



# SIMTHANE ESD

## PRODUCT DESCRIPTION

**SIMIRON SIMTHANE ESD** is a unique high performance, three-component, high solids, low VOC urethane floor coating that provides static dissipative electrical properties. **Simiron ESD** Urethane is translucent gray and must be mixed with **U-Tint** to yield a consistent, satin appearance with a light texture.

## FEATURES & BENEFITS

- Electrostatic Discharge Control
- UV Stable
- Excellent Chemical Resistance
- Flexibility
- Satin Finish
- High Solids, Low Odor

## RECOMMENDED USES

- Electrical assembly
- Circuit board handling
- Avionics areas
- Static sensitive manufacturing/packaging
- Clean rooms/Labs

## PRODUCT INFORMATION

<b>Size / Finish</b>	<b>Item Number</b>
1 Gal Kit	40009137

Premeasured 1-Gallon Kits

ESD Urethane kits must be pigmented with 1 pint Simiron. U-Tint per gallon. Since the functional filler in the product is gray, the resulting color will be slightly darker gray than E-Tint in epoxy, which is most apparent with Sandstone.

## TECHNICAL DATA

PHYSICAL DATA	
Color	Translucent gray - must be tinted
Components	4
Finish	Satin
Mix Ratio	1.08 lbs. Part A + 6.45 lbs. Part B + 3.0 lbs. Part C + 1 pint E-Tint
Recommended Film Thickness	2 - 3 mils
Solids by Volume	92%
Solids by Weight	96%
VOC (EPA Method 24)	95 g/L

THEORETICAL COVERAGE	
Wet Mil (microns)	2 - 3 (51 - 76)
Coverage sq. ft./gal. (m <sup>2</sup> /L)	600 (14.7)

CURE TIMES	
Drying Schedule @ 10 mils	72°F (22°C) 35% RH
Tack Free	5 hours
Light Foot Traffic	20 hours
Heavy Traffic	48 hours
Full Cure	5 days

## PHYSICAL PERFORMANCE PROPERTIES

PHYSICAL PROPERTIES	TEST METHOD	RESULTS
Abrasion Resistance (CS-17 Wheel, 1000 g load, 1000 Cycles)	ASTM D4060	12 mg loss
Adhesion	ASTM D4541	300 psi Concrete failure, No delamination
Coefficient of Friction	ANSI/NFSI B101.1	.60
Flexibility, 1/8" Mandrel	ASTM D522	Passes, No cracks
Hardness, Pencil	ASTM D3363	4H
Impact Resistance, Gardner	ASTM D5420	160 in. lb.
Mixed Viscosity	Brookfield	750 cP
Surface Resistance, Point to Point/Ground	ANSI/ESD STM 7.1	1x10 <sup>6</sup> - <1x10 <sup>9</sup> ohms
Tensile Strength	ASTM D2370	7,200 psi
Gloss @ 60° Angle	ASTM D523	60 - 70
UV Resistance (gloss after 1000 hours in QUV)	ASTM G154	Excellent

## CHEMICAL RESISTANCE

CHEMICAL	RESULTS	CHEMICAL	RESULTS	CHEMICAL	RESULTS						
10% Acetic Acid	F	Methyl Ethyl Ketone	E	Betadine	G*						
Vinegar	G	Xylene	E	Bleach	E						
10% Citric Acid	G	Ethylene Glycol	E	Urine	E						
10% Hydrochloric Acid	E	Isopropyl Alcohol	E	Coffee	E						
30% Hydrochloric Acid (muriatic)	E	Mineral Spirits	E	Cola	E						
10% Nitric Acid	G	Brake Fluid	G	Ketchup	F						
50% Phosphoric Acid	G	Transmission Fluid	E	Mustard	G*						
10% Sulfuric Acid	G	Motor Oil	E	Red Wine	E						
37% Sulfuric Acid	F	50:1 Gas/Oil Mixture	E	<i>*Stain is only defect.</i>							
70% Sulfuric Acid	F	E85 Gasoline	E	<table border="1"> <thead> <tr> <th colspan="2">KEY</th> </tr> </thead> <tbody> <tr> <td>E = Excellent</td> <td>G = Good</td> </tr> <tr> <td>F = Fair</td> <td>NR = Not Recommend</td> </tr> </tbody> </table>		KEY		E = Excellent	G = Good	F = Fair	NR = Not Recommend
KEY											
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20% Ammonium Nitrate	E	E95 Gasoline	E								
20% Sodium Chloride	E	Unleaded Gasoline	E								
50% Sodium Hydroxide	E	Skydrol	E								

## SURFACE PREPARATION

Concrete and coated concrete surfaces must be sound, clean, dry and free of contaminants such as dirt, dust, grease, oil, silicones and other contaminants that may negatively affect adhesion.

### MOISTURE VAPOR BARRIER:

A suitable moisture barrier must be in place for concrete slabs on-grade. If a moisture barrier is not in place, seasonal variations in ground moisture can cause excessive moisture vapor transmission (MVT) regardless of results measured prior to coating application. MVT rate must not exceed three pounds per 1,000 square feet per 24 hours, as directed by ASTM F1869. The relative humidity (RH) of the slab must not exceed 75%, as directed by ASTM F2170. If there is a moisture situation in excess of the above rate, the use of **Simiron MVB** Moisture Vapor Barrier Primer may be required. Consult a Simiron Representative for details and application procedures.

### NEW/BARE CONCRETE:

Diamond grind or shotblast to a CSP 1-3 surface profile. Refer to SSPC-SP13/NACE 6 or ICRI Technical Guideline No. 310.2.

New concrete must be cured a minimum of 28 days and should meet moisture vapor transmission (MVT) and relative humidity (RH) thresholds as described in Surface Preparation section. Prime the floor with an epoxy that is tinted a similar color as the topcoat.

### PREVIOUSLY COATED SURFACES:

This product is a topcoat, typically applied over an epoxy system that is tinted a similar color. Thoroughly sand/grind with 60 grit sandpaper or diamonds and clean existing coating to provide proper surface profile. If the prepped surface completely covers concrete, is smooth, and insulative, proceed with application of Simthane ESD per manufacturers instructions.



# SIMTHANE ESD

## ELECTRICAL GROUNDING

**Simthane ESD** can be grounded to the building by installing copper tape underneath it on the epoxy insulator coat and connecting it to common ground.

## SAFETY AND TECHNICAL

Refer to the SDS sheet before use. Safety precautions must be strictly followed during storage, handling, and use. Personal Protective Equipment (PPE) should be worn at all times. PPE will include (but is not limited to): Safety glasses with side shields, high-quality nitrile gloves, and properly fitted NIOSH approved respirators. To acquire additional information or technical and safety data, please visit: [www.simiron.com](http://www.simiron.com).

## TEMPERATURE

Air	60° - 85°F	16° - 29.4°F
Surface	60° - 85°F	16° - 29.4°F
Material	60° - 85°F	16° - 29.4°F

**\*\*Higher temperatures and humidity will shorten pot-life and working time.**

## APPLICATION EQUIPMENT

Assemble all required application equipment. Equipment will include (but is not limited to):

- Drill and Jiffy® type mixing blade
- High quality non-shed 3/8" nap roller covers
- Edge rollers & chip brushes
- Roller pans

## APPLICATION PROCEDURE

1. Pre-mix Part B with a drill and Jiffy® type mixing blade at low speed. Slowly add Part A to the part B can and mix well. Add the mixed resin to the Part C and slowly mix to wet out the light filler and reduce dusting. Mix for 3 minutes or until uniform. Add 1 pint of premixed **U-Tint** per gallon. Mix for 3 additional minutes until mix is uniform and streak free. **Do not mix more than 1 kit at a time.**
2. Using a brush, cut in any edges and areas that will not allow coverage with a roller. Be careful to apply thin around all floor obstructions and at the base of a cove (floor and wall junction). Material applied to cove or vertical surface will run, leaving a pool at the base. These areas can be rolled out with a small roller designed for edging.
3. Pour mixed material into a roller pan and apply with a 3/8" nap roller cover at 600 sq. ft./gal. **If you apply thicker than recommended, you are more likely to create: bubbles, soft film, texture and gloss variation. Applying the coating outside of the coverage rate may negatively affect the ESD properties of the coating.**
4. Dip the roller in the material and lightly roll off excess coating in the roller pan. Roll across your area right to left or left to right, 2 parallel paths on the concrete that are approximately 8-10 feet in length. Repeat the dip and roll process 2 more times, so there are 6 adjacent roller paths in front of the applicator. Agitate the mixed material in the roller pan frequently, as the Part C filler can settle to the bottom of the pan. **Rolling out excess filler from the bottom of the roller pan can impact color and texture.**
5. Back-roll the coating up and back across the previously applied paths (perpendicular) using a V-shape pattern to evenly spread the material and remove roller lines. There should be just enough material on the floor to cover the area.
6. Move over or down the floor and repeat steps 4 and 5. To help prevent visual differences in application be sure to minimize the time between tie-ins. Use control joints or natural breaks as breaking points between mixes.
7. For best results, finish roll the coating on spiked shoes by pulling a roller across the entire area in the same direction as the original roller passes to further blend any remaining overlap and roller marks. **The material will not flow out, so the coating will cure with any defects that are visible. Reroll areas that do not look satisfactory.**
8. **Do not back roll coating that has begun to tack up.** This could result in an orange peel texture and/or a whiteish haze in the coating.

**Applying the coating thicker than recommended or rolling the material when sticky will cause bubbles, roller lines/inconsistent appearance and may negatively affect the ESD properties of the coating.**



# SIMTHANE ESD

## CLEAN UP & DISPOSAL

Clean up mixing and application equipment immediately after use. Use toluene, acetone or xylene; do not use alcohol. Follow solvent manufacturer's safety instructions. Be sure to follow all local, state and federal regulations when disposing of materials.

## MAINTENANCE

To maintain the appearance and extend the life of the newly sealed surface, it is imperative to have a routine maintenance program. Dirt and debris that is tracked over a finished floor will quickly scratch and dull the surface. Place walk-off mats at entrances. Sweep and mop/scrub floors regularly using soft bristles/pads and a mild cleaner. Some cleaning products and equipment or improper use of these can damage a surface. Remove spills quickly to minimize damage and/or stains. For systems that support parked vehicles or other heavy items on rubber wheels, place a small piece of nonporous material, such as sheet metal or plexiglass between the tires and floor to prevent tire marks. Reapplication may be necessary in heavy traffic areas.

## LIMITATIONS

- ⚠ Do not apply without **U-Tint** pigment.
- ⚠ Do not apply at a temperature not recommended.
- ⚠ ESD flooring is only part of an electrostatic charge management solution.
- ⚠ Do not make partial mixes.
- ⚠ Do not apply over loose or unsound concrete, asphalt or bitumen substrates, glazed tile or nonporous brick and tile, magnesite, copper, metal, polyesters, or elastomeric membranes.
- ⚠ Moving joints and shrinkage cracks may reflect through system. Joints that are designed to move may reflect through the finished flooring system if they are not honored.
- ⚠ Applying thicker than recommended or allowing material to pool, may affect the electrical readings.
- ⚠ Tire marking may occur.

## SHELF LIFE AND STORAGE

12 months from date of manufacture when stored indoors in the original unopened container at 60°F – 85°F (16°C – 29°C) in a dry location with humidity below 65%.

- ⚠ Do not allow materials to freeze.

## LIMITED WARRANTY

SIMIRON warrants this product to be free from defect in the material that affects its performance for a period of one year (from date of purchase). SIMIRON will replace at no charge the quantity of the Coating that SIMIRON determines has failed to perform, as the sole and exclusive remedy for any breach of this warranty and/or any other defect or failure of the coating. Proof of purchase is required. Cost of labor for application of any product specifically is excluded. Warranty is void if Simiron products are mixed with or used in conjunction with materials that are substituted for Simiron products. Warranty is nontransferable.

## TECHNICAL ASSISTANCE



Information is available by calling SIMIRON  
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PRODUCT DATA SHEET: 11/2023

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