Project Name: Imperial Solar Energy Center South

4-B Dust Suppressant Products

Complete this section if a dust suppressant product will be used. These materials include but are not limited to: hygroscopic suppressants (road salts), adhesives, petroleum emulsions, polymer emulsions and bituminous materials (road oils). (Rule 801 sec. F.2.c)

Copy this page if more than one dust suppressant product will be used.

☐ **Not Applicable.** Only water application will be the control method used. **Skip to 4-C.**

Application Area: Roads

Product Name: DustGuard

Contractor's Name: First Solar Electric Phone No.: 510-207-8351

Application Rate: 30 Gallons of undiluted material per ☐ mile or ☒ acre treated

Application Frequency: 2 Application per ☐ week ☐ month ☒ year

Application Equipment: Water Trucks or Wagons

Number of Application Equipment Available: 1

Application Equipment Capacity: 4,000 gal water truck or 8,000 gal water wagon

Attach each of the following information that fully describes this product. Use the checklist below to make sure all information is submitted with this plan.

- ☒ Product Specifications (MSDS, Product Safety Data Sheet, etc.)
- ☒ Manufacturer's Usage Instructions (method, frequency and intensity of application)
- ☒ Environmental impacts and approvals or certificaitons related to the appropriate and safe use for ground application.

Terra Novo

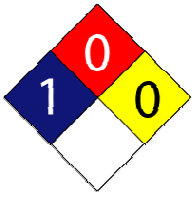
www.terranovo.com

DustGuard

MATERIAL SAFETY DATA SHEET

MSDS No: 10042011
Date: 10/04/2011
Supersedes: N/A

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



Product Name:	DustGuard
Synonyms & Chemical Family:	Acrylic Co-Polymer
Manufacturer:	Terra Novo, Inc. (888) 843.1029 www.terranovo.com
Product Information:	(661)587.5716
Emergency Phone No.:	CHEMTREC - 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Percent	CAS NO.
Acrylic Co-Polymer	33-42	25067-01-0
Water	58-63%	7732-18-5

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance and Odor:	White milky liquid, sweet odor.
Statement of Hazards:	Warning! May cause slight eye and skin irritation.

POTENTIAL HEALTH EFFECTS

Likely routes of exposure:	Eyes, skin, inhalation.
Eye contact:	Direct contact may cause eye irritation.
Skin contact:	Prolonged or repeated exposure may cause skin irritation.
Inhalation:	Inhalation of vapor or mist can cause headache, nausea and irritation of the nose, throat and lungs.

CARCINOGENICITY

NPT:	This product is not listed as a carcinogen by NPT.
IARC:	This product is not listed as a carcinogen by IARC.
OSHA:	This product is not listed as a carcinogen by OSHA.

4. FIRST AID MEASURES

Skin contact:	Wash with water and soap as a precaution. If skin irritation persists, call a physician.
Eye contact:	Rinse with plenty of water. If eye irritation persists, consult a specialist.
Inhalation:	Move to fresh air.
Ingestion:	Drink 1 or 2 glasses of water. Consult a physician if necessary. Never give anything by mouth to an unconscious person.
NOTE(S) TO PHYSICIAN:	None.

5. FIRE AND EXPLOSION HAZARD DATA

Flashpoint:	Non-combustible.
Flammable Limits:	N/A
Extinguishing Media:	Use extinguishing media appropriate for surrounding fire.
Thermal Decomposition:	Thermal decomposition may yield the following – acrylic monomers.
Special Fire Fighting Procedures:	Wear self-contained breathing apparatus and protective suit.
Unusual Hazards:	Material can splatter above 100° C / 212° F.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Keep people away from upwind of spill/leak. Material can create slippery conditions.

Environmental precautions

Caution: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Methods for cleaning Up

Contain spills immediately with inert materials (e.g., sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.

7. STORAGE AND HANDLING PROCEDURES

Handling

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep container tightly closed. Do not breathe vapors, mist or gas.

Storage

Store between 1-49° C (34-120 degrees F).

Keep product from freezing – product stability may be affected. Stir well before use.

8. EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

There are no Personal Exposure Limits (PEL) for this product.

Eye Protection:	Safety glasses with side-shields. Eye protection must be compatible with respiratory protection system employed.
Skin Protection:	Neoprene gloves.
Respiratory Protection:	If necessary, wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode. A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use.
Ventilation:	Provide adequate ventilation. Where reasonably practical this should be achieved by the use of local exhaust ventilation and good general extraction.
Other Protective Clothing/Equipment:	Avoid contact with skin and eyes. A safety shower and eye wash station should be readily available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	100 C (212 F)
Vapor Pressure (mm Hg):	17.0 mm Hg at 20 C (68.00 F) water
Relative Density:	1.00 – 1.20
Specific Gravity:	1.09
pH:	5.0-6.0
Viscosity:	600 - 1500 cps max @ 25° C
Solubility in Water:	Dilutes.

10. STABILITY AND REACTIVITY DATA

Stability:	Stable under normal storage conditions.
Materials to Avoid:	There are no known materials which are incompatible with this product.
Hazardous Polymerization:	Product will not undergo polymerization.
Hazardous Decomposition:	None.

11. TOXICOLOGY DATA

Acute Oral Toxicity:	LD50 rat > 5,000 mg/kg
Acute Dermal Toxicity:	LD50 rabbit > 2,000 mg/kg
Skin Irritation:	Rabbit slight to moderate skin irritation.
Eye Irritation:	Rabbit slight to moderate irritation.
Subchronic Toxicity:	None.

12. AQUATIC TOXICITY DATA

Rainbow Trout 96-hour survival:	> 1500 mg/L
Fathead Minnow 96-hour survival:	> 1500 mg/L
Water Flea 96-hour survival:	> 1500 mg/L

13. TRANSPORT INFORMATION

US DOT	Not regulated.
Proper shipping name:	N/A
Hazard class:	N/A
Hazard identification number:	N/A
Packaging group:	N/A

Transport label: N/A

14. DISPOSAL INFORMATION

Caution: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Dispose of spilled material in accordance with state and local regulations for waste that is non-hazardous by Federal definition. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete. Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste.

15. REGULATORY INFORMATION

OSHA Status:	This product as supplied is non-hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).
TSCA Section 8(b) Inventory Status:	All components to his product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
SARA Title III, Section 313:	This product contains no toxic chemical(s) at or above the de minimus concentrations subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372.
CERCLA Information:	Releases of this material to air, land or water are not reportable to the national response center under the comprehensive environmental response, compensation, and liability act (CERCLA) or to state and local emergency planning committees under the superfund amendments and reauthorization act (SARA) Title III Section 304.

16. OTHER INFORMATION

NFPA HAZARD RATING (National Fire Protection Association)

1	Fire:	Materials that must be preheated before ignition can occur.
0	Health:	Materials which on intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical treatment is given.
0	Reactivity:	Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.
---	Specific Hazard:	None

Health Hazard	Fire Hazard	Reactivity	Specific Hazard	
4 – Deadly	4 – Below 73° F	4 – May detonate	OX	Oxidizer
3 – Extremely Hazardous	3 – Below 100° F	3 – Shock and heat may detonate	ACID	Acid
2 – Hazardous	2 – Below 200° F	2 – Violent chemical change	ALK	Alkali
1 – Slightly Hazardous	1 – Above 200° F	1 – Unstable if heated	COR	Corrosive
0 – Non-hazardous	0 – Will not burn	0 – Stable		

Rating	Health Hazard	Fire Hazard	Reactivity	Protective Equipment Guide
4	Extreme: Highly toxic. May be fatal on short term exposure. Special protective equipment required.	Extreme: Extremely flammable gas or liquid, Flash Point below 73° F	Extreme: Explosive at room temperature.	A – Safety Glasses B – Safety Glasses, Gloves C – Safety Glasses, Gloves, Protective Apron
3	Serious: Toxic. Avoid Inhalation or skin contact.	Serious: Flammable. Flash Point 73° F to 100° F.	Serious: May explode if shocked, heated under confinement or mixed with water.	D – Face Shield, Gloves, Protective Apron E – Safety Glasses, Gloves, Dust Mask
2	Moderate: Moderately toxic. May be harmful it inhaled or absorbed.	Moderate: Combustible. Requires moderate heating to ignite. Flash Point 100° F to 200° F.	Moderate: Unstable, may react with water.	F – Safety Glasses, Gloves, Protective Apron, Dust Mask G – Safety Glasses, Gloves, Vapor Respirator
1	Slight: Slightly toxic. May cause slight irritation.	Slight: Slightly combustible. Requires strong heating to ignite.	Slight: May react if heated or mixed with water.	H – Splash Goggles, Gloves, Protective Apron, Vapor Respirator I – Safety Glasses, Gloves, Dust and Vapor Respirator
0	Minimal: All chemicals have some degree of toxicity.	Minimal: Will not burn under normal conditions.	Minimal: Normally stable, does not react with water.	J – Splash Goggles, Gloves, Protective Apron, Dust and Vapor Respirator K – Airline Respirator, Gloves, Protective Suit, Boots X – Ask your Supervisor for Special Handling Instructions

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation and verification. Before using any product, read its label.

Terra Novo, Inc.

Brian Foster
October 4, 2011

Reason for Issue:
Change in item 1

DustGuard

Dust Suppressant

Eco-Friendly Supreme Dust Control

BENEFITS

- *All Natural*
- *Long Lasting*
- *Proven Performance*
- *Biodegradable*

APPLICATIONS

Construction Sites
Unpaved Roads
Haul Roads
Oil Fields
Ag Land
Equipment Yards
Runways
Helipads

DustGuard offers dust suppression equal to or better than the widely used Polyvinyl Acetate (PVA) without the environmental concerns. DustGuard can be used in place of PVA's and other "glue-like" products. This polymeric soil solution works well to bind soil aggregates, reducing air born particles which can cause environmental, health and visibility issues. Unlike PVA's, DustGuard does not contain formaldehyde or other possibly carcinogenic materials which can require respiratory equipment during application. DustGuard provides superior dust control while removing the worries of contaminating ground water.

Terra Novo

www.terranovo.com/dust

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Application Rates & Techniques

DustGuard
Dust Suppressant

APPLICATION

As with all dust suppressants, application rates and methods depend upon the site, environment, soil type, and more. Please contact your Terra Novo representative for site specific recommendations. Each site is unique, and as such, the following application rates are based on averages in the field.

DustGuard works best when applied in two passes for thorough coverage. For maximum dust suppression, that will last up to one year, double the application rate recommended below.

Soil Type	Gallons / Acre*	Dilution Ratio
Sand	*27 gal / acre*	*20:1*
Silt	*30 gal / acre*	*20:1*
Clay	*35 gal / acre*	*20:1*

SURFACE PREPARATION

It is recommended to wet the surface with a light application of water prior to applying DustGuard. DustGuard remains wet during application and continues to cure as it controls the dust.

SAND SIEVE ANALYSIS

Sand Sieve Analysis is a practice or procedure used to assess the particle size distribution of granular material. The size distribution is critical in determining the type of dust suppressant needed and application rates to be used. The practice of Sieving is quick and accurate, measuring the maximum diameter of a sediment grain. There are four aspects of this proven test, including sizing, sorting, kurtosis, and skewness. After the analysis, we can determine the percent sand, silt and clay in your soil, and textural class, thereby recommended an accurate application rate and method for your needs.

Particle Grade	Size (mm)	Surface Preparation
very coarse sand	1-2	Smooth and level surface prior to application
medium sand	0.25-0.50	
fine sand	0.125-0.25	Loosen top inch of soil prior to application for better coverage/penetration, compact soil after application
silt	0.0039-0.0625	
clay	less than 0.0039	

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ABOUT US

Terra Novo is dedicated to helping the Storm Water and Erosion Control industry comply with strict Federal Clean Water regulations. We provide cost-effective Best Management Practice solutions that more and more erosion control and storm water specialists are turning to. Our engineers and chemists pride themselves by maintaining a hands on approach to solving site-specific problems. We have developed product lines for erosion control, dust control and storm water run-off with the end user in mind. All of our products are highly effective, extremely affordable, and environmentally friendly.

For technical services or to locate your nearest DustGuard dealer, call 1-888-843-1029 or visit us online at www.terranovo.com.

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