

## UR5083 Polyurethane Resin

UR5083 is an ultra-high performance, two-part resin system that has the unique ability to "self-heal" when penetrated. As a result, this resin has found use in several applications in electrical and electronic devices that require; the testing of circuits and devices through the resin itself or the need to pass wires or connections through the resin when in situ. This resin also has the ability to adhere to the case or device while slipping off the test probe, wire or connector on withdrawal; the hole quickly fills and seals to provide a moisture barrier.

- Re-enterable, self-healing gel; ideal for applications requiring the removal of wires and connectors
- High water resistance and low moisture sensitivity during cure; ideal for marine applications
- Excellent electrical properties; ideal for protecting PCBs in harsh environments
- Low penetrating viscosity and long useable life; ideal for potting complex or difficult geometries

<b>Approvals</b>	<b>RoHS-2 Compliant (2011/65/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)	0.96
	Density Part B - Hardener (g/ml)	1.00
	Part A Viscosity (mPa s @ 23°C)	1000
	Part B Viscosity (mPa s @ 23°C)	600
	Mixed System Viscosity (mPa s @ 23°C)	800
	Mix Ratio (Weight)	2.00:1
	Mix Ratio (Volume)	2.10:1
	Usable Life (20°C)	90 mins
	Gel Time (23°C)	4 hours
	Cure Time (23 °C)	48 hours
	Colour Part A - Resin	Translucent
	Colour Part B - Hardener	Yellow
	Storage Conditions	Dry Conditions: Above 15°C, Below 35°C
	Shelf Life	12 months
	Exotherm	< 35°C
	<small>(Measured on 100ml sample in a cylinder of diameter 49.4mm @ 23°C)</small>	

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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.

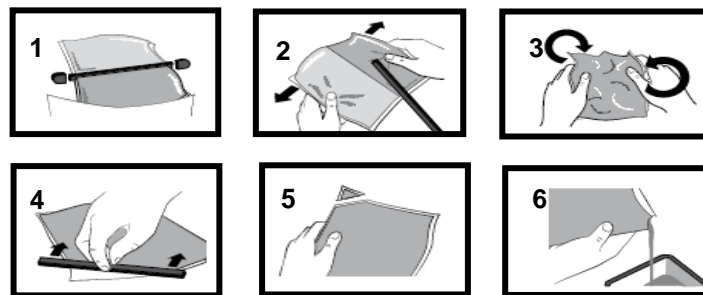
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Cured System:	Cured Density (g/ml)	0.98
	Temperature Range (°C)	-60 to +100
	Max Temperature Range (Short Term (°C)/30 mins) (Application and Geometry Dependent)	+110
	Shore Hardness @ 25°C	Soft gel
	Colour (Mixed System)	Translucent
	Volume Resistivity (ohm-cm)	10 <sup>9</sup>

## **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 two 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.



### **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 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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