Technical Data Sheet

UR5562
Polyurethane Resin

Product Description

UR5562 is a semi-rigid optically clear polyurethane resin ideal for use in decorative and protective applications. Due to a carefully selected blend of components an extremely durable, low viscosity system is achieved which can be used for a wide variety of applications. The material is not suitable for thick sections above 50mm as the exotherm build up during cure will create voids.

Features

- Water white transparency
- Excellent resistance to yellowing when exposed to UV light
- Excellent scratch and mark resistance
- High resistance to weather, acids and alkalis, water and mould growth

Approvals:	RoHS Compliant	Yes
	UL Approval	No

Typical Properties:

Liquid Properties:	Base Material	Polyurethane
	Density Part A - Resin (g/ml)	1.01
	Density Part B - Hardener (g/ml)	1.06
	Part A Viscosity (mPa s @ 23ºC)	1700
	Part B Viscosity (mPa s @ 23ºC)	50
	Mixed System Viscosity (mPa s @ 23ºC)	300
	Mix Ratio (Weight)	2.24:1
	Mix Ratio (Volume)	2.34:1
	Usable Life (20°C)	17 mins
	Gel Time (23°C)	22 mins
	Cure Time (23 °C)	24 hours
	Cure Time (60 °C)	4 hours
	Colour Part A - Resin	Clear
	Colour Part B - Hardener	Clear
	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)	< 90ºC
	Shrinkage	< 1%

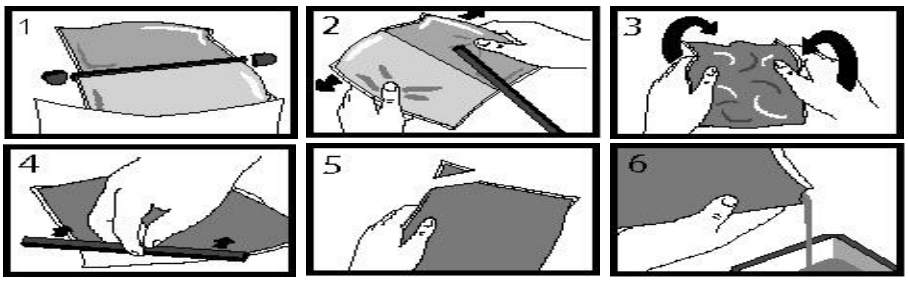
Cured System:	Thermal Conductivity (W/mK)	0.20
	Cured Density (g/ml)	1.02
	Temperature Range (°C)	-40 to +120
	Max Temperature Range (Short Term °C / Mins)	+130
	Dielectric Strength (kV/mm)	11
	Volume Resistivity (ohm-cm)	10^{14}
	Shore Hardness	A95 / D46
	Colour (Mixed System)	Water White
	Flame Retardency	No
	Loss Tangent @ 50 Hz	0.025
	Permittivity @ 50 Hz	3.50
	Comparative Tracking Index	Not Measured
	Water Absorption (9.7mm thick disk, 51mm diameter) 10 days @ 20ºC / 1 hour @ 100ºC	< 1% / < 2%
	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.

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

Additional Health & Safety Notes

The main hazard of the resin system is associated with the Part B (isocyanate hardener). This is based on isophorone diisocyanate (IPDI), which is categorised as toxic due to the effect on lung absorption when sprayed. Under normal circumstances however the danger is rather less because of the comparatively low vapour pressure of the isophorone diisocyanate at 20 - 25°C and the consequent comparatively low concentrations of the isocyanate vapour.

However, the regulations and codes of practice existing for isocyanates must be strictly adhered to in the handling of this hardener. These include the use of gloves, overalls and safety glasses or goggles, to avoid skin and eye contact. Wash away any skin contact with the hardener immediately using warm soapy water. **DO NOT HEAT THE ISOCYANATE** (Part B) or do anything likely to introduce a large number of fine droplets in the atmosphere.

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