

# Propower Polyurethane Resin



## Description:

PPC178 is a two-part, low viscosity room temperature curing polyurethane resin designed for the manufacture of badges and decals. PPC178 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
- Easy to mix and process

## Specifications:

Property	Mixed
	PPC178
Colour	Clear
Specific Gravity g/ml	1.11
Viscosity m.Pa.s @ 25°C	700
Mix Ratio by Volume	1.00: 1
Mix Ratio by Weight	0.92: 1

## Approvals:

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

## Cure Schedule:

Temperature	Initial Cure	Full Cure
20°C	6	24
40°C	2	4
60°C	1	2

	Usable life	Gel time	Tack Free cure time
	(minutes)	(minutes)	(minutes)
Thin film <2mm @ 20°C	15	30	120
Thick film >5mm @ 20°C	6	12	20

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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	1.17% (30 days @25°C)
Shore A Hardness	75
Operating Temperature	- 55 to + 120°C (application & geometry dependent)
Thermal Conductivity	< 0.21 W/mK
Tensile Strength	~15 mPa
Elongation at Break	100%
Compressive Yield Strength	< 10 MPa
Coefficient of Linear Expansion	100-150 pp/m°C
Volume Resistivity	< 13 Log10ohmm
Surface Resistivity	< 14 Log10ohm
Electric Strength	20 kV/mm
Refractive Index	1.47-1.48

## Packaging:

PPC178 is available in	Bulk, Twinpacks, cartridges & kits
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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 for PPC178 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.

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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 and Robnor Resins produce a range of these machines, details that can be provided on request.

## 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
Polyurethane Resin	PPC178

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