

UR5040 Polyurethane Resin

Product Code: UR5040

PRODUCT DESCRIPTION

UR5040 is a high performance polyurethane encapsulation system which features flame retardancy, excellent electrical properties, low permeability to water and good adhesion to a wide range of substrates.

The resin system also incorporates, due to carefully selected blend of components, low moisture sensitivity during cure even when used in humid conditions.

UR5040 also has good oxidation resistance, continued operating temperatures ranging from -60°C to +125°C and excellent resistance to most harsh environments. This blend of properties make the **UR5040** system ideal for potting electrical and electronic components where a standard polyurethane potting compound cannot meet all the requirements.

The colour of **UR5040** is red. **UR5040** can be supplied in bulk, kit or resinpack form and other colours are available if desired.

PRODUCT USE

UR5040 has been formulated to give little or no sedimentation, if stored correctly (i.e.; between 15 - 20°C). If sedimentation occurs, then the containers should be rolled or the sediment re-mixed with the use of a spatula or other similar instrument. On no account should any material be removed if sedimentation has occurred and not been re-mixed. In Resinpack form sedimentation offers no problem since the sediment is re-mixed when the pack is mixed.

In bulk form the resin (Part A) should be mixed with the hardener (Part B) in the ratio:

4.27 : 1 by weight
3.46 : 1 by volume

If in Resinpack form do not remove the aluminium laminate outer wrap until immediately before use. Cut open the aluminium outer being very careful not to damage the inner pack. Remove the inner pack and

TECHNICAL
DATA
SHEET

**Copyright
Electrolube
2003**

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.



UR5040 Polyurethane Resin – Page 2

TECHNICAL DATA SHEET

discard the desiccant. Remove the clip from the inner pack (grip each end of the pack and pull gently) and move the contents around inside the pack until thoroughly mixed. Take special care to push unmixed material from the corners. Mixing normally takes from two to four minutes depending on the skill of the operator. 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 can be used as a simple dispenser.

When mixing resin and hardener, once again avoid introducing excessive amounts of air.

Bulk material or Resinpacks must be thoroughly mixed before use - incomplete mixing will result in erratic or even partially incomplete cure.

TYPICAL PROPERTIES OF SYSTEM

Density of Resin	1.48 g/ml
Colour of Resin	Red
Density of Hardener	1.19 g/ml
Colour of Hardener	Brown
Density of System	1.41 g/ml
Colour of System	Red
Viscosity of Resin	195 poise @ 23°C
Viscosity of Hardener	2.15 poise @ 23°C
Viscosity of System	49 poise @ 24°C
Usable Life*	15 minutes
Gel Time*	45 minutes
Tack Free Cure Time*	6 hours
Full Cure*	48 hours
Shore Hardness (A)	75 - 80
Dielectric Constant	3.1 (25°C @ 50 Hz)
Dissipation Factor	0.03 (25°C @ 50 Hz)
Dielectric Strength	18 Kv/mm
Volume Resistivity	8×10^{14} Ohm/cm
Thermal Conductivity	0.35 w/m°C

* 150g at 20°C.

Copyright Electrolube 2003

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.



UR5040 Polyurethane Resin – Page 3

HEALTH & SAFETY NOTES

Machines, containers etc are more easily cleaned before the resin has been allowed to harden. Design Resins **OP9004** is a relatively safe non-flammable Cleaner for this purpose. Cured resin may be slowly softened and removed by soaking in **OP9003 Resin Stripper**.

Resinpacks stored in a cool dry place have a shelf life of at least 12 months providing the aluminium laminate outers have not been removed or damaged. Bulk material stored in original unopened containers will also have a shelf life of at least 12 months.

The main hazard of the **UR5040** system is associated with the Part B (Isocyanate Hardener). This is based on diphenylmethane diisocyanate (MDI) which is much less toxic than most other isocyanates. Avoid skin and eye contact by use of gloves, overalls and safety glasses or goggles. Wash any contamination from the skin immediately. Take care not to contaminate food-stuffs. MDI has low volatility and the TLV for the material is only likely to be approached if the material is sprayed or heated. **DO NOT HEAT THE ISOCYANATE (Part B)** or do anything likely to introduce a large number of fine droplets into the atmosphere.

TECHNICAL
DATA
SHEET

Copyright Electrolube 2003

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.

