Application and Maintenance Program Statguard® Low-VOC Dissipative Floor Finish

Made in the United States of America

Figure 1. Statguard® Low-VOC Dissipative Floor Finish: 5 gallon bag-in-box

Description

Statguard® Low-VOC is a static dissipative zinc free floor finish that will convert non-ESD flooring to an ESD protective floor. Statguard® Low-VOC floor finish will protect and maintain ESD permanent flooring such as vinyl composition tiles, sheet vinyl and rubber tiles. Statguard® Low-VOC floor finish provides a resistance range (1 x 10^7 to < 1 x 10^9 ohms) and low charge generation (less than 100 volts) that meets or exceeds ANSI/ESD S20.20 required limits as an ESD protective floor or as a personnel grounding method. Statguard® Low-VOC is made with low volatile solvents in order to meet the requirements of CARB and other regional VOC regulations. Statguard® Low-VOC is free of zinc, VOCs, APEs, and other hazardous ingredients. This is important to users being monitored for zinc output, or those desiring to reduce the exposure of dangerous chemicals to workers and the environment. The coating resists abrasion and scuffing in order to maintain ESD performance and appearance. Statguard® Low-VOC is packaged in bag-in-boxes and lot coded for quality control.

SAFE WALKING SURFACE

UL Listed as slip resistant. Statguard® Low-VOC Floor Finish provides superior electrical properties along with a safe walking surface. Underwriters Laboratory has evaluated Statguard® Low-VOC Floor Finish 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

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

NOTE: Statguard® Dissipative 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 Safety Data Sheet. We also recommend that these products be stored in their original containers and be sealed when not in use.

Grounding (Typically Not Required)

Conventional grounding practices, such as electrically connecting Statguard® Low-VOC Floor Finish to protective earth or equipment ground is required only 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 Statguard® Low-VOC 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 Statguard® Low-VOC Floor Finish 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. Statguard® Low-VOC Floor Finish exceeds industry accepted static decay requirements.

ESD footwear need to be worn to ground personnel. It is recommended that foot grounders be worn on both feet. For additional information call customer service.

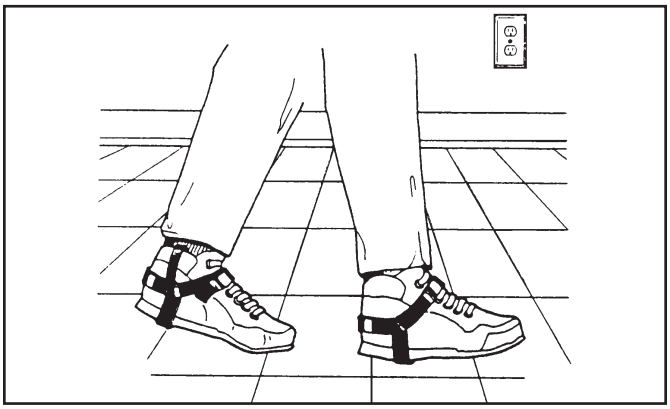

Figure 2. Personnel grounding, foot grounders should be used on ESD protective flooring

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Floor Preparation - Surface

CONCRETE
Two measures are used to determine a good concrete surface for Statguard® Low-VOC Floor Finish:

1. The surface should be sealed.

2. The surface should be cleaned of all contaminants.

SURFACE CLEANING
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 Statguard® Low-VOC Floor Finish on surfaces colder than 45° F.

SURFACE 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 Statguard® Low-VOC Floor Finish. Enamel sealers can be used for bare wood, while enamel undercoat with rust inhibitors are recommended for metal surfaces.

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 Statguard® Low-VOC 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. Always follow manufacturer's recommendations when applying. 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 Statguard® Low-VOC Floor Finish directly onto the concrete.

COVERAGE
Statguard® Low-VOC Floor Finish covers approximately 2000 square feet per gallon per coat on smooth surfaces. Coverage is less on coarse, textured, or porous surfaces.

DRY TIME
One hour minimum between first and second coat. After second coat it is recommended that Statguard® Low-VOC wait six hours before allowing light traffic, 12 hours before regular traffic and 72 hours before heavy equipment and floor truck traffic Wait seven days before all wet maintenance, buffing, or burnishing. Premature wet maintenance will negatively effect film formation and electrical properties. At higher relative humidity levels, a longer drying time may be necessary.

NOTE: Properly screw cap back on bag-in-box packaging after each use.

Floor Stripping

Figure 3. Statguard® Floor Stripper: 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 two times annually, depending on traffic and buildup of contaminated finish. Statguard® 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
- Statguard® Floor Stripper
- Buckets
- Wet vacuum
- Statguard® Neutralizer

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

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2. Sweep away all loose dirt and contaminants.

3. Dilute Statguard® Floor Stripper 5:1, five parts warm water to one 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 three to eight minutes. Do not allow it to dry.

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

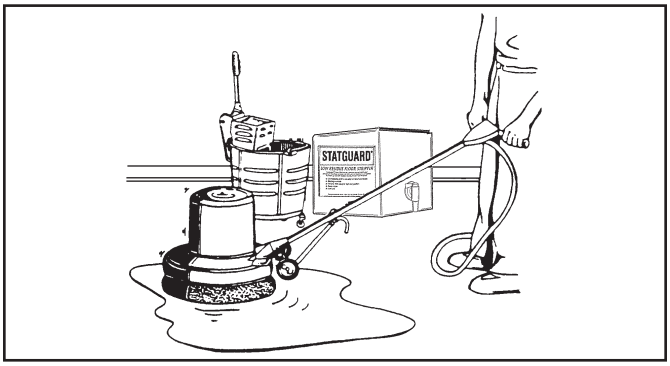

Figure 4. Stripping floor

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

Use neutralizer item 46022 to rinse and bring the pH level down to pH level 7.0 (neutral). Using neutralizer reduces the number of rinse steps needed to get the pH level of the floor to pH level 7.0 (neutral).

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. If neutralizer is not used thoroughly rinse the floor three to four 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. Be sure to check the pH level of the floor is 7.0 (neutral) before proceeding. 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 7.0 (neutral). Litmus paper is available - see item 46023.

9. Inspect floor to be sure all stripper and old finish has been removed. Any shinny spots on the floor indicate old finish has not been removed. Allow floor to dry thoroughly after final rinse before applying any new floor finish.

For additional usage information and a SDS sheet on Statguard® Floor Stripper, ask for Technical Bulletin TB-7026.

Floor Finish Application

Figure 5. Statguard® Low-VOC Dissipative Floor Finish: 5 gallon bag-in-box

Due to the high percent solids of Statguard® Low-VOC Floor Finish (23%) it is recommended that two coats be applied in the initial application. In high traffic applications three coats may be required (do not apply more than two coats in 24 hours unless humidity is greater than 30%). Two coats of Statguard® Low-VOC 23% solids finish is similar to three coats of an 18% solids finish and three is equivalent to four coats of 18% solids finish.

NOTE: It is not recommended to put down more than three coats of Statguard® Low-VOC Floor Finish in 24 hours. For low humidity application, less than 30% RH, do not apply more than two coats in 24 hours.

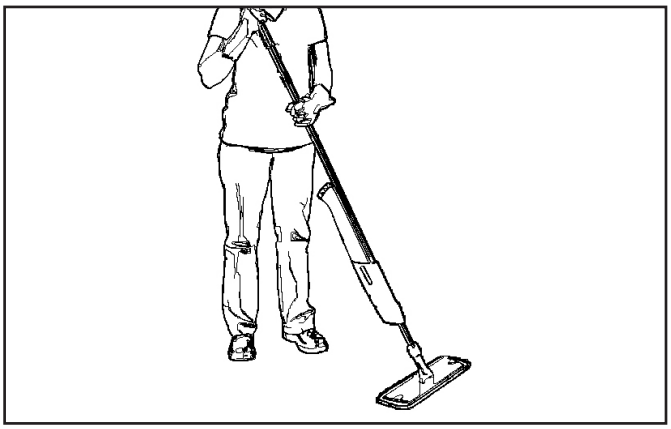

Figure 6. Applying floor finish with Flat Mop (optional).

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FLAT MOP PROGRAM (OPTIONAL)

1. Flat mop can come with a refillable dispenser, that allows for easier determination of proper amount of Floor Finish / sq ft. For example, if the floor finish application rate is 1 gallon / 2000 sq ft, a 32 oz dispenser holds 500 sq ft of finish.
2. Flat mopping systems reduce workers fatigue as they are lighter in weight. Roughly three pounds when wet vs the traditional cotton loop mops which can weigh eight to ten pounds when wet.
3. The Flat mop with dispenser is faster, as one does NOT need to constantly "dip the mop and squeeze out excess".
4. The flat mop doesn't hold as much residual finish as a string mop, so the application of the proper amount of Floor Finish, is more precise.

Equipment needed:

- Statguard® Low-VOC Floor Finish
- Clean rayon (or cotton blend) mop dedicated to Statguard® Low-VOC Floor Finish use only
- Clean bucket, and wringer dedicated to Statguard® Low-VOC Floor Finish use only
- Flat mop (Optional)

If Statguard® Low-VOC Floor Finish freezes, allow it to thaw to 70°F before application.

1. Always use in a well ventilated area. Wear appropriate eye protection such as splash goggles and impervious type protective gloves.
2. Pour 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 a minimum of 60 minutes, and then apply the second coat.
4. If it is for a high traffic application and the humidity is above 30% RH, repeat step three for the third coat.
5. Allow last coat to dry overnight or minimum of six hours before permitting any kind of floor traffic on the newly coated area. An overnight curing time is preferred.
6. Allow minimum of seven days of drying time before performing any wet maintenance (spray buffing, burnishing, and floor cleaner) on newly coated floor. Premature wet maintenance will negatively effect film formation and electrical properties.

Floor Finish Maintenance

Preventative maintenance is important to maintain the electrical properties and appearance of the finish. The use of carpet runners and tack mats are suggested when areas of high dirt or other contaminants are leading onto Statguard® Low-VOC Floor Finish areas. Although wet maintenance can be performed after seven days of drying, Statguard® Low-VOC Floor Finish electrical properties can last three to four months with regular dry maintenance.

DRY MOP PROGRAM

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

Statguard® Dissipative Floor Cleaner

Figure 6. Statguard® Dissipative Floor Cleaner: 5 gallon bag-in-box

Statguard® Floor Cleaner is formulated with dissipative agents that will rejuvenate and improve the static dissipative properties of floors treated with Statguard® Low-VOC Floor Finish. Statguard® Dissipative Cleaner effectively cleans without leaving behind any harmful residue that can dull the surface or impede dissipation properties. Statguard® Floor Cleaner is a non-alkaline detergent with a neutral pH, which requires no rinsing. Use the following procedure to clean treated floors with Statguard® Floor Cleaner. This product is also recommended for use on conductive floor tile and epoxy.

CLEANING SCHEDULE

Heavy to moderate traffic floors should be cleaned once a week or as needed. Light traffic floors should be cleaned as needed. Allow the floor finish to dry for at least seven days before performing any wet maintenance.

Equipment needed:

- Push broom
- Mop (dedicated to Statguard® Floor Cleaner use only)
- Buckets
- Statguard floor cleaner Dissipative Cleaner

1. Always use in a well ventilated area. Wear appropriate eye protection such as splash goggles and impervious type protective gloves.
2. Dry mop the surface to be cleaned.
3. Dilute Statguard® Dissipative Cleaner 10:1, two quart of cleaner concentrate to five gallons of clean water.
4. Thoroughly shake the cleaner concentrate container before pouring the cleaner into the bucket. Use a clean untreated mop (dedicated to Statguard® Floor Cleaner use only) to damp mop the area. Wring out excess fluid so mop is not dripping and do not flood a treated floor with water. Do not use scrubbing machine to clean the floor.

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

Clean only with Statguard® Floor 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, or can degrade the finish.

For additional usage information and a SDS sheet on Statguard® Floor Cleaner, ask for Technical Bulletin TB-7041.

Spray Buff

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

SPRAY BUFF SCHEDULE

Figure 7. Statfree® Spray Buff: One quart spray bottle, case of 12

Heavy to moderate traffic floors should be spray buffed once a week or as needed. Light traffic floors should be spray buffed as needed. Allow the floor finish to dry for at least seven days before spray buffing.

Equipment needed:

- Push broom
- 175-1500 RPM buffing machine (with a white or beige pad)
- Statfree® Dissipative Spray Buff

1. Always use in a well ventilated area. 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 Statguard® Floor Cleaner.

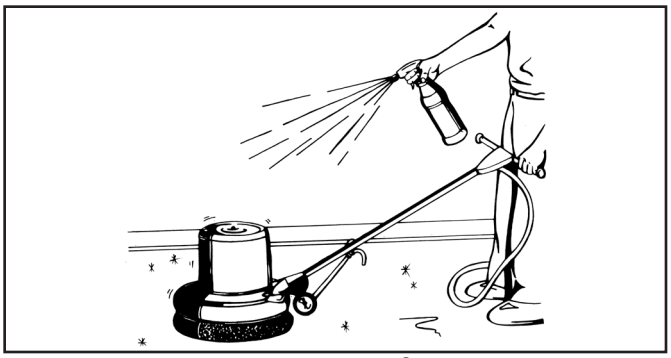

Figure 8. Spray buffing with Statfree® Dissipative Spray Buff

3. Lightly spray a small area with the Statfree® Dissipative Spray Buff Treat a small area at a time.

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.

Statfree® Burnishing Restorer

Figure 9. Statfree® Burnishing Restorer: 2.5 gallon bag-in-box

Statfree® Burnishing Restorer is a ready to use formulation that renews the unique protective properties and gloss of Statguard® Low-VOC 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 two to four times per month. Light traffic floors should be treated once a month or as needed.

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Equipment needed:
- Push broom
- 1000-1500 RPM burnishing machine (with a white or beige pad)
- Statfree® Burnishing Restorer

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 SDS sheet on Statfree® Burnishing Restorer, ask for Technical Bulletin TB-7044.

Statguard® Low-VOC Dissipative Floor Finish

Physical Properties

Base:
No-zinc Acrylic Polymer

Description:
Aqueous Acrylic Emulsion, Non hazardous material as defined in (29 CFR 915.4)

Color:
White liquid, dries clear

Density:
8.56 lbs/gal

Freeze/Thaw Stability:
Exc. 3 Cycles @ -10°C

pH:
7-8

Slip Resistance:
UL Listed* > 0.5 SCOF

Solids:
23%

Solvents:
Water

Thermal Stability:
Exc. 50°C/1 month

Viscosity:
10 cps

Working Humidity:
Range 20-70% RH

*Underwriters Laboratory (UL) tested and listed as slip resistance only. UL Classification Number GA632.

RoHS 2, REACH and Conflict Minerals Statement

None of the RoHS 2 restricted materials or REACH substances of very high concern as of 2014/12/17, or Conflict Minerals are intentionally added in manufacturing this product. Ref: European Union Directive 2011/65/EU and Regulation (EC) No. 1907/2006/CE. See Desco Limited Warranty at DescoIndustries.com.

Limited Warranty, Warranty Exclusions, Limit of Liability and RMA Request Instructions

See Desco Industries Inc. Warranty
http://www.descoindustries.com/Warranty.aspx

Statguard® Low-VOC Dissipative Floor Finish is available from these Desco Industries brands:

DESCO

for service and support in North America

2.5 Gallon	**10550**
5 Gallon	**10551**
55 Gallon	**10552**

STATGUARD FLOORING

for service and support in North America

2.5 Gallon	**46024**
5 Gallon	**46025**
55 Gallon	**46026**

CHARLESWATER

for service and support in the United Kingdom

19 Litre	**71049**

Vermason

for service and support in the United Kingdom

19 Litre	**220528**

DESCO ASIA

for service and support in Asia

2.5 Gallon	**10550**

DESCO JAPAN

for service and support in Japan

9.46 Liter	**10550**

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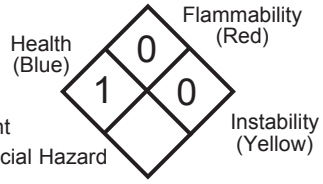
Safety Data Sheet
May be used to comply with ANSI Z400.1-2004, 29 CFR 1910.1200, Regulation (EC) No 1272/2008 (CLP Regulation), and GHS. Standard must be consulted for specific requirements.

NFPA Designation 704

Degree of Hazard:
4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant



Statguard® Low-VOC Dissipative Floor Finish

SECTION 1 - IDENTIFICATION OF SUBSTANCE/PREPARATION AND COMPANY

Product name:	Statguard® Low-VOC Dissipative Floor Finish.
Recommended use:	Antistatic Floor Finish.
Manufacturer	Desco Industries, Inc. One Colgate Way. Canton, MA 02021 U.S.A.
Telephone	781-821-8370
Emergency	781-821-8370

SECTION 2 - HAZARDS IDENTIFICATION

Classification:

Reproductive toxicity	Category 2

Labelling:

Symbol:	Health Hazard.
Signal word:	Warning.
Hazard statement:	Suspected of damaging fertility or the unborn child.

Precautionary statements:

IF exposed or concerned: Get medical advice/attention.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Store locked up.
Dispose of contents/container in compliance with all Federal, State/ Provincial and local laws and regulations.

SECTION 3 - INFORMATION ON INGREDIENTS/COMPOSITION

Hazardous Ingredients	CAS-No.	Weight %
Trade Secret 120505MA106		0-1%
Diethylene glycol monoethyl ether*	111-90-0	5-25%

*This item is listed on the SARA Title III Section 313 Inventory

SECTION 4 - FIRST AID MEASURES

Eye Contact:	Flush with water for at least 15 minutes. If irritation develops, get medical attention.
Skin Contact:	Wash with soap and water. If irritation develops, get medical attention.
Ingestion:	Drink several glasses of water. DO NOT induce vomiting. Contact a physician.
Inhalation:	Move subject to fresh air.

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SECTION 5 - FIRE-FIGHTING MEASURES

Proper Extinguishing Media:	The product is not flammable. Extinguish fire using media suitable for surrounding fire.
Protective Clothing:	Wear appropriate protective equipment.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Wear impervious protective gloves and chemical splash proof eye glasses. Contaminated surfaces will be extremely slippery.
Environmental Precautions:	Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.
Clean Up:	Absorb with sand or other absorbent material. Sweep up and shovel into suitable containers for disposal. Dispose of the solids and the contaminated absorbent material according to local, state, and federal regulations.

SECTION 7 - HANDLING AND STORAGE

Handling:	Use in well-ventilated areas; avoid breathing vapors. Keep containers closed when not in use. Avoid contact with clothing, skin and eyes. Wash thoroughly after handling. For commercial and industrial use only.
Storage:	Storage Temperature: Max. 49°C/120°F-1°C/34°F Keep from freezing-product may coagulate. Keep out of reach of children.

SECTION 8 - EXPOSURE CONTROL/PERSONAL EXPOSURE

Exposure Limits

Component	List	Type	Value
Diethylene Glycol Monoethyl Ether	WEEL	TWA	140 mg/m3 / 25 ppm

Personal Protection

Eye/Face Protection:	Use safety glasses. Where contract with the material is likely, chemical goggles are recommended because eye contract may cause discomfort even thought it is unlikely to cause injury.
Skin Protection:	No precautions other than clean body covering clothing should be needed.
Hand Protection:	Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.
Respiratory Protection:	Atmospheric levels should be maintained below the exposure guideline.
Ingestion:	Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation:	Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid.
Color:	White liquid (Dries Clear).
Odor:	Polymer smell.
Odor Threshold:	N/A.
pH:	7-8
Melting Point at °C:	N/A.

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Boiling Point at °C:	>200°F (100°C).
Flash Point at °C:	Noncombustible.
Evaporation Rate:	N/A.
Flammability:	Classification according to EC-regulations “non-flammable”.
Inflammability Limits (vol.% in air):	N/A.
Vapor Pressure (mmHg):	N/A.
Vapor Density (air=1):	N/A.
Specific Gravity (H20=1):	1.03
Solubility in water:	Complete.
Ignition Temperature:	N/A.
Viscosity:	<10 cps (0.01 Pa•s).
Partition coefficient:	N/A.
Decomposition Temperature:	N/A.
VOC:	0%*

*Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 8.5, Article 2, Section 94508.

SECTION 10 - STABILITY AND REACTIVITY

Stability/Reactivity:	Stable product at normal conditions.
Conditions to avoid:	Temperatures above 49°C/120°F and below 1°C/34°F.
Materials to avoid:	None known.
Hazardous Decomposition:	Thermal decomposition may yield carbon oxides/hazardous organic products.
Hazardous Reactions:	Hazardous Polymerization does not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity

Diethylene glycol monoethyl ether (111-90-0)

Ingestion:	LD50, Rat 1,920-9,050 mg/kg
Skin Absorption:	>8,400 mg/kg.
Chronic Toxicity and Carcinogenicity:	Did not cause cancer in lab animals.
Developmental Toxicity:	Did not cause birth defects or any other fetal effects in lab animals.
Reproductive Toxicity:	Studies in lab animals indicate that diethylene glycol monoethyl ether is not a reproductive toxicant even when given in large amounts.
Genetic Toxicology	In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Trade Secret 120505MA106

LD50 (Oral - Rat):	710 mg/kg.
LC50 (Inhalation - Rat):	5.53 mg/L/4 hr.
LD50 (Dermal - Rat):	> 2000 mg/kg.
Target Organ Systemic Toxicity:	Oral NOAEL 3.05 mg/kg; Inhalation NOAEL 0.00269.
Skin-Rabbit:	Irritating.
Eye-Rabbit:	Moderately Irritating.
Skin Sensitization:	Negative in Buehler Test.
Mutagenicity:	Negative in in-vitro chromosome aberration test; Negative in Ames test.

Toxicological Affects

Skin Contact:	May cause mild skin irritation.

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Skin Absorption:	May be harmful if absorbed through the skin.
Eye Contact:	May cause mild eye irritation.
Inhalation:	May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.
Ingestion:	May be harmful if swallowed.

SECTION 12 - ECOLOGICAL INFORMATION

Diethylene glycol monoethyl ether (111-90-0)

MOVEMENT & PARTITIONING:	Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).
Henry's Law Constant (H):	2.22E-8 atm*m3/mole; 25 °C Estimated.
Partition coefficient n-octanol/water (log Pow):	-0.54 Measured.
Partition coefficient, soil organic carbon/water (Koc):	20 Estimated.
PERSISTENCE & DEGRADABILITY:	Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability. Indirect Photodegradation with OH Radicals.

Rate Constant	Atmospheric Half-life	Method
3.14E-11 cm3/s	4.093 h	Estimated

OECD Biodegradation Tests

Biodegradation	Exposure Time	Method
90 %	28 d	OECD 301E Test
> 90 %	5.5 d	OECD 302B Test

Biological oxygen demand (BOD)

BOD 5	BOD 10	BOD 20
5 - 17 %	31 - 71 %	49 - 87 %

Chemical Oxygen Demand	1.84 mg/mg
Theoretical Oxygen Demand	1.91 mg/mg

ECOTOXICITY

Fish Acute & Prolonged Toxicity:	LC50, bluegill (Lepomis 21,400 mg/l 96 h macrochirus).
Aquatic Invertebrate Acute Toxicity:	EC50, water flea Daphnia 3,940 - 4,670 mg/l 48 h magna.
Toxicity to Micro-organisms:	EC10, bacteria 4,000 mg/l 16 h.

Trade Secret 120505MA106

ECOTOXICITY:	Fish Acute & Prolonged Toxicity LC50, (Rainbow trout) 158 mg/l 96 hr.
	Aquatic Invertebrate Acute Toxicity EC50, (Daphnia magna) 249 mg/l48 hr

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SECTION 13 - DISPOSAL CONSIDERATIONS

Product: No special precautions. As packaged, if this product becomes waste it does not meet the criteria of hazardous waste defined under the Resource Conservation and Recovery Act. Dispose of according to all federal, state and local regulations.

SECTION 14 - TRANSPORT INFORMATION

This product is not classified for transport under ADR/IMDG regulations.

SECTION 15 - REGULATORY INFORMATION

Physical/Chemical Indication: Non-flammable.

Risk-phrase: (R36/38): irritates eyes and skin.

Safety Phrase: (S2): keep away from children,
(S7): keep containers well closed,
(S24/25): avoid contact with skin and eyes,
(S62): if swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

RIGHT TO KNOW (RTK)

Ingredients	CAS #	MARTK	NJRTK	PARTK
Water	7732-18-5	-	-	X
Diethylene glycol monoethyl ether	111-90-0	-	X	X
Tributoxyethyl phosphate	78-51-3	-	X	X

The following components are defined as a “Hazardous Chemical” by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986 Sections 311, 312, 313.

Diethylene Glycol Monoethyl Ether: Sections 311, 312, and 312, Delayed (Chronic) Health Hazard, Fire Hazard.

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Sections 311 and 312, Immediate (Acute) Health Hazard.

International Inventories at CAS# Level: All components of this product are listed on or exempt from the following inventories: U.S.A (TSCA), Canada (DSL\NDSL).

California Proposition 65: This product is not subject to the reporting requirements under California’s Proposition 65.

EINECS Status: All components are included in the EINECS Inventories.

WHIMIS: This product has been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

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SECTION 16 - OTHER INFORMATION

NFPA RATING: Special Hazard: N/A, Health 1, Flammability 0, Instability: 0

SDS Updated: **2015-04-08**

Disclaimer

OTHER INFORMATION: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

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