaned before the material has hardened by using a non-flammable cleaning agent

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 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

Part Number Table

| Description | Part Number |
|-------------------------------------------|-------------|
| Encapsulant, Epoxy, Flame Retardant, 50 G | PPC182 |
| Encapsulant, Epoxy, Flame Retardant 100 G | PPC183 |
| Encapsulant, Epoxy, Flame Retardant 250 G | PPC184 |
| Encapsulant, Epoxy, Flame Retardant 500 G | PPC185 |
| Encapsulant, Epoxy, Flame Retard 1,000 G | PPC186 |

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