

URC

High Performance Urethane Coating

DESCRIPTION

URC is a transparent, flexible, modified high performance urethane conformal coating, specifically designed for the protection of electronic circuitry. **URC** has excellent mechanical and dielectric properties after temperature cycling.

READ ENTIRE TECHNICAL BULLETIN BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Wide operating temperature range; excellent performance in changeable temperatures
- Resistant to a wide variety of chemicals; improved by heat curing
- Excellent mechanical properties, including abrasion resistance
- Excellent electrical properties and low temperature performance

APPROVALS

Standard	Status
RoHS Compliant (2015/863/EU)	Yes
REACH Compliant	Yes
IPC-CC-830	Meets Approval
MIL Approval (MIL-I-46058C)	Meets Approval
QMJU2.E480702	Meets Approval File: (E480702)

PRODUCT INFORMATION

For available packaging sizes please visit:

electrolube.com

PHYSICAL PROPERTIES

Category	Results
Liquid Properties	
Appearance	Clear Dark Liquid (Bulk)
Density @ 20 °C (g/mL)	
Bulk	0.90
Aerosol	0.84
VOC Content	
Bulk	59%
Aerosol	87%
Flash Point (°C)	34
Solid Content	
Bulk	41%
Aerosol	13%
Viscosity (mPa s @ 20 °C)	170 to 270
Touch Dry Time @ 20 °C	15 minutes
Recommended Drying Time	
20 °C	24 hours
60 °C	4 hours
90 °C	2 hours
Coverage @ 25µm	17 m ² /L
Dry Film Coating	
Color	Clear
Temperature Range (°C)	-40 to 140
Flammability	UL94 V-0
Dielectric Strength (kV/mm)	80
Dielectric Constant	2.7
Surface Insulation Resistance	1 x 10 ¹⁶ Ω
Dissipation Factor	0.001

Category	Results
Moisture Resistance (MIL-1-46058C)	Meets Requirements
Salt Spray Resistance (ASTM B117-03)	Meets Requirements

APPLICATION GUIDELINES

URC can be sprayed, dipped or brushed. The thickness of the coating depends on the method of application (typically 25 to 75 microns). Temperatures of less than 16 °C or relative humidity in excess of 75% are unsuitable for the application of URC. As is the case for all solvent based conformal coatings, adequate extraction should be used (refer to MSDS for further information). Substrates should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is achieved. Also, all flux residues must be removed as they may become corrosive if left on the PCB. We manufacture a range of cleaning products using both hydrocarbon solvent and aqueous technology. Our cleaning products produce results within Military specification.

TYPICAL PRODUCT APPLICATION

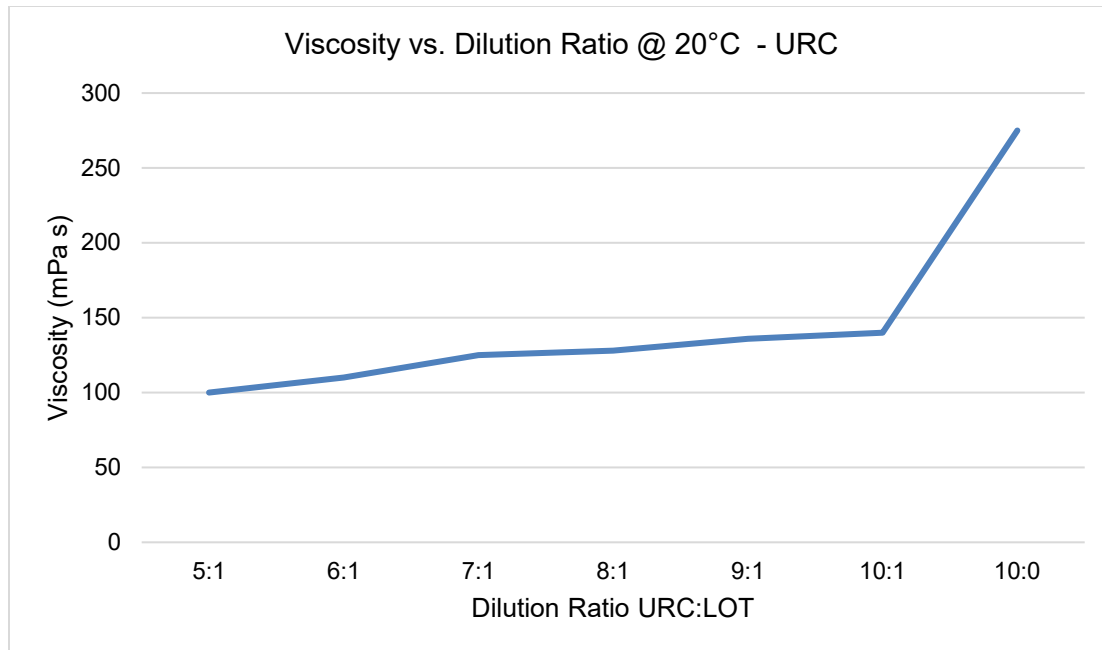
Spraying – Bulk

URC needs to be diluted with the appropriate thinner (LOT) before spraying. The optimum viscosity to give coating quality and thickness depends on the spray equipment and conditions, but normally a dilution ratio of approximately 8:1 to 10:1 (URC:LOT) is required. Suitable spray viscosity is typically 120 to 140 mPa s. If bulk coating material has been agitated, allow to stand until air bubbles have dispersed before use.

URC is suitable both for use in manual spray guns and selective coating equipment. The selected nozzle should enable a suitable even spray to be applied in addition to suiting the prevailing viscosity.

The normal spray gun pressure required is 274 to 413 kPa (40 to 60 lb./sq.in.).

After spraying, the boards should be placed in an air-circulating drying cabinet and left to dry.



Spraying - Aerosol

When applying URC care must be taken to ensure the can is not shaken before use. Shaking the can will introduce excessive air bubbles and will give a poor coating finish. The can should be held at 45°, and 200mm from the substrate to be coated. The valve should then be depressed when the can is pointing slightly off target and moved at about 100 mm/s across the target. To ensure the best coating results are achieved try to use a smooth sweeping motion with small overlap for successive rows.

To ensure penetration of the coating beneath the components and in confined spaces, spray the assembly from all directions to give an even coating. After spraying, the boards should be placed in an air-circulating drying cabinet and left to dry.

Dip Coating

Ensure that the coating material in the container has been agitated thoroughly and has been allowed to stand for at least 2 hours for all the air bubbles to disperse. The board assemblies should be immersed in the URC dipping tank in the vertical position, or at an angle as close to the vertical as possible. Connectors should not be immersed in the liquid unless they are very carefully masked. Our Peelable Coating Mask (PCM) is ideal for this application. Leave submerged for approximately 10 seconds until the air bubbles have dispersed. The board or boards should then be withdrawn slowly (1 to 2 mm / seconds) so that an even film covers the surface. After withdrawing, the boards should be left to drain over the tank or drip tray until the majority of residual coating has left the surface. After the draining operation is complete, the boards should be placed in an air-circulating drying cabinet and left to dry.

Brushing

Ensure that the coating material has been agitated thoroughly and has been allowed to settle for at least 2 hours. The coating should be kept at ambient temperature. When the brushing operation is complete the boards should be placed in an air-circulating drying cabinet and left to dry.

INSPECTION

URC contains a UV trace, which allows inspection of the PCB after coating to ensure complete and even coverage. The stronger the reflected UV light, the thicker the coating layer is. UV light in the region of 375nm should be used for inspection.

ADDITIONAL INFORMATION

Shelf Life

Description	Shelf Life
URC Conformal Coating	
Bulk	24 Months
Aerosol	36 Months
Low Odor Thinners	36 Months
Removal Solvent	36 Months

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
TechnicalSupportTeam@hkw.co.uk
www.electrolube.com

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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

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