UR5528

Polyurethane Resin

DESCRIPTION

UR5528 is a two-part potting and encapsulating compound with excellent water resistance properties making it suitable for a wide range of applications where water or moisture ingress may be a concern.

READ ENTIRE TECHNICAL BULLETIN BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Excellent adhesion to a wide variety of substrates; versatile in use
- Low viscosity; aids quick and efficient potting processes
- Excellent resistance to acids, alkalis, and other aqueous materials; ideal for harsh environments
- Durable with a high degree of toughness; good physical protection

APPROVALS

Standard	Status
RoHS Compliant (2015/863/EU)	Yes
UL Approval	No

PRODUCT INFORMATION

For available packaging sizes please visit:

electrolube.com

PHYSICAL PROPERTIES

Category	Results
Liquid Properties	
Base Material	Polyurethane
Color Part A – Resin Part B - Hardener	 Black Amber
Density Part A - Resin (g/mL) Part B - Hardener (g/mL)	 1.02 1.24
Viscosity Part A (mPa s 23 °C) Part B (mPa s 23 °C) Mixed System Viscosity (mPa s 23 °C)	 3500 150 2000
Mix Ratio Weight Volume	 2.37:1 2.87:1
Usable Life (20 °C)	20 minutes
Gel Time (23 °C)	35 minutes
Cure Time 23 °C 60 °C	 24 hours 5 hours
Storage Conditions	Dry Conditions: Above 15 °C, Below 30 °C
Shelf Life	12 Months
Exotherm (Measured on 100 mL sample; cylinder of diameter 49.4 mm @ 23 °C)	<35 °C
Shrinkage	< 1%
Cured System	
Color (Mixed System)	Black
Thermal Conductivity (W/m.K)	0.245

Category	Results
Cured Density (g/mL)	1.07
Temperature Range (°C)	-50 to 125
Max Temperature Range (Short Term (°C)/30 Mins) (Application and Geometry Dependent)	+130
Volume Resistivity (ohm-cm)	10^{14} (Extra Data – See Below)
Dielectric Strength (kV/mm)	25 (Extra Data – See Below)
Shore Hardness	D57
Flame Retardancy	No
Loss Tangent @ 50 Hz	0.027
Permittivity @ 50 Hz	3.50 (Extra Data – See Below)
Comparative Tracking Index	Not Measured
Water Absorption	See Below
Elongation at Break	104%
Tensile Strength (N/mm^2)	14.2
Tear Strength (kN/m)	52
Elongation at Break	104%

Chemical Resistance Data

Resin resistance to distilled water @ 100 °C (size 120 x 15 x 10mm)

Immersion Period (days)	% Weight Change
1	+1.0
2	+1.5
5	+1.5
6	+2.0
9	+2.0

Resin resistance to distilled water at ambient temperature

Immersion Period (days)	% Weight Change
3	+0.5
30	+0.5
180	+1.1

Water Vapour Permeability: 2.25 g.cm per cm^2.H.mbar

Electrical and Physical Properties

(Specimen 95 mm diameter by 1 mm thickness)

Dielectric Strength (kV/mm)	
Dry	25
4 Days at 80% RH	25
24 Hours in Water	23

Surface Resistance (ohms)	
Dry	4×10^{14}
4 Days at 80% RH	5×10^{13}
24 Hours in Water	2×10^{14}

Volume Resistance (ohm.cm)	
Dry	5×10^{14}
4 Days at 80% RH	9×10^{14}
24 Hours in Water	2×10^{15}

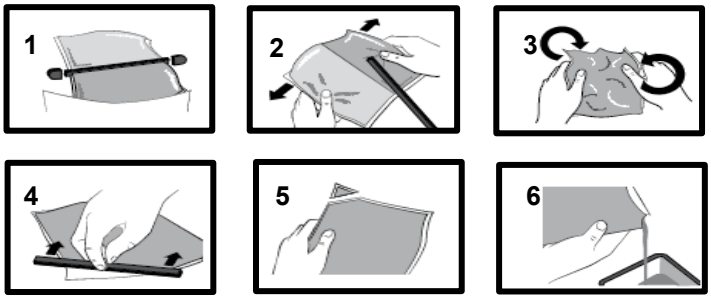
Permittivity (Dry)	
At 50 Hz	3.5
At 800 Hz	3.4
At 1 MHz	3.3
At 3 GHz	2.9

Dissipation Factor, Tan Delta (Dry)	
At 50 Hz	0.027
At 800 Hz	0.014
At 1 MHz	0.011
At 3 GHz	0.007

APPLICATION GUIDELINES – RESIN PACKS

Mixing Procedures

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.



APPLICATION GUIDELINES - BULK

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. 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 (250 mL) 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.

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

CONTACT INFORMATION

To confirm this document is the most recent version, please contact
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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE . Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588