

## UR5051 Polyurethane Resin

UR5051 is a high performance encapsulation resin that allows easy removal of cured material from defective units which have been potted and are in need of repair. The combination of properties of UR5051 make it ideal for potting delicate electrical and electronic components.

- Low hardness; ideal for delicate components or applications where easy removal is required
- High resistance to sea water; ideal for marine environments
- Good low temperature performance; suitable for use down to -60°C
- Low moisture sensitivity during cure; fast gel time for efficient processing

<b>Approvals</b>	<b>RoHS Compliant (2015/863/EU):</b>	<b>Yes</b>
	<b>UL Approval:</b>	<b>No</b>

### Typical Properties

Liquid Properties:	Base Material	Polyurethane
	Density Part A - Resin (g/ml)	1.49
	Density Part B - Hardener (g/ml)	1.03
	Part A Viscosity (mPa s @ 23°C)	7600
	Part B Viscosity (mPa s @ 23°C)	180
	Mixed System Viscosity (mPa s @ 23°C)	3600
	Mix Ratio (Weight)	9.02:1
	Mix Ratio (Volume)	6.24:1
	Usable Life (20°C)	15 mins
	Gel Time (23°C)	20 mins
	Cure Time (23 °C)*	48 hours
	Colour Part A - Resin	Blue
	Colour Part B - Hardener	Brown
	Storage Conditions	Dry Conditions: Above 15°C, Below 30°C
	Shelf Life	12 Months

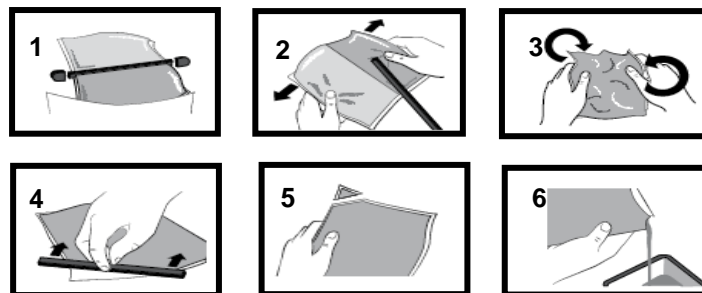
\***NB:** Although cured the material may sustain a slight surface tack for a while but this will disappear after 48 hours. Based on 150g mass @ 23°C

Cured System:	Thermal Conductivity (W/m.K)	0.30
	Temperature Range (°C)	-60 to +110
	Max Temperature Range (Short Term (°C)/30 mins) (Application and Geometry Dependent)	+120
	Dielectric Strength (kV/mm)	20
	Volume Resistivity (ohm-cm)	10 <sup>15</sup>
	Shore Hardness	A30
	Colour (Mixed System)	Blue
	Density of Mixed System (g/ml)	1.42

## **Mixing Procedures**

### **Resin Packs**

When in Resin pack form, the resin and hardener are mixed by removing the clip and moving the contents around inside the pack until thoroughly mixed. To remove the clip, remove both end caps, grip each end of the pack and pull apart gently. By using the removed clip, take special care to push unmixed material from the corners of the pack. Mixing normally takes from three to four minutes depending on the skill of the operator and the size of the pack. Both the resin and hardener are evacuated prior to packing so the system is ready for use immediately after mixing. The corner may be cut from the pack so that it may be used as a simple dispenser. There is also a YouTube video ([Polyurethane Mixing Instructions](#)) available on the Electrolube channel to show the mixing process.



### **Bulk Mixing**

When mixing, care must be taken to avoid the introduction of excessive amounts of air. Automatic mixing equipment is available which will not only mix both the resin and hardener accurately in the correct ratio but do this without introducing air. Containers of Part A (Resin) and Part B (Hardener) should be kept sealed at all times when not in use to prevent the ingress of moisture. Bulk material must be thoroughly mixed before use. Incomplete mixing or use of the wrong mix ratio will result in erratic or partial curing.

### **Additional Information**

- Cleaning:** It is far easier for machines & containers to be cleaned before the resin has been allowed to cure. Electrolube's RRS is suitable for cleaning machines and containers and cured resin may be slowly softened and removed by soaking in our RRS.
- Curing:** Do not heat cure large volumes immediately. Allow these to gel at room temperature and post-cure at high temperature if required (refer to liquid properties for details). Small volumes (250ml) may be heat cured immediately.
- Storage:** When storing under very cold conditions, the hardener may crystallise. If this occurs, simply warm (40°C) the container gently until all crystals have re-melted.
- Health & Safety:** Always refer to the Health & Safety data sheet before use. These can be downloaded from [www.electrolube.com](http://www.electrolube.com)

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All information is given in good faith but without warranty. Properties are given as a guide only and should not be taken as a specification.

Electrolube cannot be held responsible for the performance of its products within any application determined by the customer, who must satisfy themselves as to the suitability of the product.

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