

# Polyurethane Resin Encapsulant

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**RoHS  
Compliant**



## Description:

PPC124 is a low cost, general-purpose encapsulation system designed to give good environmental protection to a wide range of electrical and electronic products. Applications include: potting and encapsulation of PCBs, transformers, cable joints, and sensors.

## Features:

- Non-toxic
- Low exotherm
- High impact resistance
- Good electrical insulation characteristics
- High water resistance

## Specifications:

Potting Compound Type	: Polyurethane
Dispensing Method	: Twin Pack
Weight	: 250g
Colour	: Buff
Conductivity	: 0.35W/mK
Cure Procedure	: 1 Week @ 25°C, 4 Hours @ 60°C, 2 Hours @ 80°C
Cure Time Min	: 2h
Storage Temperature Max	: -15°C to +25°C
Useable Life	: Gel Time (150g @ 25°C) 18 mins
Viscosity m.Pa.s @ 25°C	: 1,000 - 3,000
Working Time	: 20min
Mix Ratio by Volume	: 3.75: 1
Mix Ratio by Weight	: 3.98: 1
Usable life (150g @ 25°C)	: 20 Minutes
Gel Time (150g @ 25°C)	: 18 Minutes
Property	: PPC124

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## Cure Schedule:

Min. Cure	Full Cure
24 hours @ 25°C	1 week @ 25°C
2 hours @ 60°C	4 hours @ 60°C
1 hour @ 80°C	2 hours @ 80°C

Allow a minimum of 24 hrs for light duty and 6 days to achieve maximum properties (ambient temperature)  
These results do not constitute a specification and are quoted for guidance use only. The information given is derived from test and/or extrapolations believed to be reliable however, the product is offered for evaluation on the understanding that the customer will satisfy himself that the product is suitable for his intended use.

## Typical Properties:

Exotherm	54°C - 75°C
Volume Resistivity	11 - 13 Log10Ω
Electric Strength	11.5 MV/m
Shore A Hardness	1:90 - 15:85
Glass Transition Temperature	Semi flexible
Operating Temperature	- 40°C to + 100°C (application & geometry dependent)
Thermal Conductivity	0.35 W/mK
Tensile Strength	45 MPa
Elongation at Break	50%
Shrinkage (Volume)	1.51%
Coefficient of Linear Expansion	50 – 75 ppm/°C

## 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 is thoroughly mixed within the bag and is immediately ready for use. Mixing will normally take 2 minutes due to the low viscosity; but pay special attention to the corners.

Twinpacks are ideal for small to medium production runs, prototyping and on-site or field use.

The twinpack weight/volume may also be tailored to a specific size on request.

## Bulk Material:

PPC124 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 being used. Failure to do so may result in defective product.

Long-term sedimentation will be aggravated by storage above 25°C and should be avoided.

Light sediment may be re-dispersed by carefully warming (to avoid distortion of the clip and rail) and kneading the pack; or if in bulk or kit form gently mixing with a paddle or spatula.

In bulk or kit form evacuation may be necessary for best results.

Avoid breathing vapours produced by this process.

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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 erratic or partially incomplete cure even after extended time periods.

## Cleaning:

All equipment contaminated with mixed material should be cleaned before the material has hardened.

TS130 is a suitable non-flammable cleaning agent, although other solvents may be found suitable.

TS130 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 15° 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:

Polyurethane 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, or where vapour levels are likely to exceed the occupational exposure limits appropriate respiratory protection must be worn.

Local exhaust ventilation (LEV) may be required especially for curing ovens or where large volumes of material are curing

## Part Number Table

Description	Part Number
Encapsulant, Polyurethane Resin, 250g	PPC124
Encapsulant, Polyurethane Resin 500g	PPC125

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