

## POLYURETHANE HP ESD | GLOSS

### Take Control of Static

**KRETUS® POLYURETHANE HP ESD | GLOSS** gives KRETUS® STATIC CONTROL SYSTEMS ([kretus.com/esd](http://kretus.com/esd)) the high-build advantage other systems lack. It can be applied at 5 to 60 mils thick without losing efficacy.

#### ADVANTAGES

- Meets USDA, FDA, and SCAQMD Standards
- Eligible for LEED Points: Made in California from Partially Recycled Materials
- Body Voltage Generation: <15 volts
- Conductive (over conductive primer):  $>10^4$  to  $<10^6$
- Dissipative:  $>10^6$  to  $<10^9$
- Anti-bacterial
- High Chemical and Stain Resistance
- High Traffic and Hot Tire Resistance
- Impact and Scratch Resistance
- Low Maintenance
- Low Odor
- UV Resistant
- Waterproofing

#### SUGGESTED USES & APPLICATION AREAS

- 911 Call Centers
- Aircraft Hangars
- Clean Rooms, Labs, and Testing Facilities
- Electronics Assembly and Production
- Hazardous Industries (e.g., dust or explosion)
- Packaging Lines
- Pharmaceutical Facilities
- Plastics Manufacturing
- Processing Areas
- Sensitive Product Storage
- Data Server Rooms
- Shipping and Receiving
- Transport Aisles

#### KRETUS® SYSTEMS

- ESD (Static Control)

For all KRETUS® systems, see [kretus.com/systems](http://kretus.com/systems).

#### PRECAUTIONS AND LIMITATIONS

- Material was designed as a top coat in the KRETUS® STATIC CONTROL SYSTEM ([kretus.com/static-control](http://kretus.com/static-control)) and is required for the system to achieve desired electrostatic properties.
- Do not apply any single coat greater than 7 mils thick (~220 sf per gallon). Do NOT install directly over moisture-sensitive concrete, broadcasted vinyl chip, 30-grit or larger quartz, or 80-mesh or larger aluminum oxide.
- Do NOT add a topcoat with non-conductive waxes or finishes—this will render static control properties ineffective.
- Do NOT let material puddle on floor—this will cause white spots to appear when coating cures.
- Adding Poly Colorant to mixture may reduce working time by 5 minutes.
- KRETUS® ESD ADDITIVE may deepen color. Complete samples and onsite mock-ups to ensure desired finish is achieved.
- **Application temperatures:** Material cures faster as temperature and humidity increase. Material cures slower as they decrease.
- temperatures are outside of those recommended, contact your KRETUS® Technical Representative.
- Coverage rates are for estimating purposes only. Factors such as waste, unusual/abnormal substrate conditions, and other unforeseen jobsite conditions may affect actual product yields and are the responsibility of the installer.
- Apply material when temperature is decreasing—adhere to the KRETUS® Dew Point Calculation Chart available at [kretus.com/project-planning](http://kretus.com/project-planning). DO NOT apply under direct sunlight. DO NOT install under inclement weather conditions.

**FINISH AND COLOR**

- Low Gloss.
- Color: See ESD Brochure at [kretus.com/esd](http://kretus.com/esd).

**COMPONENTS**

**Standard Kit**

- Part A: Polyurethane HP Gloss, 1 qt.
- Part B: Polyurethane HP, 1 gal.
- Colorant: Poly Colorant, 16 oz
- Texture: Anti-Slip Bead 50, 8 oz, Anti-Slip Bead 100, 8 oz.
- ESD: ESD Additive, 1 gal.
- SC: Solvent Cleaner, 1 qt.

**Bulk Kit**

- Part A: Polyurethane HP Gloss, 5 gals.
- Part B: Polyurethane HP, 20 gal.
- Colorant: Poly Colorant, 320 oz.
- Texture: Anti-Slip Bead 50, 160 oz, Anti-Slip Bead 100, 160 oz.
- ESD: ESD Additive, 20 gal.
- SC: Solvent Cleaner, 5 gals.

Larger kits may be available through KRETUS® distributor.

**SAFETY, TESTING AND WARRANTY**

- **Safety:** Personal protective equipment and safety conditions must be considered before using any product. Review all relevant and current documentation including Safety Data Sheets ([kretus.com/safety-data-sheets](http://kretus.com/safety-data-sheets)).
- **Testing:** Before installation: Test and look for any unknown site conditions and/or defects. To ensure desired results are achieved, the system should be tested in a small area on site before full installation begins.
- **Warranty:** For warranty to be upheld, Pre- and Post-Job Checklists ([kretus.com/project-planning](http://kretus.com/project-planning)) must be completed.

**STORAGE AND APPLICATION TEMPERATURES**

Ideal Storage Environment	Dry, Out of Direct Sunlight, 60-80°F
Material Temperature During Application	50-70°F and 5°F Above Dew Point
Minimum Substrate Temperature During Application	5°F Above Dew Point
Recommended Application Temperature	60-90°F, <70% RH (Relative Humidity)

**Average Application Time**

Ambient Temperature	60-90°F, <70% RH	50°F, 30% RH	50°F, 75% RH	70°F, 50% RH	90°F, 20% RH	90°F, 80% RH
Working Time	20 min	25-30 min	10-15 min	20 min	15 min	15 min (add viscosity reducer)
Recoat Window	4-6 hrs.	3-6 hrs.	2-6 hrs.	3-6 hrs.	2-6 hrs.	2-6 hrs.
Return to Service (Foot Traffic)	12 hrs.	12 hrs.	12 hrs.	12 hrs.	12 hrs.	12 hrs.
Full Cure (Vehicle Traffic)	5 days	5 days	5 days	5 days	5 days	5 days

**SURFACE PREPARATION**

KRETUS® POLYURETHANE HP ESD | GLOSS is designed to be combined with a KRETUS® coating and installed over another KRETUS® application. Before installing, the substrate must be sound, meaning all necessary concrete repairs have been completed, and it must be clean, dry, and free of any contaminates, moisture, materials, or particles that may hinder material’s adhesion to concrete.

## MIXING AND APPLICATION

Standard Kit Mix Ratio	1 qt A:1 gal B:1 gal ESD: 16 oz Colorant: 16 oz Texture: 1 qt Solvent Cleaner
Mixing Drill	low-RPM, low-torque drill with Jiffy double-bladed mixer
Mixing Directions	Add Colorant to Part A and mix until color is uniform. Add ESD additive and continue mixing until consistency is uniform. Add Part B and continue mixing for up to 1 minute. Add texture and continue to mix until color and consistency are uniform. Total mixing time: 2 minutes.

### Coverage Rates per Standard Kit

Top Coat, 8-12 mils	210-300 sf/kit
Top Coat, 15-20 mils	120-160 sf/kit
Top Coat, 25-30 mils	80-100 sf/kit

Premeasure components to make sure you are using the correct mix ratio. Combine components according to mix instructions. Continue mixing until the coating's consistency is uniform. The coating must remain thoroughly mixed during the application.

Continue mixing during application to ensure a uniform cure.

Keep a wet edge while applying product. Wear spiked shoes when walking on material. For more applications and coverage rates, see KRETUS® General Overview ([kretus.com/product-general-overviews](http://kretus.com/product-general-overviews)).

### PROPERTIES WHEN FULLY CURED

PROPERTIES	TEST METHOD	TYPICAL VALUES
Conductive System Resistivity	ASTM D257	>10 <sup>4</sup> and <10 <sup>6</sup> ohms
Dissipative System Resistivity	ASTM D257	>10 <sup>6</sup> and <10 <sup>9</sup> ohms
Adhesion Strength	ASTM D4541	>400 psi, over epoxy
Coefficient of Friction - Dry	ASTM D2047	0.7
Coefficient of Friction - Wet	ASTM D2047	0.6
Flame Spread/ Critical Flux	ASTM E648	Class 1
Flame Spread/ Rate of Burning	ASTM D635	Self-extinguishing
Flexibility/ Mandrel Bend	ASTM D522	Passes 1/8-in.
Gloss, 60°	ASTM D523	80+
Hardness (König Hardness)	ASTM D4366	170
Impact Resistance	ASTM D2794	120 in-lbs..
Indoor Air Quality	CA 01350	Compliant
Microbial Resistance	ASTM G21	Passes, 0 growth
Tensile Elongation at Break	ASTM D2370	8%
Tensile Strength	ASTM D2370	6,500 psi
UV Resistance	ASTM D4587	Mid to High (Level 2)
Water Absorption	ASTM D570	<0.05
Yellowing Resistance	ASTM G154	< 3.0 ΔE, gray (color tested for visible changes)

## CHEMICAL AND STAIN RESISTANCE

1 = Best for chemical resistance: Chemical has no adverse effects on fully cured coating; remove within 24 hours.

2 = Low potential for stain: Chemical has no adverse effects on fully cured coating if removed within 24 hours.

3 = High potential for stain or degradation: Chemical must be removed within 24 hours of exposure.

NR = Not recommended

Acetic Acid (Component of Vinegar), 10% .....	1	Methanol .....	1
Acetic Acid, 30%.....	2	Methylene Chloride .....	NR
Acetone.....	1	MIBK (Methyl Isobutyl Ketone).....	1
Ammonia, 30%.....	1	Mineral Oil .....	1
Ammonium Hydroxide, 30%.....	1	Motor Oil, SAE 30 .....	1
Antifreeze (Coolant).....	1	Mineral Spirits.....	1
Benzene (Component of Crude Oil).....	1	Mustard, Yellow.....	1
Benzyl Alcohol .....	1	Nitric Acid, 30% .....	1
Betadine, 11% .....	1	Oleic Acid .....	1
Boric Acid, 4% .....	1	Oxalic Acid, 10%.....	1
Brake Fluid, DOT 3 .....	1	Phosphoric Acid, 20% .....	1
Chromic Acid, 10%.....	1	Potassium Hydroxide, 30%	
Chromic Acid, 30%.....	1	(Alkaline Batteries, Soap Manufacturing).....	1
Citric Acid, 30%.....	1	Propylene Glycol .....	1
Ethanol, 95%.....	1	Silver Nitrate, 20% (Photo Labs) .....	1
Ethyl Acetate, 99% (Food/Beverage Facility) .....	1	Hydraulic Fluid (Aviation), Skydrol LD-4 .....	1
Formaldehyde, 37% .....	2	Sodium Chloride, 20%.....	1
Premium Gasoline.....	1	Sodium Hydroxide (Caustic Soda), 50% .....	1
Hydraulic Fluids		Sodium Hypochlorite (Bleach), 10% .....	1
(Machinery, Automobile, Aviation) .....	1	Sodium Hypochlorite (Bleach), 30%.....	2
Hydrochloric Acid, 10%.....	1	Sodium Persulfate	
Hydrochloric Acid, 30%.....	3	(Bleaching and Oxidizing Agent).....	3
Hydrofluoric Acid, 10% .....	1	Sulfuric Acid, 37% (Battery Acid) .....	1
Hydrofluoric Acid, 30% .....	3	Tannic Acid, 20%.....	2
Hydrogen Peroxide, 10% .....	1	Tartaric Acid, 10% .....	1
Hydrogen Peroxide, 50% .....	1	Transmission Fluid .....	1
Iodine, 2%.....	3	Urine, Dog or Cat .....	1
Isopropyl Alcohol .....	1	Urea (Nitrogen-Rich Fertilizer).....	1
Jet Fuel.....	1	Vinegar, Distilled.....	1
Lactic Acid, 30% (Dairy Facility).....	1	Water (Hard Water from Well) .....	1
Lime Juice .....	1	Whisky .....	1
Magnesium Hydroxide.....	1	Wine, Cabernet Sauvignon .....	1
MEK (Methyl Ethyl Ketone) .....	1	Xylene .....	1

Pigments or colorants may affect working times, reduce chemical resistance, or increase potential for stain. Coatings tested at ambient temperature over 1-3 days' exposure to chemical. To ensure desired results are achieved, products should be tested on site before installation.

**DISCLAIMER:** The information contained in this document is intended for use by KRETUS®-qualified and -trained professionals. This is not a legally binding document and does not release the specifier from their responsibility to apply materials correctly under the specific conditions of the construction site and the intended results of the construction process. The most current valid standards for testing and installation, acknowledged rules of technology, as well as KRETUS® technical guidelines must be adhered to at all times. The steps given in this document and other mentioned documents are critical to the success of your project.