

Propower LED Encapsulant



Description:

PPC195 is a two-part, high hardness, room temperature curing polyurethane resin designed for the potting and encapsulation of electrical and electronic devices requiring very high clarity. PPC195 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
- Non-toxic
- Meets requirements of WEEE & RoHS
- High mechanical strength
- Easy to mix and process

Specifications:

Property	Mixed
	PPC195
Colour	Clear
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)
2g @ 20°C	20	40	240
100g @ 20°C	10	12	20

Approvals:

RoHS compliant	Yes
UL94-V0	No
REACH (SVHC concentration)	0%

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

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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 maximum properties, a post cure may be required.

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	46 MPa
Elongation at Break	2 - 4%
Compressive Yield Strength	60 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:

PPC195 is available in	Bulk, Twinpacks and cartridges
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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.

For further details please visit.

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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.

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.

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	PPC195

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