UR5048
Polyurethane Resin

UR5048 is a two-part, clear amber, flexible encapsulation resin which due to its 'digoutable' properties allows easy removal of cured material from broken or defective units. In most cases the clarity of the material allows the defect to be spotted without stripping the whole unit and the repair can then be localised.

- Very low hardness; can be cut or 'dug out' for easy removal
- Excellent low temperature performance; remains flexible to -60°C
- Very low water absorption; ideal for high humidity environments
- Low embedment stress; ideal for protecting delicate components from mechanical and thermal shock

Approvals	**RoHS Compliant (2015/863/EU):**	**Yes**
	UL Approval:	**No**

Typical Properties

Liquid Properties:	Base Material	Polyurethane
	Density Part A - Resin (g/ml)	0.93
	Density Part B - Hardener (g/ml)	1.24
	Part A Viscosity (mPa s @ 23ºC)	1200
	Part B Viscosity (mPa s @ 23ºC)	60
	Mixed System Viscosity (mPa s @ 23ºC)	980
	Mix Ratio (Weight)	14.05:1
	Mix Ratio (Volume)	18.58:1
	Usable Life (20°C)*	20 mins
	Gel Time (23°C)*	40 mins
	Cure Time (23 °C)	24 hours
	Cure Time (60 °C)	4 hours
	Colour Part A - Resin	Clear
	Colour Part B - Hardener	Amber
	Storage Conditions	Dry Conditions: Above 15ºC, Below 30ºC
	Shelf Life	12 months
	Exotherm (Measured on a 100ml sample; cylinder of diameter 49.4mm @ 23ºC)	< 35ºC
	Shrinkage	< 1%

*Usable life and gel times extend slowly on storage. The above times refer to freshly made material - after 6 months storage usable life is typically 35 minutes and gel time 80 minutes.

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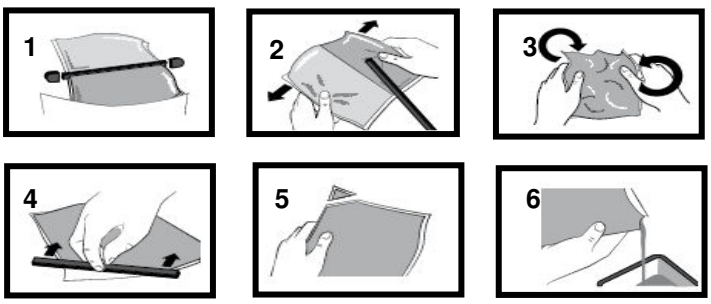
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Cured System:	Thermal Conductivity (W/m.K)	0.20
	Cured Density (g/ml)	0.95
	Temperature Range (°C)	-60 to +100
	Max Temperature Range (Short Term (°C)/30 mins) (Application and Geometry Dependent)	+100
	Dielectric Strength (kV/mm)	18
	Volume Resistivity (ohm-cm)	10^{14}
	Shore Hardness	A12
	Colour (Mixed System)	Clear
	Flame Retardancy	No
	Loss Tangent @ 50 Hz	0.02
	Permittivity @ 50 Hz	3.50
	Comparative Tracking Index	Not Measured
	Water Absorption (9.7mm thick disk, 51mm diameter) 10 days @ 20ºC / 1 hour @ 100ºC	< 0.5% / <1%
	Elongation At Break	Not Measured

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.



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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

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