



# Fine-L-Kote™ AR

## Acrylic Conformal Coating 2103

### Introduction

Economical, acrylic conformal coating that provides insulation against high voltage arcing and corona shorts while resisting moisture and fungus. This product offers limited resistance to common alcohols, ketones, and esters. Durable coating provides a hard surface that is resistant to abrasion and staining. Fine-L-Kote™ AR is formulated with a black light indicator, Opti/Scan™, to allow for black light inspection. Coated boards can be stripped using Trace Technologies™ Conformal Coating Remover (2510-N, 2510-P).

### Features / Benefits

- Static Resistant
- Easy Repair
- Economical Coating
- High Dielectric Strength
- Contains Opti/Scan™

### Chemical Components

|  |                               |
|--|-------------------------------|
| Acetone.....(67-64-1)                    | 12-18%-Aerosol<br>25-30%-Bulk |
| Acrylic Polymer Blend                    | 5-8%-Aerosol<br>20-23%-Bulk   |
| Aerosol-Tetrafluoroethane.....(811-97-2) | 48-53%                        |
| n-Propyl Acetate.....(109-60-4)          | 25-30%-Aerosol<br>50-55%-Bulk |

|  |  |
|--|--|
| Cure Type                                  | Thermal  |
| Meets/Exceeds IPC-CC-830 MIL-I-46058C      | AR Acrylic   |
| Thermal Shock                              | 2  |
| Dielectric Constant (@ 10 <sup>6</sup> Hz) | 3.1  |
| Dielectric Strength (Volts/Mill)           | 2086   |
| Volume Resistivity                         | 4x10 <sup>13</sup> Dry                                 |
| Moisture Resistance                        | 2  |
| Resistant to Fungus                        | Yes  |
| Ease of Repair                             | 2  |
| Flexibility                                | 2  |
| Chemical Resistance                        | 1  |
| 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 Physical Properties for 2103

|                                  |             |
|----------------------------------|-------------|
| <b>% Non Volatile</b>            | 20          |
| <b>Gardner Color</b>             | 1 Max       |
| <b>Acid Value (g KOH/g Acid)</b> | 4.3 – 4.9   |
| <b>Tg 2 (C)</b>                  | 43.5 – 46.5 |
| <b>MFI (g/10 min.)</b>           | 19 @ 190°C  |
| <b>Molecular Weight</b>          | 90,000      |
| <b>Viscosity (cps) Bulk</b>      | 34-54       |

### 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™ AR may be ordered in the following container sizes:

|          |                    |
|----------|--------------------|
| 2103-12S | 12 Ounce Aerosol   |
| 2103-P   | 1 Pint in Glass    |
| 2103-G   | 1 Gallon in Metal  |
| 2103-5G  | 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>6</sup> Hz) | 2.66  | 3.1  | 3.80   | 2.5                                 |
| Dielectric Strength (Volts / Mil)          | 1100 Dry<br>976 Wet                                   | 2086   | 380  | 560                                 |
| Volume Resistivity                         | 1x10 <sup>14</sup> Dry<br>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<br>45 min. @ 200°F<br>Two Step Process | 20 min. @ 120°F<br>30 min. @ 180°F<br>Two Step Process | 20 min. @ 120°F<br>30 min. @ 180°F<br>Two Step Process | 15 min. @ 120°F<br>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

# MATERIAL SAFETY DATA SHEET

**Finished Product**

MSDS Ref. No: 2103-12S

**Fine-L-Kote AR**

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Fine-L-Kote AR**PRODUCT DESCRIPTION:** Acrylic Conformal Coating**PRODUCT CODE:** 2103/CAN/EUR-12S

## MANUFACTURER

Techspray, L.P.

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

| <u>Chemical Name</u> | <u>Wt.%</u> | <u>CAS#</u> | <u>EINECS#</u> |
|----------------------|-------------|-------------|----------------|
| Acrylic polymer      | 10 - 30     | 028262-63-7 |                |
| n-Propyl acetate     | 50 - 55     | 109-60-4    | 2036861        |
| Acetone              | 25 - 30     | 67-64-1     | 200-662-2      |

## EEC LABEL SYMBOL AND CLASSIFICATION



R11 - Highly flammable.

EEC Highly flammable - "F"

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## 5. FIRE FIGHTING MEASURES

**FLASHPOINT AND METHOD:** < 4.4°C (40°F)TAG CC

**FLAMMABLE LIMITS:** LEL: 1.7% to UEL: 8.0%

**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 PROCEDURES:** Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

**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

**SMALL SPILL:** Absorb the liquid and scrub the area with detergent and water. Pick up wash liquid with additional absorbent and place in a disposable container. Do not flush to sewer.

**GENERAL PROCEDURES:** Forms smooth, slippery surfaces on floors, posing an accident risk. Wear a self-contained breathing apparatus and appropriate personal protective equipment. (See Exposure Controls/Personal Protection Section). Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust.

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## 7. HANDLING AND STORAGE

**HANDLING:** Ground and bond containers when transferring material.

**STORAGE:** Store in a cool place in original container and protect from sunlight.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE GUIDELINES:**

**OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)**

| <u>EXPOSURE LIMITS</u> |                         |                  |                         |                     |                         |
|------------------------|-------------------------|------------------|-------------------------|---------------------|-------------------------|
| <u>OSHA PEL</u>        |                         | <u>ACGIH TLV</u> |                         | <u>Supplier OEL</u> |                         |
| <u>ppm</u>             | <u>mg/m<sup>3</sup></u> | <u>ppm</u>       | <u>mg/m<sup>3</sup></u> | <u>ppm</u>          | <u>mg/m<sup>3</sup></u> |

|                  |             |                    |      |      |      |       |
|------------------|-------------|--------------------|------|------|------|-------|
| n-Propyl acetate | <b>TWA</b>  | 200                | 200  |      |      |       |
|                  | <b>STEL</b> | 250                | 250  |      |      |       |
| Acetone          | <b>TWA</b>  | 750 <sup>[1]</sup> | 1800 | 750  | 1780 | NL NL |
|                  | <b>STEL</b> | 1000               | 2400 | 1000 | 2380 | NL NL |

**OSHA TABLE COMMENTS:**

1. NL = Not Listed

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**EYES AND FACE:** Wear safety glasses with side shields (or goggles) and a face shield.

**SKIN:** The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection.

Viton, Solvex, Butyl, Buna, Neoprene.

Butyl Rubber

Solvex

**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.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL STATE:** Liquid

**ODOR:** Characteristic odor.

**APPEARANCE:** Clear, Colorless liquid

**PERCENT VOLATILE:** 79 at 25°C (68°F)

**VAPOR DENSITY:** >1 (Air=1)

**BOILING POINT:** 110°C (230°F)

**MELTING POINT:** 163°C (325.4°F) to 249°C (480.2°F)

**SOLUBILITY IN WATER:** Negligible

**SPECIFIC GRAVITY:** 0.870 to 0.900 (water=1)

**VISCOSITY:** 34 to 54Centipoise at 25°C (68°F)

**(VOC):** 456 g/L (non-exempt VOC)

**10. STABILITY AND REACTIVITY**

**STABLE:** YES

**HAZARDOUS POLYMERIZATION:** NO

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

**INCOMPATIBLE MATERIALS:** Metals. Acidic conditions. Oxidizing materials.

**PRIMARY HAZARD CLASS/DIVISION:** 9

**UN/NA NUMBER:** ID8000

**PACKING GROUP:** NA

**IATA NOTE:** Domestic shipments only. When shipping International contact TechSpray shipping department.

**VESSEL (IMO/IMDG)**

**PROPER SHIPPING NAME:** AEROSOLS IN LIMITED QUANTITIES OF CLASS 2

**PRIMARY HAZARD CLASS/DIVISION:** 2.1

**UN/NA NUMBER:** UN1950

**PACKING GROUP:** NA

**IMDG NOTE:** Page 2102

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## 15. REGULATORY INFORMATION

### UNITED STATES

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

**311/312 HAZARD CATEGORIES:** IMMEDIATE / DELAYED

**FIRE:** YES **ACUTE:** YES **CHRONIC:** YES

**CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)**

**CERCLA REGULATORY:** Acetone (67-64-1)

**REPORTABLE SPILL QUANTITY:** 5000 lbs.

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

**TSCA STATUS:** All chemicals in this product are listed in the TSCA inventory.

**RCRA STATUS:** U002 D001

**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 MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

### EUROPEAN COMMUNITY

#### EEC LABEL SYMBOL AND CLASSIFICATION



R11 - Highly flammable.

EEC Highly flammable - "F"



R20/21 - Harmful by inhalation and in contact with skin.