Technical Data Sheet

UR5547
Polyurethane Resin

Product Description

UR5547 is a semi rigid, flame retardant polyurethane potting resin ideally suited to applications where small and delicate components are involved since the cured product exhibits very little stress, even when thermally cycled.

Features

- Conforms to UL94 V-O at 1.5mm thickness
- Low water absorption
- Excellent impact resistance
- Good adhesion to a wide variety of substrates
- Good electrical properties

Approvals:	RoHS Compliant	Yes
	UL Approval	Meets

Typical Properties:

Liquid Properties:	Base Material	Polyurethane
	Density Part A - Resin (g/ml)	1.69
	Density Part B - Hardener (g/ml)	1.23
	Part A Viscosity (mPa s @ 23ºC)	24000
	Part B Viscosity (mPa s @ 23ºC)	230
	Mixed System Viscosity (mPa s @ 23ºC)	4000
	Mix Ratio (Weight)	5.52:1
	Mix Ratio (Volume)	4.01:1
	Usable Life (20°C)	20 mins
	Gel Time (23°C)	50 mins
	Cure Time (23 °C)	24 hours
	Cure Time (60 °C)	3 hours
	Colour Part A - Resin	Black
	Colour Part B - Hardener	Brown
	Storage Conditions	Dry Conditions: Above 15ºC, Below 35ºC
	Shelf Life	12 months
	Exotherm (Measured on 100ml sample in a cylinder of diameter 49.4mm @ 23ºC)	< 35ºC
	Shrinkage	< 1%

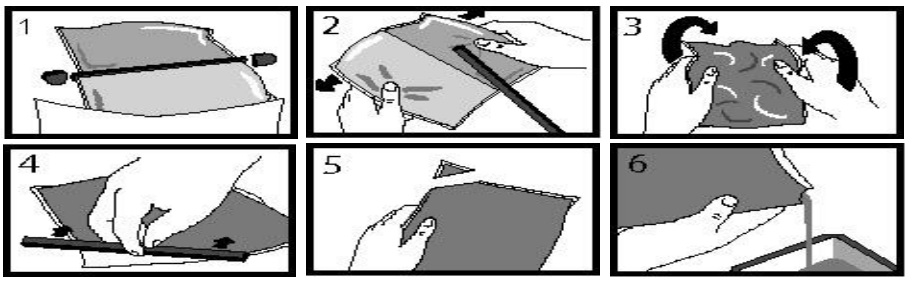
Cured System:	Thermal Conductivity (W/mK)	0.35
	Cured Density (g/ml)	1.60
	Temperature Range (°C)	-50 to +120
	Max Temperature Range (Short Term °C / Mins)	+125
	Dielectric Strength (kV/mm)	14
	Volume Resistivity (ohm-cm)	10^{14}
	Shore Hardness	A85
	Colour (Mixed System)	Black
	Flame Retardency	No
	Loss Tangent @ 50 Hz	0.14
	Permittivity @ 50 Hz	5.00
	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

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.

General
Sedimentation of the resin has been minimised by careful attention to the formulation. However, any sediment which may have occured over long periods of time must be dispersed before removing any material from the container. This dispersion can be carried out (if necessary) by stirring with a broad bladed spatula or gently rolling the can. Take care not to introduce excessive amounts of air during this operation or it may be necessary to re-evacuate the resin. Sedimentation will be accelerated by storage at high temperatures. Sedimentation found in resin packs forms no problem since the sediment is re-mixed when the pack is used.

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

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