



# Fine-L-Kote™ SR

## Silicone Conformal Coating

### 2102

#### Introduction

A type SR silicone resin conformal coating that has excellent moisture and fungus resistance properties and is UL recognized (UL File Number E95150). Material flexibility allows for vibration, movement, and rapid changes in temperature. Fine-L-Kote™ SR is a durable coating that offers chemical resistance and is recommended for harsh environments. Contains Opti/Scan™ to allow for black light inspection. Coated boards can be reworked by applying soldering iron directly to coating. Coated boards can be stripped using Trace Technologies™ Conformal Coating Remover (2510-N, 2510-P).

#### Features / Benefits

- Moisture, Thermal and Chemical Resistant
- UL Recognized
- Recommended for Harsh Environments
- Flexible
- Contains Opti/Scan™

#### Chemical Components

Toluene.....(108-88-3)	4-5% - Aerosol 7-8% - Bulk 28-30% - HV
Methyltrimethylsilane.....(1185-55-3)	<1%
Dimethylmethylphenylmethoxysiloxane.....(68952-93-2)	12-15% 40-50% - HV
Hexane isomers	
Dipropylene Glycol Methyl Ether Acetate.....(88917-22-0)	<4% - Aerosol 3-6% - Bulk, HV
Acetone.....(67-64-1)	20-25% - Aerosol 45-50% - Bulk
Propane.....(74-98-6)	10-30% - Aerosol
Silicone Polymer	10-12%
2-Butanone.....(78-93-3)	7-10% - HV

Cure Type	Thermal		
Meets/Exceeds IPC-CC-830 MIL-I-46058C	SR Silicone		
Thermal Shock	5		
Dielectric Constant (@ 10 <sup>6</sup> Hz)	2.33		
Dielectric Strength (Volts/Mill)	1100 Dry	976 Wet	
Volume Resistivity	1x10 <sup>14</sup> Dry	9x10 <sup>14</sup> Wet	
Moisture Resistance	5		
Resistant to Fungus	Yes		
Ease of Repair	5		
Flexibility	5		
Chemical Resistance	4		
Dry Time to Touch	1 Hour		
Cure Time	72 Hours		
Accelerated Cure Time	30 min. @ 90°F	45 min. @ 200°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 as Cured Physical Properties for 2102

Operating temperature range °C	-65 to 200
Specific Gravity @ 25°C	1.11
Tensile Strength @ 25°C, psi	600
Elongation @ 25°C percent	60
Durometer Hardness, Shore D, points	25
Volume Coefficient of Thermal Expansion um/m/c	253.6
Thermal Conductivity @ 100°C Watts/mK	0.17
Water Absorption, 100 hours @ 25°C Percent	0.05
Viscosity (cps) Bulk / HV	4-10 / 60-90

### Environmental Policy

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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

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

2102-12S	12 Ounce Aerosol
2102-P	1 Pint in Glass
2102-G	1 Gallon in Metal
2102-GHV	1 Gallon in Metal
2102-5G	5 Gallons in Metal

## 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 <sup>4</sup> Hz)	2.66	3.1	3.80	2.5
Dielectric Strength (Volts / Mil)	1100 Dry 976 Wet	2086	380	560
Volume Resistivity	1x10 <sup>14</sup> Dry 9x10 <sup>14</sup> Wet	4x10 <sup>13</sup> Dry	2x10 <sup>13</sup>	5x10 <sup>13</sup>
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

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# MATERIAL SAFETY DATA SHEET

**Finished Product**

MSDS Ref. No: 2102-12S

**Fine-L-Kote SR**

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Fine-L-Kote SR  
**PRODUCT DESCRIPTION:** Silicone Conformal Coating  
**PRODUCT CODE:** 2102/CAN/EUR-12S  
**PRODUCT FORMULATION NAME:** Fine-L-Coat™ SR

## MANUFACTURER

Techspray, L.P.

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS#</u>	<u>EINECS#</u>
Acetone	30 - 60	67-64-1	200-662-2
Hexane	15 - 40	110-54-3	203-777-6
1-(2-Methoxy-Methyl-Ethoxy)-2-Propanol Acetate	1 - 10	88917-22-0	
Dimethyl methylphenylmethoxy siloxane	5 - 15	68952-93-2	
Methyltrimethoxysilane	>0.01	1185-55-3	
Propane	5 - 25	74-98-6	
Benzene- methyl, (Toluene)	1 - 6	108-88-3	203-625-9

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Transparent, colorless liquid.**IMMEDIATE CONCERNS:** Flammable liquid and vapor.

### POTENTIAL HEALTH EFFECTS

**EYES:** Substance causes substantial eye irritation.

**SKIN:** Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

**INGESTION:** Harmful if swallowed.

**INHALATION:** High concentrations in immediate area can displace oxygen and can cause dizziness, unconsciousness, and possibly death with longer exposure. Keep people away from such vapors without self-contained breathing apparatus.

#### **SIGNS AND SYMPTOMS OF OVEREXPOSURE**

**EYES:** Symptoms of overexposure include: stinging, tearing, redness and pain.

**INGESTION:** For large amounts; abdominal pain, nausea and vomiting.

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### **4. FIRST AID MEASURES**

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

**SKIN:** Wash with soap and water. Get medical attention if irritation develops or persists.

**INGESTION:** Aspiration hazard. If swallowed, vomiting may occur spontaneously, but do not induce. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Call a physician immediately.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

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### **5. FIRE FIGHTING MEASURES**

**FLASHPOINT AND METHOD:** -12.2°C (10°F)TAG CC

**FLAMMABLE LIMITS:** 1.8% to 10%

**GENERAL HAZARD:** Flammable Liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point.

**EXTINGUISHING MEDIA:** Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

**HAZARDOUS COMBUSTION PRODUCTS:** Smoke, fumes and oxides of carbon.

**EXPLOSION HAZARDS:** Vapors may form explosive mixture with air.

**FIRE FIGHTING EQUIPMENT:** As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

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### **6. ACCIDENTAL RELEASE MEASURES**

**LARGE SPILL:** -Implement cleanup procedures.

materials may not provide adequate protection.

Buna  
Butyl  
Natural Latex  
Neoprene  
Solvex  
Viton

**RESPIRATORY:** A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Liquid  
**ODOR:** Characteristic odor.  
**pH:** Not Applicable  
**PERCENT VOLATILE:** 86 at 20°C (68°F)  
**BOILING POINT:** 79°C (134°F)  
**SOLUBILITY IN WATER:** Insoluble  
**SPECIFIC GRAVITY:** 0.83 @ 20°C/20°C  
**(VOC):** 481 g/L (non-exempt VOC)

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## 10. STABILITY AND REACTIVITY

**STABLE:** YES

**HAZARDOUS POLYMERIZATION:** NO

**CONDITIONS TO AVOID:** Heat, flames, ignition sources, and incompatibles.

**STABILITY:** Stable.

**INCOMPATIBLE MATERIALS:** Concentrated nitric and sulfuric acid mixtures, chloroform, alkalis, chlorine compounds, acids, potassium t-butoxide.

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## 11. TOXICOLOGICAL INFORMATION

**EYE EFFECTS:** Not Available

**SKIN EFFECTS:** Not Available

**CARCINOGENICITY:**

**IARC:** NOT listed

**NTP:** NOT listed

**OSHA:** NOT listed

**CERCLA REGULATORY:** Acetone (67-64-1) Contains toluene (#108-88-3).

**CERCLA RQ:** 1000 Lbs.

### TSCA (TOXIC SUBSTANCE CONTROL ACT)

**TSCA STATUS:** All components of this product are either listed or exempt from listing in the TSCA inventory.

**RCRA STATUS:** U220 U002

**OSHA HAZARD COMM. RULE:** Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

### CANADA

**WHMIS (WORKER HAZARDOUS MATERIALS INFORMATION SYSTEM):** This product has been classified according to the hazard criteria of the CPR. This MSDS contains all the information required by the CPR."

**WHMIS CLASS:** Class B2 - Flammable Liquids. Class D2B - Toxic Materials.

**DOMESTIC SUBSTANCE LIST (INVENTORY):** All components of this product are listed on the Canadian DSL.

**CALIFORNIA PROPOSITION 65:** This product contains a component known to the state of California to cause reproductive toxicity: Toluene (CAS#108883)

## 16. OTHER INFORMATION

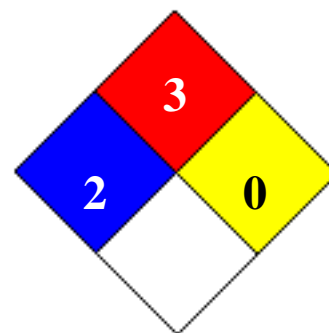
**APPROVED BY:** Pierce A. Pillon    **TITLE:** Chemist

**PREPARED BY:** Steve Cook

### HMIS RATING

<b>HEALTH:</b>		<b>2</b>
<b>FLAMMABILITY:</b>		<b>3</b>
<b>PHYSICAL HAZARD:</b>		<b>0</b>
<b>PERSONAL PROTECTION:</b>		

### NFPA CODES



**DATA SOURCES:** Code of Federal Regulations (CFR)  
The Sigma-Aldrich Library of Regulatory and Safety Data  
OSHA Hazard Communication Standard (29CFR1910.1200)  
Various Federal, State and Local Regulations

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