

Statproof® ESD Protective Floor Care Products Application and Maintenance Program



Made in America

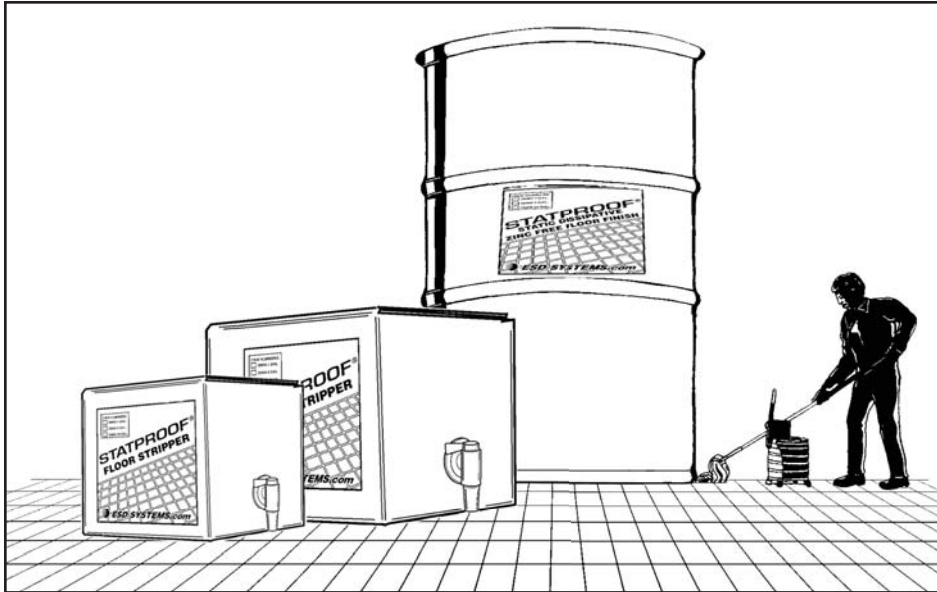


Figure 1. Statproof® Dissipative Floor Care Products

Description

ESD Systems.com Statproof® Zinc-Free Floor Finish is formulated utilizing a highly unique polymer chemistry. The Statproof® formulation provides a highly effective ESD protective flooring surface, providing protection for floor surfaces most prone to generate high levels of static charges. The Statproof® proprietary polymer formula provides consistent and rapid charge dissipation without the use of heavy metal cross-linking agents commonly used in other ESD protective floor finish products. Statproof® Floor Finish is an environmentally safe, free flowing liquid emulsion, which can be easily applied to any hard surface or sealed floor including vinyl, linoleum, rubber, asphalt, sealed or painted wood, terrazzo and concrete. Statproof® dissipates charges from personnel and equipment alike, and prevents static charge generation while building a clear, high gloss floor surface that resists wear.

This Floor Finish's unique chemistry allows it to maintain its dissipative electrical properties in both low and high humidity environments. The Statproof® polymer formula provides electrical properties which significantly lower charge generation when compared to conventional acrylic floor finishes. Statproof® is UL listed for slip resistance for added user safety.

SAFE WALKING SURFACE

UL Classified as to slip resistance only. Statproof® provides superior electrical properties along with a safe walking surface. Underwriters Laboratory has evaluated Statproof® and tested it to their slip resistance standards. To ensure employee safety and to mitigate user's liability exposure, it is important to use floor finish that has been successfully tested for slip resistance, and is properly installed and maintained.

General Guidelines

ESD Systems.com Statproof® Floor Finish eliminates static charges from building up on personnel and equipment, reducing the potential hazard of ESD related failures in sensitive environments. Unlike most conventional static control acrylic floor finishes which rely on zinc cross-linking technology, Statproof® is free of zinc and other heavy metals. This is important to users being monitored, or those desiring to reduce metal discharge into their waste water. Statproof® durability and low cost make it ideal for use as a protective overcoat on expensive conductive floor tiles.

For maximum effectiveness Statproof® Dissipative Floor Finish should be used as part of a comprehensive maintenance program that includes use of other Statproof® Floor Care products such as Statproof® Floor Stripper, Floor Cleaner, Spray Buff or Burnishing Restorer. Proper attention paid to the application and maintenance of Statproof® Floor Finish Products will result in increased durability and enhanced ESD control performance.

Grounding (Typically not Required)

Conventional grounding practices, such as electrically connecting ESD Systems.com Statproof® Floor Finish to earth or building ground is required for applications of floor finish that are less than 50 square feet. For applications that are greater than 50 square feet, grounding is not required. The capacitance of large installations of Statproof® Floor Finish is vastly greater than the capacitance of the human body. This enormous difference in capacitance allows the treated floor to act as a theoretical charge reservoir or natural ground.

The capacitance and surface resistance of ESD Systems.com Statproof® treated floors will decay a 5000 volt charge to 0 in less than 0.1 seconds when tested to Federal Test Method Standard 101C, Method 4046. ESD Systems.com Statproof® Dissipative Floor Finish exceeds industry accepted static decay requirements.

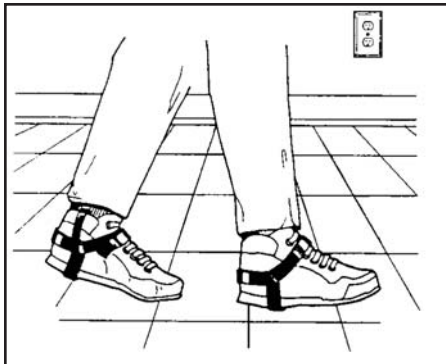


Figure 2. Foot grounders should be used on ESD protective flooring.

Foot grounders should be used in conjunction with any properly grounded conductive or static dissipative flooring surface. It is recommended that foot grounders be worn on both feet. For additional information on ESD Systems.com foot grounding products ask for Tech Brief PS-2030.

Floor Preparation - Surface CONCRETE

Two measures are used to determine a good concrete surface for Statproof® Floor Finish:

1. The surface should be sealed.
2. The surface should be cleaned of all contaminants.

SURFACE

Surface to be finished should be clean, dry, and smooth. Heavy dirt or grease build up should be removed with a stripper or degreaser. DO NOT use Statproof® on surfaces colder than 45°F.

SEALING

Surface preparation is absolutely critical for porous materials such as concrete. Proper preparation simplifies application, increases durability and ensures proper performance. Industrial grade polyurethane, vinyl or acrylic base sealers are recommended to seal highly porous floors before the application of Statproof® Floor Finish. Enamel sealers can be used for bare wood, while enamel undercoat with rust inhibitors are recommended for metal surfaces. DO NOT use Statproof® on surfaces colder than 45°F.

New concrete should be allowed to cure for 60 days before sealing. Concrete surfaces do not all have the same physical and chemical properties. They vary widely due to the variety of ways concrete can be formulated, poured or finished.

There are several methods to prepare problem concrete. Each method depends on the condition of the concrete. Cleaning methods range from: sweeping, vacuuming, wire brush, air-blasting, water jet, steam cleaning, or stripping. Concrete surfaces are very porous and should be properly sealed prior to the application of Statproof® Floor Finish.

Adhesion properties for the concrete sealer can be increased by profiling or rouging the concrete surface through acid etching, rotary drum sanding, scarifying or mechanically scratching the surface. The concrete sealer will reduce the porosity of the concrete and provide a smooth level surface for the finish. The sealer also provides a barrier to prevent any water migrating up through the surface of the concrete.

No Sealer Application: Sealing is recommended for increasing coverage and correcting problem concrete surfaces that are not dry or free from grease, oil, etc. If the subfloor surface is dry, level, and free from dirt, grease, oil, paint, sealer, old adhesives, and other foreign materials it may be suitable to applying Statproof® finish directly onto the concrete.

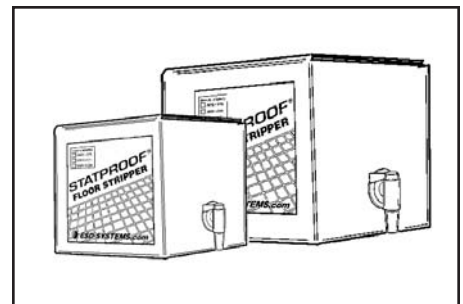
COVERAGE

ESD Systems.com Statproof® Dissipative Floor Finish covers approximately 2000 square feet per gallon per coat on smooth surfaces. Coverage is less on coarse or textured surfaces. With 18% solids, Statproof® Floor Finish is easier to apply with significantly better productivity than competing brands.

DRY TIME

It is recommended that Statproof® be allowed to dry to the touch. At higher relative humidity levels, a longer drying time may be necessary. Do not use force air drying. Wait 6 hours before allowing light traffic, 12 hours before regular traffic, 48 hours before any wet maintenance, and 72 hours before heavy equipment and floor truck traffic.

CLOSE CONTAINER AFTER EACH USE. KEEP FROM FREEZING. DO NOT TAKE INTERNALLY.



Floor Stripping

Figure 3. Statproof® Floor Stripper
Item No. 26044, 2.5 gallon bag-in-box
Item No. 26046, 5 gallon bag-in-box

Stripping the floor is recommended for first time application of any finish. New tiles are supplied with a protective factory finish that protects during installation but should be stripped away prior to any floor finish application. Properly maintained floors should be stripped one to three times annually, depending on traffic and buildup of contaminated finish. Statproof® Floor Stripper is recommended to strip multiple layers of floor finish or coatings.

Equipment needed:

- Push broom
- Single pad 175 RPM stripping machine (with black or brown stripping pad)
- Mops
- Statproof® Stripper, Item #26044
- Buckets
- Wet vacuum

1. Always use in a well ventilated area or wear a suitable respirator. Wear appropriate eye protection such as splash goggles and impervious type protective gloves.

2. Sweep away all loose dirt and contaminants.

3. Dilute Statproof® Floor Stripper 3:1, Three (3) parts HOT water to one (1) part stripper.

4. Apply stripper liberally to around 200 square foot area in need of stripping. Using a clean string mop to apply diluted stripper, uniformly distribute the solution. Let the solution stand for 3 to 8 minutes. Do not allow it to dry. Do not use force air drying.

5. Scrub the treated floor with the stripping machine at 175 rpm using a stripping pad soaked in stripping solution.



Figure 4. Stripping floor.

6. Pick up the loosened floor finish using a wet vacuum or mop. Repeat steps 3 and 4 as required.

7. Thoroughly rinse the floor two to three times with clean water to remove all spent chemicals. NOTE: If rinsing is not completed thoroughly, the remaining chemicals will soften new finish as it is applied, thereby diminishing its durability.

8. Pick up the rinse water with a wet vacuum or mop.

9. Inspect floor to be sure all stripper and old finish has been removed. Allow floor to dry thoroughly before applying any new floor finish.

For additional usage information and a MSDS sheet on ESD Systems.com Statproof® Floor Finish Stripper, ask for Tech Brief PS-2027.

It is recommended that the stripped surface be tested after rinsing to ensure that high pH residues do not remain. Some high pH strippers will leave a residue behind even after several rinses. A high pH can affect the floor finish curing time as well as other properties of the finish. To test for high pH residue, test either the rinse water or the floor using either a pH measurement instrument or a piece of pH indicating litmus paper. A safe pH level will be between 7.0 (neutral) and 9.0 (mildly, alkaline). Two sources for litmus paper are Micro Essential Laboratory, Brooklyn, NY 11210 or Fisher Scientific, Fair Lawn, New Jersey 07410.

Floor Finish Application

It is recommended that three coats of Statproof® Floor Finish be put down in the initial application.

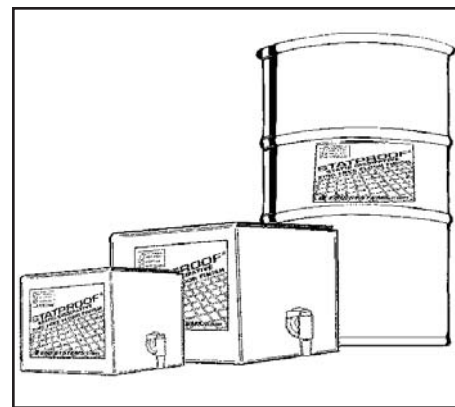


Figure 5. Statproof® Dissipative Floor Finish

Item No. 26002, 2.5 gallon bag-in-box

Item No. 26006, 5 gallon bag-in-box

Item No. 26008, 55 gallon drum

Equipment needed:

- Statproof® Dissipative Floor Finish
- Clean rayon (or cotton blend) mop dedicated to Statproof® use only
- Clean bucket, and wringer dedicated to Statproof® use only

If Statproof® freezes, allow it to thaw to 70°C before application.

1. Always use in a well ventilated area or wear a suitable respirator. Wear appropriate eye protection such as splash goggles and impervious type protective gloves.

2. Pour Dissipative Floor Finish into a clean bucket. Apply using a damp clean rayon or cotton mop. Make sure to use a dedicated mop, do not use a mop that has been used to strip or mop floors. Coat the floor uniformly, avoiding excessive foaming.

3. Allow the first coat to dry for 60 minutes, then apply a second coat.

4. Repeat step 2 for the third coat.

5. Allow last coat to dry overnight or minimum of 6 hours before permitting any kind of floor traffic on the newly coated area. An overnight curing time is preferred.

6. Allow minimum of 48 hours of drying time before performing any wet maintenance (restoring and spray burnishing) on the newly coated floor.

Floor Finish Maintenance

DRY MOP PROGRAM

Keep the floor surface clean. Use an untreated dust mop or push broom daily or as needed to remove accumulated dirt and insulative contaminants.

Statproof® Dissipative Cleaner

Our Statproof® Dissipative Floor Cleaner is specifically formulated to clean floors treated with Statproof® Dissipative Floor Finish. Statproof® Floor Cleaner is formulated with dissipative agents that will rejuvenate and improve the static dissipative properties of floors treated with Statproof® Floor Finish.

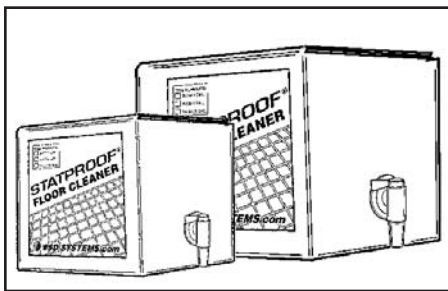


Figure 6. Floor maintenance with Statproof® Dissipative Floor Cleaner, Item No. 26024, 2.5 gallon bag-in-box
Item No. 26026, 5 gallon bag-in-box

Our Dissipative Cleaner effectively cleans without leaving behind any harmful residue that can dull the surface or impede dissipation properties. Statproof® Cleaner is a non-alkaline detergent with a neutral pH, which requires no rinsing. Use

the following procedure to clean treated floors with ESD Systems.com Statproof® Cleaner. This product is also recommended for use on conductive floor tile.

CLEANING SCHEDULE

Heavy to moderate traffic floors should be cleaned 1-2 times per week. Light traffic floors should be cleaned once a week or as needed.

Equipment needed:

- Push broom
- Mop (dedicated to Statproof® use only)
- Buckets
- Statproof® Dissipative Cleaner, Item #26024

1. Always use in a well ventilated area or wear a suitable respirator. Wear appropriate eye protection such as splash goggles and impervious type protective gloves.

2. Dry mop the surface to be cleaned.

3. Dilute Statproof® Dissipative Cleaner, two (2) quarts of cleaner concentrate to five (5) gallons of clean water.

4. Thoroughly mix the cleaner concentrate before pouring the cleaner into the bucket. Use a clean untreated mop (dedicated to Statproof® use only) to damp mop the area. Wring out excess fluid and do not flood a treated floor with water. Do not use scrubbing machine to clean the floor.

5. Allow 20 to 40 minutes drying time before walking on the cleaned area.

Clean only with Statproof® Cleaner, do not damp mop with plain water or with a high alkaline or high residue cleaner. Using harsh detergents can damage a treated floor's static dissipative properties.

For additional usage information and a MSDS sheet on ESD Systems.com Statproof® Floor Cleaner, ask for Tech Brief PS-2029.

Statproof® Dissipative Spray Buff

Regular spray buffing will help to maintain floors treated with Statproof® Floor Finish at peak performance and appearance. Spray buffing with Statproof® Dissipative Spray Buff will remove light surface soil while reviving the high gloss and electrical properties of the treated surface.

SPRAY BUFF SCHEDULE

Heavy to moderate traffic floors should be spray buffed 1-2 times per week. Light traffic floors should be buffed once a week or as needed.



Figure 7. ESD Systems.com Statproof® Spray Buff, Item No. 26028, ready-to-use, 1 quart spray bottle, case of 12.

Equipment needed:

- Push broom
- 175-1500 RPM buffing machine
- Statproof® Spray Buff, Item #26028.

1. Always use in a well ventilated area or wear a suitable respirator. Wear appropriate eye protection such as splash goggles and impervious type protective gloves.

2. Sweep away all loose dirt and contaminants. Do not spray buff on a dirty floor. If the floor is soiled, first perform the cleaning procedure using our Statproof® Floor Cleaner

3. Lightly spray a small area with the Statproof® ready-to-use Dissipative Spray Buff. Treat a small area at a time.

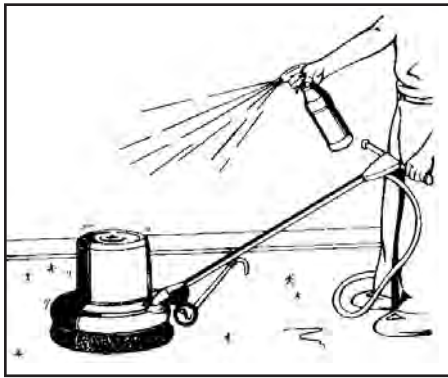


Figure 8. Spray buffing with ESD Systems.com Statproof® Dissipative Spray Buff

4. Buff the sprayed area at 175-300 RPM using a red pad or at 1000-1500 RPM using a white or beige pad. Buff area until clean and glossy. All black marks and scuffs should be removed. The area must be buffed while in a liquid state.

5. After high speed buffing, dry mop the entire area with an untreated mop.

For additional usage information and a MSDS sheet on ESD Systems.com Statproof® Dissipative Spray Buff, ask for Tech Brief PS-2031.

Statproof® Burnishing Restorer

Statproof® Burnishing Restorer is a ready to use formulation that renews the unique protective properties and gloss of Statproof® Dissipative Floor Finish with less of an investment in time, effort and money. Static decay properties, surface resistance characteristics and durability of the floor finish can be extended dramatically.

The Restorer extends the re-coat cycle and significantly reduces the cost of maintenance.

BURNISHING RESTORER SCHEDULE

Heavy to moderate traffic floors should be treated 2-4 times per month. Light traffic floors should be treated once a month or as needed.

Equipment needed:

- Push broom
- 1000-1500 RPM burnishing machine (with a white or beige pad)
- Statproof® Burnishing Restorer, item #26036

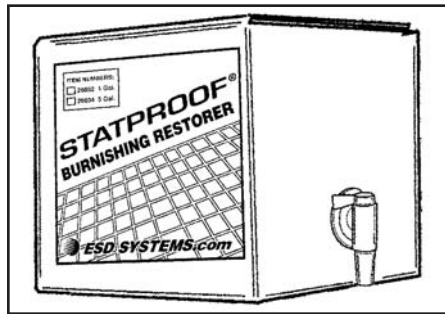


Figure 9. Statproof® Burnishing Restorer, Item No. 26036, ready-to-use 2.5 gallon bag-in-box.

1. Dry mop the coated area to remove loose dirt from coated floor.
2. Use a clean untreated string mop to apply a thin coat of restorer onto floor. Allow it to dry 20 to 40 minutes.
3. Burnish the coated area with a 1000 to 1500 RPM rotary machine and a clean beige burnishing pad.
4. Dry mop the entire burnished area again.

For additional usage information and a MSDS sheet on ESD Systems.com Statproof® Burnishing Restorer, ask for Tech Brief PS-2032.

Statproof® Dissipative Floor Finish Physical Properties

Base:

Acrylic Polymer

Description:

Aqueous Acrylic Emulsion, Nonhazardous material as defined in (29 CFR 915.4)

Abrasion Resistance:

Exc. Crockmeter @ 50% RH

Color:

Light blue opaque, dries clear

Density:

8.42 lbs/gal

Freeze/Thaw Stability:

Exc. 3 Cycles @ -10°C

pH:

8.5 - 9.0

Slip Resistance:

UL Classified*

Solids:

18%

Solvents:

Water

Thermal Stability:

Exc. 50°C/1 month

Viscosity:

3.3 cps

Working Humidity:

Range 30-60% RH

*Underwriters Laboratory (UL) tested and classified as slip resistance only. UL Classification Number SA6524.

Electrical Properties

Surface Resistance:

$10^6 - 10^9$ ohms per ESD-S7.1

Charge Generation:

Zero per AATCC Step Test Method 134-1979

Charge Decay:

5000v - 0v in < 0.1 seconds

Testing

It is recommended that applications of Statproof® Dissipative Floor Finish be tested periodically to ensure that insulative contaminants such as dirt and grime are not building up on surface. For optimal performance the surface should be regularly maintained and kept cleaned. Testing for either point to point resistance (RTT) or point to ground resistance (RTG) will indicate if the floor finish needs maintenance. If the surface is clean, high resistance readings usually indicate that the floor finish is becoming worn and is in need of replenishing of solids. These solids are worn away over time due to normal floor traffic. Hence, the high floor traffic areas will need more frequent maintenance than low traffic areas. Maintenance is typically required if resistance measurements are above 10^{10} ohms.

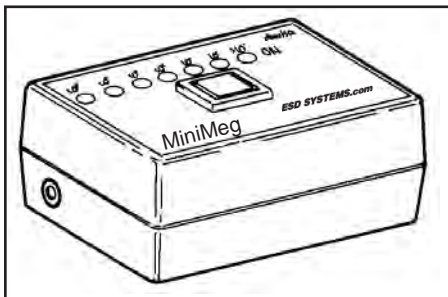


Figure 10. 41256 Meg Pocket Megohmmeter

VERIFICATION TESTING

For quick and easy verification of surface resistance, ESD Systems.com recommends the use of our 41256 Pocket Megohmmeter. For detailed information on the Pocket Megohmmeter ask for Tech Brief PS-2078.

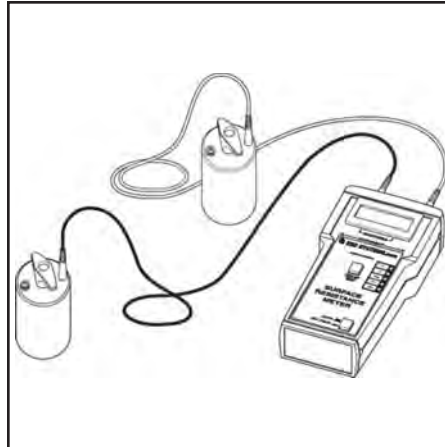


Figure 11. 41290 set up to test resistance point to point.

MEGOHMMETER TESTING

ESD Systems.com recommends the ESD Association's Standard 7.1 test procedure along with a megohmmeter for determining both RTT and RTG measurements. Our 41273 Surface Resistance Test Kit will provide all the necessary equipment to test in accordance with the above mentioned ESD Association standard. For detailed information on the Surface Resistance Test Kit ask for Tech Brief PS-2060. ESD-S 7.1 is available from the ESD Association, 7902 Turin Rd., Suite 4, Rome, NY 13440-2069, (315) 339-6937.

NOTE: Statproof® Floor Care Products do not have a set life span. The chemicals are not known to degrade over time when stored at the proper temperature conditions as stated in the Material Safety Data Sheet. We also recommend that the products be stored in the original containers and sealed when not in use.



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Limited Warranty

ESD Systems.com expressly warrants that for a period of one (1) year from the date of purchase, our Statproof® Static Dissipative Floor Care Products will be free of defects in material. Within the warranty period, the material will be tested and replaced at our option, free of charge. Call Customer Service at 508-485-7390 for a Return Material Authorization (RMA) and proper shipping instructions and address. You should include a copy of your original packing slip, invoice, or other proof of purchase date. Any material under warranty should be shipped prepaid to the ESD Systems.com factory. Warranty repairs will take approximately one week.

Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

Limit of Liability

In no event will ESD Systems.com or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

ESD SYSTEMS.com

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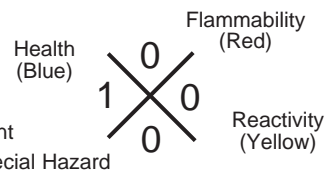
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Material Safety Data Sheet
 May be used to comply with
 OSHA's Hazard Communication Standard,
 29 CFR 1910.1200, Standard must be
 consulted for specific requirements.

NFPA Designation 704

Degree of Hazard
 4 = Extreme
 3 = High
 2 = Moderate

1 = Slight
 0 = Insignificant



IDENTITY (As Used on Label and List) Statproof® Dissipative Floor Finish	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.
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Section I

Manufacturer's Name ESD Systems.com	Emergency Telephone Number (508) 485-7390
Address (Number, Street, City, State, and Zip Code) 432 Northboro Road Central, Marlboro, MA 01752	Telephone Number for Information (508) 485-7390
	Date Prepared 2-1-2003
	Signature of Preparer (Optional)

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name[s])	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Diethylene Glycol Methyl Ether CAS No.: 111-77-3	NE	NE		1-5
Modified Acrylic Polymer (Non Hazardous)				30-60
Polymer Emulsions (Non Hazardous)				1-5
Water (Non Hazardous)				30-60

This product contains NO toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR372.

HMIS Rating: Health: 1, Flammability: 0, Reactivity: 0, Pers. Protect: B

Section III - Physical/Chemical Characteristics

Boiling Point	212°F	Specific Gravity (H ₂ O - 1)	8.9 lbs/gallon	>1.0
Vapor Pressure (mm hg.)	N/A	Melting Point		N/A
Vapor density (AIR = 1)	<1.0	Evaporation Rate (Butyl Acetate = 1)		<1.0
Solubility in Water Complete				
Appearance and Odor Milky, light blue liquid				

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) N/A	Flammable Limits N/A	LEL	UEL
Extinguishing Media Foam, CO ₂ , Dry Chemical and Water			
Special Fire Fighting Procedures None Required			
Unusual Fire and Explosion Hazards None known			

Section V - Reactivity Data

Stability	Unstable		Conditions to Avoid Excessive heat and freezing temperatures. Avoid contact with acids.
	Stable	X	

Incompatibility (Materials to Avoid)

None known

Hazardous Decomposition or Byproducts

CO, CO₂, and unidentified organic compounds.

Hazardous Polymerization	May occur		Conditions to Avoid N/A
	Will Not Occur	X	

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Minor Irritation	Minor Irritation	Dilute with water

Health Hazards (Acute and Chronic):

Acute: Continuous skin contact may cause dermatitis. Eyes: possible irritation to possible permanent injury. Skin: moderate irritation to possible allergic reaction. Inhalation: may cause discomfort to nose, throat. Ingestion: discomfort to collapse, coma.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	None	None	None

Signs and Symptoms of Exposure:

May result in irritation of the skin, eyes and respiratory tract.

Medical Conditions

Generally Aggravated by Exposure: None Known

Emergency and First Aid Procedures

Inhalation: Move subject to fresh air. Skin: Wash with soap and water. Ingestion: Drink several glasses of water (do not induce vomiting) Contact a physician; Eyes: flush 15 minutes with water.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken In Case Material is Released or Spilled

Keep spectators away. Dike and contain spill with inert material (e.g. sand, earth). Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.

Waste Disposal Method

Coagulate the emulsion by the stepwise of Ferric Chloride and Lime. Remove the clear supernatant liquid and flush to a chemical sewer. Incinerate the solids and the contaminated diking material according to local, state, and federal regulations.

Precautions to be Taken in Handling and Storing

Wear gloves, goggles, and protective clothing.

Other Precautions

Shipping Information

DOT shipping name: NOS

DOT Hazard Class: None

DOT Labels Required: None

Freight Description: Floor Finish

Section VIII - Control Measures

Respiratory Protection (Specify Type)

Wear (MSHA/NIOSH-approved) respirator where exposure limits are exceeded.

Ventilation	Local Exhaust	Special
	Mechanical at point of contamination release	None
	Mechanical (General)	Other

Protective Gloves

Impervious/Neoprene

Eye Protection

Chemical splash goggles (ANSI Z-87.1)

Other Protective Clothing or Equipment

Wear protective clothing to prevent contact with product. Eyewash station

Work/Hygienic Practices

N/A = Not Applicable; NE = None Established