



Technical Data Sheet

UR5048 Polyurethane Resin

Product Description

UR5048 is a 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.

Features

- Excellent low temperature flexibility to -60°C
- Low viscosity
- Low embedment stress
- Excellent electrical properties
- Ideal for protecting delicate components from mechanical and thermal shock
- Low moisture sensitivity during cure
- Very low water absorption

Approvals:	RoHS Compliant	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 @ 23°C)	1200
	Part B Viscosity (mPa s @ 23°C)	60
	Mixed System Viscosity (mPa s @ 23°C)	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 15°C, Below 35°C
	Shelf Life	12 months
	Exotherm	
	(Measured on a 100ml sample in a cylinder of diameter 49.4mm @ 23°C)	< 35°C
	Shrinkage	< 1%

Cured System:	Thermal Conductivity (W/mK)	0.20
	Cured Density (g/ml)	0.95
	Temperature Range (°C)	-60 to +100
	Max Temperature Range (Short Term °C / Mins)	+100
	Dielectric Strength (kV/mm)	18
	Volume Resistivity (ohm-cm)	10 ¹⁴
	Shore Hardness	A12
	Colour (Mixed System)	Clear
	Flame Retardency	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)	< 0.5% / <1%
	10 days @ 20°C / 1 hour @ 100°C	
	Elongation At Break	Not Measured

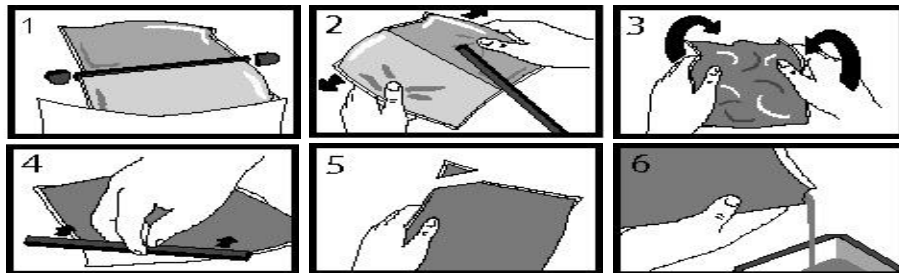
*Usable Life and Gel Times extend slowly on storage. The above times refer to freshly made material - after 6 months storage Usable Life is typically 35 minutes and Gel Time 80 minutes.

Mixing Procedures

Resin Packs

It is important not to remove the aluminium outer wrapping until immediately before use. To open, cut the aluminium outer being very careful not to damage the inner pack.

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

Curing Schedule

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.

Cleaning

It is far easier for machines & containers to be cleaned before the resin has been allowed to cure. Electrolube's OP9004 is a non-flammable cleaner designed for this purpose. Cured resin may be slowly softened and removed by soaking in our OP9003 Resin Stripper.

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

Rev: 1 (August '06)

Copyright Electrolube 2005

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.