



Fine-L-Kote™ UR

Urethane Conformal Coating

2104

Introduction

As a urethane conformal coating, Fine-L-Kote™ UR is highly resistant to most solvents, moisture, fungus and molds. A clear, repairable coating, Fine-L-Kote™ UR is formulated with a black light indicator, Opti/Scan™, to provide checks for conformity in quality control. Coated boards can be reworked by applying soldering iron directly to coating, or complete removal can be achieved by using Trace Technologies™ Conformal Coating Remover (2510-N, 2510-P).

Features / Benefits

- Solvent Resistant
- Recommended for Harsh Environments
- Flexible
- Contains Opti/Scan™

Chemical Components

Propyl acetate..... (109-60-4)	25-30%-Aerosol 49-53%-Bulk
Urethane Prepolymer	<10%-Aerosol 19-23%-Bulk
Cyclotetramethylene oxide..... (109-99-9)	15-20%
Aerosol-Tetrafluoroethane..... (811-97-2)	30-35%
Xylene..... (1330-20-7)	9.28%-Aerosol <20-24%-Bulk
Bulk-Ethyl Benzene..... (100-41-4)	<5-8%
Bulk-Optical Brightener	<.1%

Cure Type	Thermal
Meets/Exceeds IPC-CC-830 MIL-I-46058C	UR Urethane
Thermal Shock	3
Dielectric Constant (@ 10 ⁵ Hz)	4.36
Dielectric Strength (Volts/Mill)	315
Volume Resistivity	2x10 ¹³
Moisture Resistance	4
Resistant to Fungus	Yes
Ease of Repair	3
Flexibility	3
Chemical Resistance	4
Dry Time to Touch	15 min.
Cure Time	24 Hours
Accelerated Cure Time	20 min. @ 120°F 30 min. @ 180°F Two Step Process
Removal (2510-P or 2510-N)	1-5 min.
Burn Through	Yes

Ratings: 5 (Excellent), 4 (Very Good), 3 (Good), 2 (Fair), 1 (Poor)

Typical Properties for 2104

Uncured Liquid Bulk		
Gardener Color		1
Solids (%)		40
Viscosity (cps) Bulk / HV		10-20 / 150-250
NCO Content (%)		2.9
Pounds/Gallon		8.1
Flash Point (°F)		81
Wet Film (40% solids, 3 mil thickness)*		*All conditions of test at 50% R.H. and 72°F
Set to Touch (minutes)		10
Surface Dry (minutes)		45
Hard Dry (hours)		4
Full Cure (hours)		12
Sward Hardness (1 day)		2
Cured Film		
Mechanical Properties		
Color of Film		Clear
Sward Hardness		38
Taber Abrasion Loss (mg) (1000g load, 1000 cycles)		
cs 10 wheel		18
cs 17 wheel		28
Tensile Strength (psi)		5,000
Elongation (%) (20 in/min. Instron)		85
Impact Resistance (pounds)		
Direct		160
Reverse		140
Thermal Shock (Mil -I-46058C, UR)		Passes
(-65°C - + 125°C for appearance – doesn't crack)		
Electrical Properties		
Dielectric Strength (volts/mil)		380
Dielectric Constant	(60 hz)	4.1
	(10 ⁶ hz)	3.8
Insulation Resistance (ohms)		1.5 x 10 ¹²

Environmental Policy

Techspray® is committed to developing products to ensure a safer and cleaner environment. We will continue to meet and sustain the regulations of all federal, state and local government agencies.

Packaging and Availability

Fine-L-Kote™ UR may be ordered in the following container sizes:

2104-12S	12 Ounce Aerosol
2104-P	1 Pint in Glass
2104-PHV	1 Pint in Glass
2104-G	1 Gallon in Metal
2104-GHV	1 Gallon in Metal
2104-5G	5 Gallons in Metal Pail
2104-5GHV	5 Gallons in Metal Pail

Resources

Techspray® products are supported by a global sales, technical and customer services resources.

For additional technical information on this product or other Techspray® products in the United States, call the technical sales department at 800-858-4043, email tsales@techspray.com or visit our web site at: www.techspray.com.

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Countries Outside US
Call to locate a distributor
in your country.

Important Notice to Purchaser/User: The information in this publication is based on tests that we believe are reliable. The results may vary due to differences in tests type and conditions. We recommend that each user evaluate the product to determine its suitability for the intended application. Conditions of use are outside our control and vary widely. Techspray's only obligation and your only solution is replacement of product that is shown to be defective when you receive it. In no case will Techspray® be liable for any special, incidental, or consequential damages based on breach of warranty, negligence or any other theory.



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FINE-L-KOTE™ COATING SELECTION CHART

Fine-L-Kote™ Part Number	2102	2103	2104	2106
Cure Type	Thermal	Thermal	Thermal	Thermal
Meets / Exceeds IPC-CC-830 MIL-I-46058C	SR Silicone	AR Acrylic	UR Urethane	SR Silicone
Thermal Shock	5	2	3	5
Dielectric Constant (@ 10 ⁶ Hz)	2.66	3.1	3.80	2.5
Dielectric Strength (Volts / Mil)	1100 Dry 976 Wet	2086	380	560
Volume Resistivity	1x10 ¹⁴ Dry 9x10 ¹⁴ Wet	4x10 ¹³ Dry	2x10 ¹³	5x10 ¹³
Moisture Resistance	5	2	4	5
Resistant to Fungus	Yes	Yes	Yes	Yes
Ease of Repair	3	5	2	3
Flexibility	5	2	3	5
Chemical Resistance	4	1	4	2
Dry Time To Touch	1 Hour	15 Min.	15 Min.	45 Min.
Cure Time	72 Hours	24 Hours	24 Hours	24 Hours
Accelerated Cure Time	30 min. @ 90°F 45 min. @ 200°F Two Step Process	20 min. @ 120°F 30 min. @ 180°F Two Step Process	20 min. @ 120°F 30 min. @ 180°F Two Step Process	15 min. @ 120°F One Step Process
*Removal (2510)	1-5 min.	1-5 min.	1-5 min.	1-5 min.
Burn Through	Yes	Yes	Yes	Yes

Ratings: 5 - Excellent, 4 - Very Good, 3 - Good, 2 - Fair, 1 - Poor
All coatings may be thinned by using Fine-L-Kote™ UR Thinner (2105)

* Available: Conformal Coating Remover
Product #'s: 2510-P and 2510-N

MOISTURE RESISTANT



2102
2106

THERMAL RESISTANT



2102
2106

CHEMICAL RESISTANT



2102
2104

STATIC RESISTANT



2103