

# Propower LED Encapsulant



## Description:

PPC194 is a two-part, rigid, room temperature curing polyurethane resin designed for the potting and encapsulation of LED arrays and lighting equipment. On curing, PPC194 forms an opalescent finish that masks the underlying components but still retains high light transmission. PPC194 has excellent outdoor weathering properties, due to the incorporation of both UV resistant base materials and the addition of UV stabilisers and antioxidants.

## Features:

- Excellent long term UV stability
- Scratch and mark resistant
- High mechanical strength
- Easy to mix and process

## Specifications:

Property	Mixed
	PPC194
Colour	Opal
Specific Gravity g/ml	1.11
Viscosity m.Pa.s @ 25°C	400
Mix Ratio by Volume	1.00: 1
Mix Ratio by Weight	0.99: 1

	Usable life	Gel time	Tack Free
	(minutes)	(minutes)	(minutes)
150g @ 20°C	20	30	60

## Cure Schedule:

Temperature	Minimum Cure	Full Cure
20°C	24 hours	48 hours
40°C	12 hours	24 hours
60°C	6 hours	12 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 exotherm. Experimentation and testing is suggested to avoid side effects.

For maximum properties, a post cure may be required.

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## Typical Properties:

Water Absorption	0.87% (30 days @25°C)
Shore D Hardness	70
Operating Temperature**	- 55 to + 120°C (application & geometry dependent)
Thermal Conductivity	0.25 W/mK
Tensile Strength	16 MPa
Elongation at Break	5-10%
Compressive Yield Strength	20 MPa
Coefficient of Linear Expansion	60-80 pp/m°C
Volume Resistivity	< 13 Log10ohmm
Surface Resistivity	< 14 Log10ohm
Electric Strength	20 kV/mm
Refractive Index	1.47-1.48

Packaging	Size
PPC194 is available in:	200ml Cartridges
	5kg Set
	10kg Set

## Availability:

Available through

## 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 ~ 1 minute 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:

Both resin and hardener are supplied in 5 kg, 25kg and 200ltr drums and fully evacuated and ready for use. Care should be taken to ensure when mixing the resins air is not entrained in the mixture. If this is unavoidable, the mixed resin and hardener should be re-evacuated before dispensing. The bulk resin and hardener materials can be dispensed from suitable dispensing machinery, details can be provided on request.

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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/partially incomplete cure even after extended time periods.

## Cleaning:

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

## 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
LED Encapsulant	PPC194

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