

**FINAL
ENVIRONMENTAL IMPACT STATEMENT**

for the

TRI-LAKES RELIABILITY PROJECT



February 17, 2006

ATTACHMENT 9

DUST INHIBITORS

Comparison of Dust Inhibitor's Toxicity Table

Calcium Chloride Material Safety Data Sheet

Dirt Glue Material Safety Data Sheet

Soiltac Material Safety Data Sheet

Soil Sement Material Safety Data Sheet

Envirotac II Material Safety Data Sheet

Polypavement Material Safety Data Sheet

Comparison of Dust Inhibitors' Toxicity					
		Mammals		Fish	
	Type of Chemical	Rats	Rabbits	Trout	Other
Calcium Chloride	salt (CaCl ₂)	Oral LD50 at 1g/kg	no data available	no data available	LC50/96 hour for 'fish' at 100 mg/L
Dirt Glue	Polymer Emulsion (Sodium Polyacrylate)	Oral LD50 at 40g/kg	no data available	**Trout LC50/96 hour at 50,000 mg/L	no data available
Soiltac	Polymer Emulsion (Vinyl Acetate Copolymer and Vinyl Acetate Monomer)	LC50/1hour at 5,656 mg/L	no data available	Rainbow Trout LC50/96 hour at 1,000 mg/L	Fathead Minnow LC50/96 hour at 1,208 mg/L
Soil Sement	Polymer Emulsion (Aqueous Acrylic Vinyl Acetate Polymer Emulsion)	no info available	no data available	Rainbow Trout LC50/96 hour at 8,950 mg/L	Goldfish LC50/24 hour at from 4,200 mg/L to 25,000 mg/L
Envirotac II	Polymer Emulsion (Acrylic Copolymer, individual Residual Monomers and Aqua Ammonia)	Oral LD50 for at 5g/kg	Dermal LD 50 at 5 mg/kg	no data available	no data available
Polypavement	Water Based Copolymer Emulsion	no data available	no data available	***LC50/4 hour for steelhead trout at 7,450 mg/L	no data available
All data was taken from included MSDS sheets except for ** and ***					
**source is from article at http://www.forester.net/ecm_0301_chemical.html					
*** source id from letter from Ronald E. Reed from ECO Polymers, INC. January 24, 1994					
Legal requirement for chemical labeling "toxic" if its' LC50 is less than .1g/L, "nontoxic" if it is from 1g/L to 10g/L					

MSDS Number: C0357 * * * * * Effective Date: 02/23/05 * * * * * Supercedes: 08/10/04

MSDS**Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-659-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 618-666-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

CALCIUM CHLORIDE

1. Product Identification

Synonyms: calcium dichloride; calcium chloride anhydrous; Caltac®; Dowflake

CAS No.: 10043-52-4

Molecular Weight: 110.98

Chemical Formula: CaCl₂

Product Codes:

J.T. Baker: 1311

Mallinckrodt: 0771, 3266, 3630, 4225, 4748, 4777, 4822, 4870, 4875, 4880

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Calcium Chloride	10043-52-4	93 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight

Flammability Rating: 0 - None

Reactivity Rating: 2 - Moderate

Contact Rating: 3 - Severe

Lab Protective Equip: GOGGLES; LAB COAT

Storage Color Code: Green (General Storage)
-----**Potential Health Effects**
-----**Inhalation:**

Granular material does not pose a significant inhalation hazard, but inhalation of dust may cause irritation to the respiratory tract, with symptoms of coughing and shortness of breath.

Ingestion:

Low toxicity material but ingestion may cause serious irritation of the mucous membrane due to heat of hydrolysis. Large amounts can cause gastrointestinal upset, vomiting, abdominal pain.

Skin Contact:

Solid may cause mild irritation on dry skin; strong solutions or solid in contact with moist skin may cause severe irritation, even burns.

Eye Contact:

Hazard may be either mechanical abrasion or, more serious, burns from heat of hydrolysis and chloride irritation.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

No information found.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:

Oral ingestion may cause serum acidosis.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. At high temperatures or when moistened under fire conditions, calcium chloride may produce toxic or irritating fumes.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8.

Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Small amounts of residue may be flushed to sewer with plenty of water.

7 Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Moist calcium chloride and concentrated solutions can corrode steel. When exposed to the atmosphere, calcium chloride will absorb water and form a solution. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Other Control Measures:

Maintain good housekeeping in work area. Dust deposits on floors and other surfaces may pick up moisture and cause the surfaces to become slippery and present safety hazards.

9. Physical and Chemical Properties

Appearance:

White or gray-white granules.

Odor:

Odorless.

Solubility:

Freely soluble in water, exothermic.

Density:

2.15

pH:

8 - 9 Aqueous solution

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

> 1600C (> 2912F)

Melting Point:

772C (1422F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Substance will pick up moisture from the air and go into solution if exposed in open containers.

Hazardous Decomposition Products:

Emits toxic chlorine fumes when heated to decomposition. May form hydrogen chloride in presence of sulfuric or phosphoric acids or with water at elevated temperatures.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Methyl vinyl ether, water, zinc, bromine trifluoride, mixtures of lime and boric acid, barium chloride, and 2-furan percarboxylic acid. Metals will slowly corrode in aqueous calcium chloride solutions. Aluminum (and alloys) and yellow brass will be attacked by calcium chloride.

Conditions to Avoid:

Incompatibles.

11. Toxicological Information

Oral rat LD50: 1000 mg/kg. Investigated as a tumorigen and mutagen.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Calcium Chloride (10043-52-4)	No	No	None

12. Ecological Information

Environmental Fate:

Based on available information for Calcium Chloride anhydrous, this material will not biodegrade or bioaccumulate.

Environmental Toxicity:

The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Calcium Chloride (10043-52-4)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	--Canada--		Phil.
		DSL	NDSL	
Calcium Chloride (10043-52-4)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Calcium Chloride (10043-52-4)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8 (d)
Calcium Chloride (10043-52-4)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
 Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 1

Label Hazard Warning:

WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.

Label Precautions:

- Avoid contact with eyes, skin and clothing.
- Wash thoroughly after handling.
- Avoid breathing dust.
- Keep container closed.
- Use only with adequate ventilation.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 3.

Disclaimer:

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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)



Material Safety Data Sheet

SPA(C) MSDS ID: AAA/SPA

Degussa.zappa-tec

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: Sodium Polyacrylate, Crosslinked

All American, LLC
Distributor for SPA©
Super Poly Absorbents
Contact: 225-928-9406

Phone: 225-928-9406

Emergency # (800) 424-9300 CHEMTREC

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
9003-04-7	Sodium polyacrylate	>99
Not Available	Post Treated- Trade Secret	0

Component Information/Information on Non-Hazardous Components

The components of this product are not regulated as hazardous under 29CFR and 49 CFR. However, the manufacturer recognizes the potential for respiratory tract irritation as a result of inhalation of this material as a respirable dust. See Sections 8, 11, 14, and 15 for further regulatory information.

*** Section 3 - Hazards Identification ***

Emergency Overview

Sodium polyacrylate is a white, granular, odorless polymer that yields a gel-like material with the addition of water. It is insoluble in water and causes extremely slippery conditions when wet. Although not regulated as a hazardous material, the respirable dust is a potential respiratory tract irritant. The manufacturer recommends an eight-hour exposure limit of 0.05 mg/m³.

Potential Health Effects: Eyes

Dust may cause burning, drying, itching and other discomfort, resulting in reddening of the eyes.

Potential Health Effects: Skin

Exposure to the dust, such as in manufacturing, may aggravate existing skin conditions due to drying effect.

Potential Health Effects: Ingestion

Although not a likely route of entry, tests have shown that polyacrylate absorbents are non-toxic if ingested. However, as in any instance of non-food consumption, seek medical attention in the event of any adverse symptoms.

Potential Health Effects: Inhalation

Exposure to respirable dust may cause respiratory tract and lung irritation and may aggravate existing respiratory conditions.

HMIS Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes.

First Aid: Skin

Remove polyacrylate absorbent dust from skin using soap and water.

First Aid: Ingestion

Non-toxic by ingestion. However, if adverse symptoms appear, seek medical attention.

Material Safety Data Sheet

SPA(c)

MSDS ID: AAA/SPA

First Aid: Inhalation

If inhaled, move to source of fresh air. Seek medical attention if symptoms persist.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

No recognized fire hazards associated with the finished product.

Upper Flammable Limit (UFL): NE

Lower Flammable Limit (LFL): NE

Method Used: None

Flash Point: None

Flammability Classification: None

Hazardous Combustion Products

None known.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog. Extremely slippery conditions are created if spilled product comes in contact with water.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Sweep or vacuum material when possible and shovel into a waste container.

Clean-Up Procedures

Use caution after contact of product with water as extremely slippery conditions will result. Residuals may be flushed with water into the drain for normal wastewater treatment. This is a non-hazardous waste suitable for disposal in an approved solid waste landfill.

Evacuation Procedures

None required.

Special Procedures

Avoid respirable dust inhalation during clean-up. Wear appropriate respirator.

*** Section 7 - Handling and Storage ***

Handling Procedures

Handle as an eye and respiratory tract irritant.

Storage Procedures

Store in a dry, closed container.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

This product is not regulated as a hazardous material. However, the manufacturer recognizes the potential for respiratory tract irritation and recommends an eight hour exposure limit of 0.05 mg/m³.

B: Component Exposure Limits

No information is available.

Material Safety Data Sheet

SPA(c)

MSDS ID: AAA/SPA

Engineering Controls

Provide local exhaust ventilation to maintain worker exposure to less than 0.05 mg/m³ over an eight-hour period.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields or goggles.

Personal Protective Equipment: Skin

Use impervious gloves when handling the product in the manufacturing environment.

Personal Protective Equipment: Respiratory

Wear respirator with a high efficiency filter if particulate concentrations in the work area exceed 0.05 mg/m³ over an eight-hour period.

Personal Protective Equipment: General

Obey reasonable safety precautions and practice good housekeeping. Wash thoroughly after handling.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	White granular powder.	Odor:	None
Physical State:	Solid	pH:	5.5-6.5 (1% in water)
Vapor Pressure:	<10 mm Hg	Vapor Density:	NE
Boiling Point:	NE	Melting Point:	>390 F
Solubility (H₂O):	Not soluble.	Specific Gravity:	0.4-0.7 g/ml
Evaporation Rate:	<1.0		

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

The product is stable.

Chemical Stability: Conditions to Avoid

None

Incompatibility

None

Hazardous Decomposition

None known.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Acute inhalation of respirable dust may cause irritation of the upper respiratory tract and lungs.

B: Acute Toxicity-LD50/LC50

Sodium polyacrylate (9003-04-7)

LD50: Oral LD50 Rat: 40 gm/kg

Carcinogenicity

Component Carcinogenicity

No information is available.

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MSDS ID: AAA/SPA

Chronic Toxicity

Chronic inhalation exposure to rats for a lifetime (two years) using sodium polyacrylate that had been micronized to a respirable particle size (less than 10 microns) produced non-specific inflammation and chronic lung injury at 0.2 mg/m³ and 0.8 mg/m³. Also, at 0.8 mg/m³, tumors were seen in some test animals. In the absence of chronic inflammation, tumors are not expected. There were no adverse effects detected at 0.05 mg/m³.

Mutagenicity

Sodium polyacrylate had no effect in mutagenicity tests.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

Composted polyacrylate absorbents are nontoxic to aquatic or terrestrial organisms at predicted exposure levels from current application rates.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No information available,

Environmental Fate

Polyacrylate absorbents are relatively inert in aerobic and anaerobic conditions. They are immobile in landfills and soil systems (>90% retention), with the mobile fraction showing biodegradability. They are also compatible with incineration of municipal solid waste. Incidental down-the-drain disposal of small quantities of polyacrylic absorbents will not affect the performance of wastewater treatment systems.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

This product is a non-hazardous waste material suitable for approved solid waste landfills.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of in accordance with Local, State and Federal regulations.

*** Section 14 - Transportation Information ***

International Transportation Regulations

This product is not transport regulated.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

This product is not Federally regulated as a hazardous material.

B: Clean Air Act

No information is available.

C: Component Analysis

No information is available.

Material Safety Data Sheet

SPA(c)

MSDS ID: AAA/SPA

D: Food & Drug Administration

CFR references for the FDA regulated components in this product are listed.

Sodium polyacrylate (9003-04-7)

Direct Food 173.73, 173.310

Additives:

Indirect Food 175.105

Additives:

State Regulations

A: General Product Information

This product is not regulated by any State as a hazardous material.

B: Component Analysis - State

None of this product's components are listed on the state lists from CA, FL, MA, MN, NJ, or PA.

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Sodium polyacrylate	9003-04-7	Yes	DSL	No

*** Section 16 - Other Information ***

Other Information

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

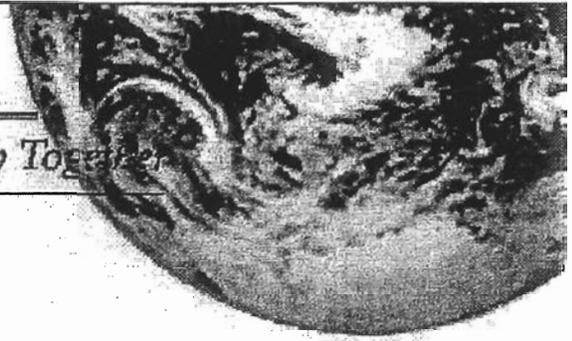
Key/Legend

Contact: Product Compliance Officer

Contact Phone: All American, LLC
Distributor for SPA©
Super Poly Absorbents
Contact: 225-928-9406



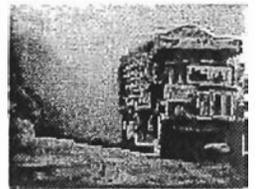
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Welcome to DirtGlue.com

Our products are your solution for Dust Control, Erosion Control, Sediment Control, Stockpile Capping, Hydroseeding and much more.



DirtGlue® - Part of the Gulf Coast Recovery Effort!

Louisiana Authorized *DirtGlue* Distributor:

All American Absorbants, LLC
www.allamericanabsorbants.com

Would you be interested in a solution to dust, sediment, and erosion that has traditionally required continuous maintenance at construction sites, on dirt roads, slopes and embankments, and any other areas with these challenges?

Of Course You Would!

DirtGlue Polymer Emulsions are powerful, high-tech bonding agents specifically engineered and formulated to bond soil particles together. Applied to the surface of the soil, **DirtGlue Polymer Emulsions** form a protective, flexible film that eliminates dust, prevents mud and controls erosion thereby providing a solution to today's challenging dust and erosion control requirements.

As **DirtGlue Polymer Emulsion** bonds the individual soil

particles together and dries, it forms a flexible "crust" that strengthens the surface of the soil. It creates a three-dimensional matrix (depth varies depending on type of application and performance requirements) in the soil resulting in enhanced stability and durability.



Applications include:

- Construction sites
- Landfills
- Storage pile capping
- Bank stabilization
- Protection from wind and water erosion
- Tackifier for hydroseeding process

Mixed into the soil, **DirtGlue Polymer Emulsions** are able to create either a light temporary driving surface or a tough and durable driving surface based on the rate of application.

Solutions include:

- Walkways
- Trails
- Temporary construction roads
- Dirt and gravel roads
- Private community roads
- Residential driveways
- Fairgrounds
- Parking areas
- Haul and logging roads
- Quarries
- Access roads
- Racetracks

Whatever your needs you may have for dust control, erosion control, sediment control, stock pile capping or other soil stabilization challenges, **DirtGlue Polymer Emulsions** will solve these problems. **DirtGlue Polymer Emulsions** are high quality, consistent top performers, versatile and easy to use.

DirtGlue Polymer Emulsions
are environmentally friendly

DirtGlue Polymer Emulsions :

- Contain no harmful chemical solvents
- Do not emit any volatile organic compounds (VOCs)
- Are non-corrosive and non-flammable
- Do not change the pH of the soil
- Have no harmful effects on people, plants, animals, fish or other aquatic life

As non-hazardous, water-soluble products, **DirtGlue Polymer Emulsions** may be applied to environmentally sensitive areas such as wetland buffer zones because they have no adverse

effects on groundwater. With **DirtGlue Polymer Emulsions**, soil particles act as a filter. The polymer molecules remain near the surface as they bond soil particles together. Nothing but water goes deeper into the ground. Some unique characteristics make **DirtGlue Polymer Emulsions** stand out:

- High resistance to UV degradation
- Applications possible at lower temperatures
 - Smooth film forming at low temperatures
- Enhanced flexibility of the cured product
- Higher bonding strength

DirtGlue is a low-cost and effective soil stabilization solution

DirtGlue Polymer Emulsion solutions for dust control, sediment control, erosion control, and any other soil stabilization applications are very cost effective. While other products for dust control require repeated applications to maintain their effectiveness, a single application of **DirtGlue Polymer Emulsions** will control dust and sediment much longer than other existing methods.

All in all...

DirtGlue is the Superior Solution!

Call *DirtGlue* today 888 606.6108, and be on the way to solving your soil stabilization challenges.

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Tel: 888.606.6108 Email: info@dirtglue.com

| Environmental

DirtGlue Polymer Emulsions have been proven to be an environmentally safe product.

***DirtGlue* Polymer Emulsions**

- Contain no harmful chemical solvents
- Does not emit any volatile organic compounds (VOC's)
- Is non-corrosive and nonflammable
- Does not change the pH of the soil
- Has no harmful effects on people, animals, fish, or other aquatic life
-
-
- As water-soluble products, ***DirtGlue* Polymer Emulsions** may be applied to environmentally sensitive areas such as wetland buffer zones because they have no adverse effects on groundwater. With ***DirtGlue* Polymer Emulsions**, soil particles act as a filter. The polymer molecules remain near the surface as they bond soil particles together. Nothing but water goes deeper into the ground.

Testing also confirms that even in the worst-case scenario, if undiluted ***DirtGlue* Polymer Emulsion** were to be released directly into a stream or similar waterway, there would be no harmful effects on the aquatic life. It would simply be diluted by the water and dissipate.

***DirtGlue* Polymer Emulsions** are water based polymer emulsion bonding agents. The EPA has classified water based polymer emulsions as **non-hazardous**. Federal and state Department Of Transportation agencies place no restrictions whatsoever on the shipment of ***DirtGlue* Polymer Emulsion** products.

A copy of the Materials Safety Data Sheet (MSDS) describing the product safety inspections can be provided with each purchase.

ack]

MSDS

Am
 Envirotac II[®] is at work in the Middle East for
U.S. Operation
Enduring Freedom

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Envirotac II[®] MSDS			
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION			
Envirotac II[®] Soil Stabilizer			
MSDS Date	3/22/00		
COMPANY IDENTIFICATION	Vermillion's Environmental Products & Applications, Inc. (EP&A, Inc.) 73-710 Fred Waring Dr. Suite 101, Palm Desert CA 92260		
EMERGENCY TELEPHONE NUMBERS	HEALTH EMERGENCY	(760) 774-8375	
	SPILL EMERGENCY	(760) 774-8375	
2. COMPOSITION/INFORMATION ON INGREDIENTS			
No.		CAS REG NO	WEIGHT (%)
1	Acrylic copolymer	Not Hazardous	39-43
2	Individual residual monomers	Not Required	<0.1
3	Aqua ammonia	1336-21-6	<1.0
4	Water	7732-18-5	57-61
See SECTION 8, Exposure Controls / Personal Protection			
3. HAZARDS IDENTIFICATION			
Primary Routes of Exposure	Inhalation, Eye Contact and Skin Contact		
Inhalation	Inhalation of vapor or mist can cause the following: -headache ?nausea ?irritation lungs		
Eye Contact	Direct contact with material can cause the following: -slight irritation		
Skin Contact	Prolonged or repeated skin contact can cause the following: -slight skin irritation		
4. FIRST AID MEASURES			
Inhalation	Move subject to fresh air.		
Eye Contact	Flush eyes with water. Consult a physician if irritation persists.		
Skin Contact	Wash affected skin area thoroughly with soap and water. Consult a physician if i		
Ingestion	If swallowed, give 2 glasses of water to drink. Consult a physician. Never give a unconscious person.		
5. FIRE FIGHTING MEASURES			
Flash Point	Noncombustible		
Auto-ignition Temperature	Not Applicable		
Lower Explosive Limit	Not Applicable		
Upper Explosive Limit	Not Applicable		
Unusual Hazards	Material can splatter above 100C/212F. Dried product can burn.		
Extinguishing Agents	Use extinguishing media appropriate for surrounding fire.		
Personal Protective Equipment	Wear self-contained berating apparatus (pressure-demand NIOSH approved or eq protective gear.		
6. ACCIDENTAL RELEASE MEASURES			
Personal Protection	Appropriate protective equipment must be worn when handling a spill of this mat Exposure Controls/Personal Protection, for recommendations. If exposed to mate operations, see SECTION 4, First Aid Measures, for actions to follow.		
Procedures	Keep spectators away. Floor may be slippery; use care to avoid falling. Contain inert materials (e.q. sand, earth). Transfer liquids and solid diking material to sep for recovery or disposal.		
CAUTION: Keep spills and cleaning runoff our of municipal sewers and open bodies of water.			
7. HANDLING AND STORAGE			
Storage Conditions	Keep from freezing; material may coagulate. The minimum recommended storga material is 1C/34F. The maximum recommended storage temperature for this ma		
Handling Procedures	Monomer vapors can be evolved when material is heated during processing opera Exposure Controls/Personal Protection, for types of ventilation required.		
8. EXPOSURE CONTROLS/PERSONAL PROTECTION			
Exposure Limit Information	No.	CAS REG NO	WEIGHT (%)
	1	Acrylic copolymer	Not Hazardous 39-43
	2	Individual residual	Not Required <0.1

monomers					
3	Aqua ammonia	1336-21-6	<1.0		
4	Water	7732-18-5	57-61		
Comp.		EP&A, Inc.		OSHA	
No.	Units	TWA	STEL	TWA	STEL
1	None	None	None	None	None
2	a	a	a	a	a
3	ppm	25 b	35 b	None	35 b
4	None	None	None	None	None
a	Not Required				
b	As Ammonia				
c	Ceiling				
d	OSHA Specifically Regulated				
Respiratory Protection	A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. No concentrations are maintained below the exposure limit listed in ?Exposure Limit airborne concentrations up to 10 times the exposure limit, wear a properly fitted (or equivalent) half-mask, air-purifying respirator. Air purifying respirators should be approved (or equivalent) ammonia/methylamine cartridges and N95 filters. If oil or P95 filters.				
Eye Protection	Use safety glasses with side shields (ANSI Z87.1 or approved equivalent). Eye protection compatible with respiratory protection system employed.				
Hand Protection	The glove(s) listed below may provide protection against permeation. Gloves of materials may not provide adequate protection: -Neoprene				
Engineering Controls (Ventilation)	Use Local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0. vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual Practice published by the American Conference of Governmental Industrial Hygienists for the design, installation, use, and maintenance of exhaust systems.				
Other Protective Equipment:	Facilities storing or utilizing this material should be equipped with an eyewash facility.				
9. PHYSICAL AND CHEMICAL PROPERTIES					
Appearance	Milky				
Color	White				
State	Liquid				
Odor Characteristic	Ammonia odor				
PH	5.0 to 9.5				
Viscosity	1500 CPS Maximum				
Specific Gravity (Water = 1)	1.0 to 1.2				
Vapor Density (Air = 1)	<1 Water				
Vapor Pressure	17 mm Hg @ 20°C/68°F Water				
Melting Point	0°C/32°F Water				
Boiling Point	100°C/212°F Water				
Solubility in Water	Dilutable				
Percent Volatility	57to 61% Water				
Evaporation Rate (Bac = 1)	<1 Water				
The physical and chemical data given in Section 9 are typical values for this product and are not intended to be product specific. See Section 5, Fire Fighting Measures					
10. STABILITY AND REACTIVITY					
Instability	This material is considered stable. However, avoid temperatures above 177°C/350°F decomposition. Thermal decomposition is dependent on time and temperature.				
Hazardous Decomposition Products	Thermal decomposition may yield acrylic monomers.				
Hazardous Polymerization	Product will not undergo polymerization.				
Incompatibility	There are no known materials which are incompatible with this product.				
11. TOXICOLOGICAL INFORMATION					
Acute Data	No Toxicity data are available for this material.				
The information shown in SECTION 3, Hazards Identification, is based on the toxicity data for a number of acrylic emulsions that are compositionally similar to this product. Type of test					
	Oral LD50	rat	>5000 mg/kg		
	Dermal LD	rabbit	>5000 mg/kg		
	Skin irritation	rabbit	practically non-irritating		

	Eye irritation	rabbit	inconsequential irrational
12. ECOLOGICAL INFORMATION			
No Applicable Data			
13. DISPOSAL CONSIDERATIONS			
Procedure	Coagulate the emulsion by the stepwise addition of ferric chloride and lime. Rerr and flush to a chemical sewer.		
	Landfill or incinerate remaining solids in accordance with local, state and federal		
14. TRANSPORT INFORMATION			
US DOT Hazard Class	NONREGULATED		
15. REGULATORY INFORMATION			
Workplace Classification	This product is considered non-hazardous under the OSHA Hazard Communicati 1910.1200).		
	This product is not a ?controlled product? under the Canadian Workplace Hazard System (WHMIS).		
SARA TITLE 3: Section 311/312 Categorizations (40CFR 370)	This product is not a hazardous chemical under 29CFR 1910.1200, and therefore of SARA		
SARA TITLE 3: Section 313 Information (40CFR 372)	This product does not contain a chemical which is listed in Section 313 at or above concentrations.		
CERCLA Information (40CFR 302.4)	Releases of this material to air, land, or water are not reportable to the National R Comprehensive Environmental Response, Compensation, Liability Act (CERCLA) emergency planning committees under the Superfund Amendments and Reauthor III Section 304.		
Waste Classification	When a decision is made to discard this material as supplied, it does not meet RC definition of ignitability, corrosively, or reactivity, and is not listed in 40 CFR 26 characteristic (TC), however, has not been evaluated by the Toxicity Characterist (TCLP).		
United States	All components of this product are in compliance with the inventory listing requir Substances Control Act (TSCA) Chemical Substance Inventory.		
Pennsylvania	Any material listed as ?Not Hazardous? in the CAS REG NO. column of SECTIC Composition/Information On Ingredients, of this MSDS is a trade secret under the Pennsylvania Worker and Community Right-to-Know Act.		
16. OTHER INFORMATION			
HMIS Hazard Ratings	HEALTH = 1, FLAMMABILITY = 0, REACTIVITY = 0.		
	PERSONAL PROTECTION: See Section 8, Exposure Controls/Personal Protecti handling of material as supplied; check with supervisor for your actual use condit		
	Scale: 0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe		
	* = Chronic Effects (See Section 3, Hazards Identification)		
HMIS is a registered trademark of the National Paint and Coatings Association.			
ABBREVIATIONS			
ACGIH	American Conference of Governmental Industrial Hygienists		
OSHA	Occupational Safety and Health Administration		
TLV	Threshold Limit Value		
PEL	Permissible Exposure Limit		
TWA	Time Weighted Average		
STEL	Short-Term Exposure Limit		
Bac	Butyl acetate		
	Bar denotes a revision from previous MSDS in this area		
The information contained herein relates only to the specific material identified. Vermillion?s Environmental Products and Applications, Inc. believes the reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, expressed or implied, is made as to the accuracy, reli information. Vermillion?s Environmental Products and Applications, Inc. urges persons receiving this information to make their own determination as to completeness for their particular application.			

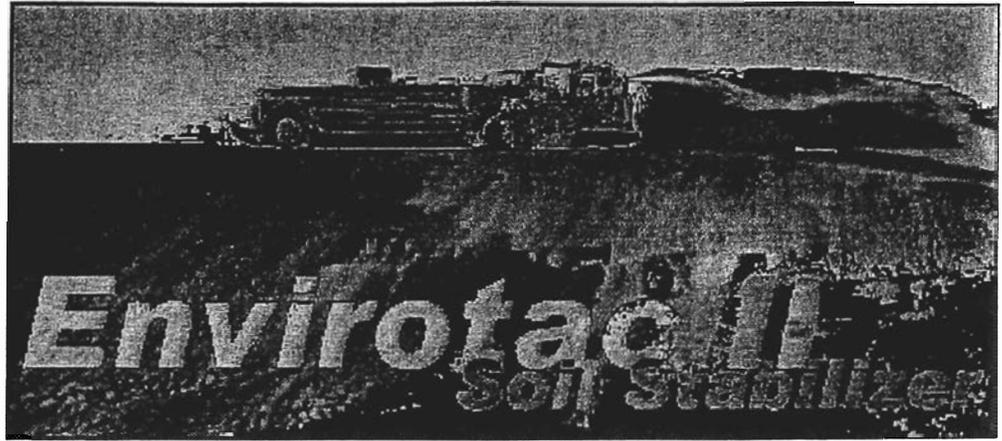
Envirotac II[®]

Contact Us at: Info@Envirotac.com with questions or comments about Envirotac II or our website



Visa & Mastercard
Accepted

Envirotac II[®], Rhino-Snot[®] are registered trademarks of Vermillion?s Environmental Products and Applications, Inc. Modified: 5/14/2003 by EPA



Product Description

Envirotac II® is a unique dust and erosion control product. When applied to the surface of any soil, it will penetrate down into the soil to create a tough layer of protection. Upon drying, Envirotac II® binds the soil's particles together forming a clear, plastic, resin bond. The level of Envirotac II® protection is determined by the amount used for each application. Light applications of Envirotac II® are effective for cementing soil particles together for dust and erosion control, while allowing water and air to still penetrate the surface. Heavier applications build a durable and waterproof layer of protection. This hard surface is flexible and can even withstand the demands of vehicle traffic. Therefore, making Envirotac II® a cost-effective alternative for unpaved roads. For extreme protection Envirotac II® can be mixed or tilled into the soil rather than a surface only treatment. This makes for a hard sub-base and prolongs the effectiveness of the surface integrity.

Dust, PM₁₀ & PM_{2.5}

- Environmental regulation compliance
- Lung damage & carcinogens
- Air pollution
- Erosion damage
- Low-visibility & brown-outs
- Track-out
- Water conservation
- Odors & vapors
- Ground water contamination
- Equipment damage
- Aggregate loss
- Vehicle efficiency & traction
- Controlled fire revegetation
- Crop & vegetation smothering
- Soil drift, sand dunes and land slides

Product Features

- Environmentally Safe
- PM-10 & PM-2.5 Compliant
- Long & Short Term Applications Available
- Resists Breakdown from Water, UV Rays and Alkaline
- Non-Flammable

- Non-Leaching
- Non-Dissipating
- Non-Tracking
- Self Mixes with Water (to apply)
- Dries Odorless
- Dyes can be added for Color

Product Performance

For Price & Performance, Envirotac II® is proven to work better than the following products:

- **Chloride** based products (CaCl₂, MaCl₂, etc.)
- **Lignin** based products (Lignosulfonates)
- **PAM** (polyacrylamides)
- **Petroleum Emulsions**
- **Resin Emulsions**
- **Organic Oils**
- **Enzymes**
- **Watering**

Envirotac II is Your Solution for:

Landing Pad Stabilization

Helicopter landing pads
Aircraft runways / airstrips / taxiways
Airports / Infields

Haul Road Stabilization

Mining all-season unpaved dirt access roads
Construction unpaved dirt access roads (avoid Track-Out)
Agricultural / Farming unpaved dirt roads

Dirt / Unpaved Road Stabilization

Unpaved roads for cars & trucks / Shoulders
Unpaved residential driveways
Parking Lots

Erosion Control

Slopes / Banks / Berms
Embankments / Hills
Mining tailing pond dams

Dust Control

Construction Sites / Graded pads
Disturbed lots / Battlefields / Open ranges
Mining tailing ponds

Mine Tailing / Landfill / Stock Pile Capping

Fly Ash / Coal / Dirt / Gravel / etc.
Landfills
Mining tailing ponds

Hydro-seed Tackifier

Revegetation
Germination accelerant
Seed Tackifier

Odor / Vapor Suppression

Hazardous sites
Landfills
Agricultural sites

Trail Stabilizer

Paths / Walkways
Parks & Recreation
Forestry sites

And Much More...

Designed Specifically for:

- Unpaved Road Stabilization & Pothole Elimination
- Dust Abatement, Dust Containment & Dust Control
- Dust Palliative, Dust Remediation & Dust Suppressant
- Erosion Control, Sediment Control & Silt Containment
- Hazardous Site Sealing, Capping & PPM Elimination
- Seed Germination Accelerant & Hydroseed Tackifier
- Asphalt Rock Dust Palliative (ARDP) Alternative
- Soil Stabilization & Sediment Stabilizer
- Sub-Base Hardening
- Surface Sealing
- Stock Pile Capping & Stabilizing
- U.S. Armed Forces (A.K.A.): "Gorilla Snot, Magic Glue, & Rhino Snot"

[EP&A](#) | [Got Dust](#) | [Awards](#) | [FAQ](#) | [Camp Rhino](#) | [Envirotac II Description](#) | [Product Trials](#) | [Equipment Shipping](#) | [Application Rates](#) | [Custom Formulations](#) | [MSDS](#) | [PDFs](#) | [Contact Us](#)

Envirotac®

Contact Us at: Info@Envirotac.com
with questions or comments about Envirotac II



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Vermillion's Environmental Products and Applications, Inc.
Last modified: 2/11/2005 by EP&A Inc.

MATERIAL SAFETY DATA SHEET

Non Toxic Material, Unregulated

I. PRODUCT IDENTIFICATION

TRADE NAME: *PolyPavement Soil Solidifier*

MANUFACTURER: *PolyPavement Company* (As specified by ECO-Polymers)
P.O. Box 36339
Los Angeles, California 90036

Phone: 323 954 2240

DATE REVISED: January, 1997

II. COMPOSITION / INGREDIENTS

NON HAZARDOUS, NON-TOXIC (Acute Static Aquatic Test @ 7,450 ppm or better)

WATER BASED COPOLYMER EMULSION

Variations in physical properties of emulsified polymer particles and solids content of CF, SS, PP and AMX trade names. (i.e. weight, particle size, viscosity, color, emulsifier)

No contents or ingredients have been identified as a carcinogen or probable carcinogen by NTP, IARC, or OSHA.

III. PHYSICAL PROPERTIES

Vapor Density (Air = 1): Same as Water

Melting point or range °F: Not Applicable

Specific Gravity: Approximately 1.1

Boiling Point: Approximately 212 °F

Solubility in Water: Insoluble/Dilutable

Evaporation Rate: Non-evaporative, water transported material

Vapor Pressure, mmHg @ 20 °C: Approx. 17.5

Appearance, Odor: Milky-yellowish fluid,
Slight ester odor

Detection: No special detection methods required.

NOTE: This format is a modified version of the format provided by Cal/OSHA to assist MSDS preparers and users. It contains all of the required information. Some non applicable categories are omitted.

IV. FIRE AND EXPLOSION

Flash Point, °F (give method) None wet; dried solid: greater than 400 F if any
Auto Ignition temperature, °F Not applicable
Flammable limits in air, volume % Not applicable lower (LEL) N/A upper (UEL) N/A

Fire extinguishing materials: for dried solids

water spray carbon dioxide _____ other:
 foam dry chemical

Special firefighting procedures: Water may be useful in keeping fire exposed containers cool.

Unusual fire and explosion hazards: None

V. HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE for each potential route of exposure.

Inhaled: No harmful effects are expected from breathing vapors of this material.
Contact with skin or eyes: Flush eyes with water. Washing with a mild soap may be helpful for skin.
Absorbed through skin: Not applicable
Swallowed: Drink 2 glasses of water. If symptoms develop, seek medical attention.

HEALTH EFFECTS OR RISKS FROM EXPOSURE. Explain in lay terms. Attach extra page if more space is needed.

Acute: None

Chronic: None

FIRST AID - NOT NORMALLY REQUIRED

Eye contact: Wash with water.
Skin contact: Wash with water, a mild soap may be helpful.
Inhaled: Not applicable.
Swallowed: If symptoms develop, seek medical attention.

SUSPECTED CANCER AGENT?

NO: This product's ingredients are not found in the lists below.

Federal OSHA NTP IARC

California employers using Cal/OSHA - regulated carcinogens must register with Cal/OSHA. The Cal/OSHA and Federal OSHA carcinogen lists are similar.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

N/A

VI. REACTIVITY DATA

Stability: Stable Unstable

Conditions to avoid: Not applicable, temperature extremes are not recommended.

Incompatibility (materials to avoid): No hazardous reactions are expected under normal industrial conditions

Hazardous decomposition products (including combustion products):

Combustion may yield carbon monoxide and/or carbon dioxide.

Hazardous polymerization: May occur Will not occur

VII. SPILL, LEAK AND DISPOSAL PROCEDURES

Spill response procedures (include employee protection measures):

Flush into suitable retaining areas or containers with large quantities of water. Small amounts may be absorbed into an appropriate absorbent. Prevent spill from entering sewers, drainage systems and waterways. Contact local agencies/authorities.

Preparing wastes for disposal (container types, neutralization, etc.):

No special disposal preparation required.

NOTE: Dispose of all wastes in accordance with federal, state and local regulations.

VIII. SPECIAL HANDLING INFORMATION

INDOOR Ventilation and engineering controls

Local exhaust ventilation may be helpful and may be needed if existing ventilation is inadequate.

INDOOR Respiratory protection (recommended type)

Though vapor is harmless, when ventilation is inadequate, the slight ester odor might be annoying. NIOSH approved respirator or gas mask with appropriate cartridges and canisters may be needed to minimize exposure to odor.

Eye protection (type)

Splash or splatter protective goggles recommended to avoid eye contact. Contact with eyes causes burning sensation similar to soap or mild shampoo.

Gloves (specify material)

Impermeable gloves recommended to avoid skin contact. Material is a rubber-like glue that dries to a film. Film is harmless to the skin but it has to be rubbed off.

Other clothing and equipment

Impermeable clothing should be worn as needed. If material comes in contact with clothing, it is not easily cleaned off of the fabric. Clothing may be irreparably damaged.

Work practices, hygienic practices

Keep product containers closed when not in use.

Other handling and storage requirements

Avoid extreme temperatures. **AVOID FREEZING.** Shocking the emulsion with large quantities of chemicals or extreme shear may cause coagulation.

Protective measures during maintenance of equipment None other than as stated above.

ECO • POLYMERS, INC.

P.O. BOX 4860, CERRITOS, CALIFORNIA 90703-4860

(310) 407-3090

MEMORANDUM

TO: APPLICATION ENGINEERS & ENVIRONMENTAL ASSOCIATES

FROM: RONALD E. REED

DATE: JANUARY 24, 1994

SUBJECT: ENVIRONMENTAL SAFETY OF ECO-CF SOIL BINDER

On July 12, 1993, the State of California's Department of Fish and Game completed an LC-50 Static Acute Toxicity test on ECO-CF Soil Binder. The purpose of this standard test is to quantify ECO-CF's potential to cause the mortality of fish and other sensitive aquatic life in the event that ECO-CF is applied in an area where immediate run-off might be anticipated within a few hours of application.

The test recognizes that mortality in fish is caused by all chemicals at one concentration or another. The concern was at what concentration does ECO-CF become unsafe for fish, and is ECO-CF likely to pose a threat to sensitive aquatic life when used normally or when misused.

The LC-50 Static Acute Toxicity level for liquid ECO-CF was determined to be 7,450 ppm (parts per million). This is well within the practical limits of normal use and potential mishaps.

Translated into numbers for easy understanding, the test results show that a small lake containing only 100 acre feet of water (5 acres of area by 20 feet deep), requires more than 275,000 gallons of ECO-CF (55 full tanker trucks) to contaminate it. The ECO-CF would have to be pumped from the tankers into the lake simultaneously. In order to accomplish this feat of contamination, two rows of tankers would have to park end-to-end on the lake shore completely surrounding the lake and pump their full loads into the lake.

For additional reference, if fish lived in backyard swimming pools, it would take three 55-gallon drums of ECO-CF Soil Binder poured directly into the pool to render the pool unsafe for fish and other sensitive aquatic life.

Mr. Michael E. Rugg
Water Quality Biologist
State of California
Department of Fish and Game

Phone: (707) 944 5523

Acute Toxicity of Polymer Materials
Test Sample #1 (LN-93-48-1) (BN-37-93-1)
ECO-CP Polymer, Manufactured by

ECO-Polymers, Inc.
P.O. Box 4860
Cerritos, CA 90703

Test Completion Date: July 12, 1993

LC-50 of 7,450 ppm for ECO-CP Polymer

PolyPavement™

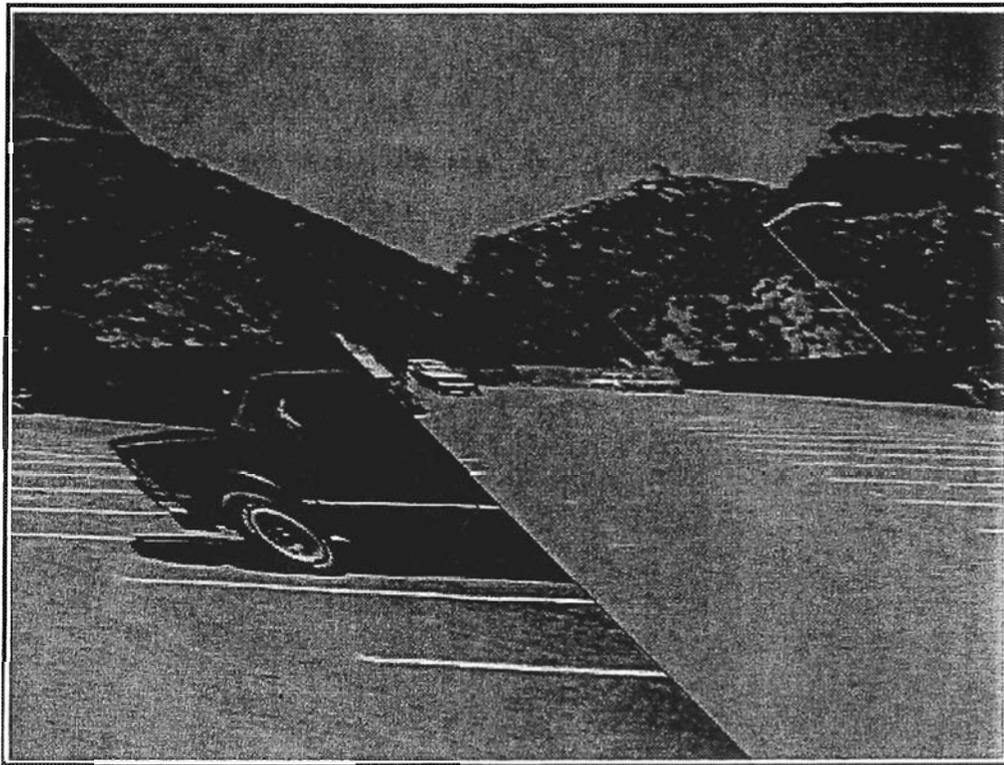
The Natural Soil Pavement

Home Application Methods Costs Specifications Field Application Equipment Environmental More Information Contact Us

When your landscaping vision requires a paved area, your vision should include



**PolyPavement solidifies earth to make Natural Soil Pavement.
It allows you to showcase Nature's Beauty, not hide it.**



Unlike soil stabilizers that hold down dust and dirt marginally, PolyPavement provides a solid pavement wear surface. PolyPavement converts the earth itself into a solid pavement, allowing the use of the complete palette of Nature's earth tones, colors and hues.

Please review the website and learn how



Paves the Way for Nature

PolyPavement is a liquid soil solidifier. The grounds-maintenance crew or a landscape contractor installs it. The existing natural soil or decorative soils such as decomposed granite or suitable fine particle sand may be used.

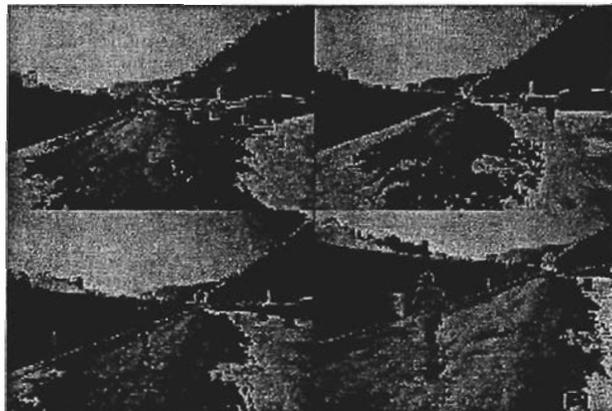
PolyPavement does not change the color of the soil. Natural Soil Pavement is more than two times stronger than asphalt. It is not damaged by rain. It supports heavy vehicles. And it requires little or no maintenance. Foot-traffic areas, parking lots, service roads, etc. may be specified to meet any and all design requirements.

PolyPavement Has Many Uses PolyPavement is an esthetically pleasing alternative to asphalt and concrete. With PolyPavement, the existing in-place soil or a suitable imported soil is used for 98% of the pavement construction material. There are many traffic area applications and non-traffic area applications for PolyPavement. Consider these:

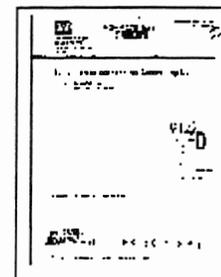
- | | |
|----------------------|-------------------------|
| ◆ SERVICE ROADS | ◆ WHEELCHAIR ACCESS |
| ◆ DRIVEWAYS | ◆ PATIOS & PICNIC AREAS |
| ◆ PARKING LOTS | ◆ PATHS & WALKWAYS |
| ◆ STORAGE YARDS | ◆ TRAP & BUNKER LINING |
| ◆ LANDING STRIPS | ◆ DUST PREVENTION |
| ◆ BMX/BICYCLE TRACKS | ◆ EROSION PREVENTION |
| ◆ TENNIS COURTS | ◆ SLOPE PROTECTION |
| ◆ GOLF CART PATHS | ◆ VEGETATION PREVENTION |



Proven Performance The U.S. Army Corps of Engineers tested PolyPavement's natural oil pavement technology. Approximately 350 other methods and materials were also tested by the Corps of Engineers.



PolyPavement passed all USACE performance criteria for rubber tire traffic and non traffic applications in all climates. No other material performed as well as PolyPavement and no other material had equivalent versatility, easy installation or as low a cost. Based strictly on the performance test results, USACE recommends PolyPavement for roads, helicopter landing pads, and other traffic and non-traffic surfaces in desert, tropic and temperate climates. No other method or material was recommended as highly.



Click to enlarge photo



Sand particles **before** PolyPavement



Sand particles **after** PolyPavement



Strict Quality Control



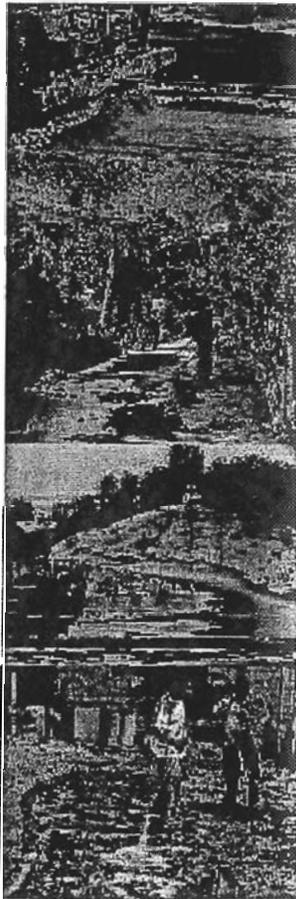
UV Test in progress

Easy To Install PolyPavement may be installed by the maintenance crew utilizing readily available equipment. Simply dilute it with water and spray it onto compact soil; or mix it into loosened soil and compact it. A roto-tiller, a smooth drum compactor and a dilution tank with hose & nozzle are recommended. PolyPavement does not damage equipment. Easy-to-follow application instructions are provided. Unused portions of PolyPavement soil solidifier can be stored in the drums and used whenever needed for small or large areas.

SPRAYING

MIXING

COMPACTING



Low Cost plus Many Benefits One inch of PolyPavement is more supportive than one inch of asphalt. Inch for inch, PolyPavement costs significantly less than asphalt. Spray-on applications of PolyPavement are effective for light traffic areas. Spray-on applications of PolyPavement are less than one-half inch thick, for outstanding cost effectiveness.

PolyPavement requires little or no maintenance. If damage occurs from spikes or other point forces, it is repaired easily by filling the holes with a pourable mixture of PolyPavement and the natural soil or patching by spreading and compacting a drier PolyPavement and soil mix into the damaged area.

PolyPavement **never** needs to be removed and replaced as with asphalt and concrete. Instead, after it wears, more PolyPavement can be applied on top of old PolyPavement inexpensively to extend the life of a Natural Soil Pavement application indefinitely.

Environmentally Safe PolyPavement is non-toxic to plants and animals. It has been tested and proven safe for sensitive aquatic life. It does not leach into the ground water. PolyPavement may be applied in environmentally sensitive areas without worry or concern.



Easy to Specify PolyPavement may be specified on construction plans by using one of the construction plan specifications provided by PolyPavement. Simply call out the recommended PolyPavement thickness, and specify the soil material that meets the architect's or the owner's esthetic requirements.

[home](#) • [application methods](#) • [costs](#) • [specifications](#) • [field application equipment](#) • [environmental](#) • [more information](#) • [contact us](#)



P.O. Box 36339, Los Angeles, California 90036 • Phone: (323) 954-2240 • Fax: (323) 954-2244
E-mail: tech@polypavement.com

— • —
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FEATURES

INSPIRING IDEAS

eMagazine


PolyPavement™

P.O. Box 36339, Los Angeles, California 90036

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Phone: (323) 954-2240 Fax: (323) 954-2244

Email: tech@polypavement.com

Website: www.polypavement.com

BELIEVE IT OR NOT, THESE TRAFFIC AREAS ARE PAVED



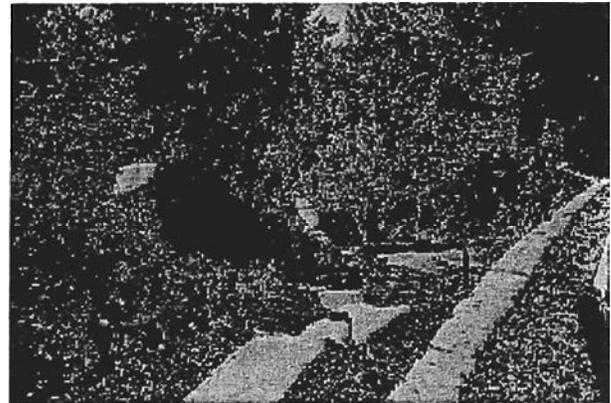
PolyPavement Natural Soil Pavement is an innovative liquid soil solidifier that is more than two times stronger than asphalt and costs much less. The grounds-maintenance crew or a landscape contractor applies it by either spraying it on to compacted soil or mixing it into loosened, in-place soil, depending on the desired end use. Decorative soils such as decomposed granite or suitable fine particle sand may also be used. PolyPavement does not change the color of the soil. It is not damaged by rain. It supports heavy vehicles. And it requires little or no maintenance. Natural looking foot-traffic areas, parking lots, driveways, service roads and more may be specified to meet any and all design requirements..

Proven Performance Recommended by the USACE

The U.S. Army Corps of Engineers (USACE) tested PolyPavement's natural soil pavement technology. Approximately 350 other methods and materials were also tested by the Corps of Engineers. PolyPavement passed *all* USACE performance criteria for rubber tire traffic and non traffic applications in *all* climates. No other material performed as well as PolyPavement and no other material had equivalent versatility, easy installation or as low a cost. Based strictly on the performance test results, USACE recommends PolyPavement for roads, helicopter landing pads, and other traffic and non-traffic surfaces in desert, tropic and temperate climates. No other method or material was recommended as *equally* suitable.

Environmentally Safe

PolyPavement may be applied in environmentally sensitive areas without worry or concern. It is non-toxic to plants and animals. It does not leach into the ground water. In the event of an accidental spill, static acute toxicity tests show that PolyPavement poses *no* threat to sensitive aquatic life. In fact, tests indicate that in order for PolyPavement to harm aquatic life in a lake 20 feet deep by 5 acres, two rows of fully loaded tank trucks parked end-to-end would have to completely encircle the lake and pump their loads of PolyPavement into the lake simultaneously!



***"For natural looking roads,
parking lots and trails that are
environmentally safe, stronger
than asphalt, cost less and
practically maintenance free:
just add PolyPavement and
water."***

View Specifications

[back to top](#)

Midwest Industrial Supply, Inc.
P.O. Box 8431
Canton, OH 44711

Emergency Phone Number: 330-456-3121

SOIL-SEMENT®

Dust and Erosion Control Agent

MATERIAL SAFETY DATA SHEET

Please replace any other MSDS for this product with the attached MSDS.

PRODUCT: SOIL-SEMENT® dust and erosion control agent

MSDS NUMBER: 2000

UPDATED EFFECTIVE DATE: July 6, 2005

PREVIOUS VERSION MSDS NUMBER: 2000

PREVIOUS VERSION DATE: any previous version dates of MSDS number 2000 SOIL-SEMENT®

REASON FOR UPDATE: Added California Proposition 65 Statement

Midwest Industrial Supply, Inc.
P.O. Box 8431
Canton, OH 44711

SOIL-SEMENT®

Dust and Erosion Control Agent

Emergency Phone Number: 330-456-3121

MATERIAL SAFETY DATA SHEET

SECTION I -- IDENTIFICATION OF SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

TRADE NAME: SOIL-SEMENT®
CHEMICAL NAME: POLYMER EMULSION
SYNONYMS: DUST RETARDANT
CHEMICAL FAMILY: N/A
MOLECULAR WEIGHT: N/A
FORMULA: AQUEOUS ACRYLIC VINYL ACETATE POLYMER EMULSION
CAS REGISTRY NO.: PRODUCT A BLEND - NO NUMBER ASSIGNED

SECTION II -- COMPOSITION/INFORMATION ON INGREDIENTS

<u>NAME</u>	<u>CAS REG NO.</u>	<u>WT. %</u>
Acrylic & Vinyl Acetate Polymer	Non-hazardous	5-50
Water	7732-18-5	95-50

SECTION III -- HAZARDS IDENTIFICATION

Acrylic & Polyvinyl Acetate Polymer	Non-hazardous
Water	Non-hazardous

SECTION IV -- FIRST AID MEASURES

EYES: Flush eyes with flowing water at least 15 minutes, get medical attention.
INHALATION: Move subject to fresh air.
SKIN: Flush with large amount of water or wash with soap and water.
INGESTION: Give water to drink. Call a physician.

NEVER GIVE FLUIDS OR INDUCE VOMITING.

IF PATIENT IS UNCONSCIOUS OR HAVING CONVULSIONS.

Midwest Industrial Supply, Inc.
P.O. Box 8431
Canton, OH 44711

Emergency Phone Number: 330-456-3121

SOIL-SEMENT®

Dust and Erosion Control Agent

MATERIAL SAFETY DATA SHEET

SECTION V -- FIRE FIGHTING MEASURES

FLASH POINT (TEST METHOD): Non-Combustible
AUTOIGNITION TEMPERATURE: N/A
EXTINGUISHING MEDIUM: N/A
SPECIAL FIREFIGHTING PROCEDURES: N/A
UNUSUAL FIRE AND EXPLOSION HAZARDS: Material can splatter above 212°F. Dried polymer film can burn but will not support combustion.

SECTION VI - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES:
Dike and control spill. Transfer liquid to containers for recovery or disposal.
Keep spills out of sewers and open bodies of water.

SECTION VII -- HANDLING AND STORAGE

STORAGE: Keep in a cool, dry, ventilated storage area and in closed containers.
Minimize contact with the air to prevent microorganism contamination and reduce the formation of skins on the surface. Optimum storage temperatures 55°F (12°C – 32°C).

KEEP FROM FREEZING

HANDLING: Handle in a well-ventilated workspace.

SECTION VIII -- EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION: None required if good ventilation is maintained.
VENTILATION: Mechanical exhaust at point of contaminant.
EYE PROTECTION: Chemical splash goggles recommended.
PROTECTIVE CLOTHING: Impervious gloves recommended.

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OTHER: Under normal handling conditions, the risk of exposure to residual monomer is negligible.

SECTION IX -- PHYSICAL AND CHEMICAL PROPERTIES

BOILING/MELTING POINT @ 760 mm Hg: 212°F
VAPOR PRESSURE mm Hg @ 20° C: 17
SPECIFIC GRAVITY OR BULK DENSITY: 1.01 to 1.15
SOLUBILITY IN WATER: Dilutable
APPEARANCE: Milky White Liquid
ODOR: Characteristic Acrylic odor
pH: 4.0 to 9.5

SECTION X -- STABILITY AND REACTIVITY

STABILITY: Stable
CHEMICAL INCOMPATIBILITY: No hazardous reactions are expected to occur under normal industrial conditions.
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition in the presence of air may yield carbon monoxide and/or carbon dioxide and water.
HAZARDOUS POLYMERIZATION: Does not occur
CONDITIONS TO AVOID: N/A
CORROSIVE TO METAL: No
OXIDIZER: No

SECTION XI -- TOXICOLOGICAL INFORMATION

EFFECTS OF OVEREXPOSURE

INHALATION: Vapor from stored, undiluted product can cause headache and nausea.
SKIN: Stored, undiluted product is slightly irritating to skin.
EYES: Slightly irritating to eyes.

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INGESTION: May be irritating to digestive tract.

NAME	OSHA		ACGIH	
	TWA	STEL	TWA	STEL
Acrylic & polyvinyl Acetate Polymer	None	None	None	None
Water	None	None		None

SECTION XII -- ECOLOGICAL INFORMATION

Animal toxicity studies on blended SOIL-SEMENT® have not been carried out because we believe the fish toxicity studies done on the blend demonstrate it is as non-toxic as the individual emulsions which go into the blend. TABLE #1 gives the results of our fish toxicity tests.

In summary, these data show that the LC₅₀ of SOIL-SEMENT® on goldfish is somewhere above 12,500 ppm. This is extremely low toxicity, especially in view of the legal requirement that chemicals must be labeled "toxic to fish" only if their LC₅₀ is less than 1.0 ppm.

TABLE I

EMULSION NUMBER	TYPE OF FISH	HOURS	LC ₅₀ PPM
C	Rainbow Trout	24	10,000
C	Rainbow Trout	96	8,950
C	Bluegill Sunfish	24	10,000
C	Bluegill Sunfish	96	5,640
C	Goldfish	24	4,200
H	Goldfish	24	7,500
G	Goldfish	24	10,000
D	Goldfish	24	13,400
F	Goldfish	24	13,400
SOIL-SEMENT®	Goldfish	24	12,500 - 25,000
SOIL-SEMENT®	Goldfish	48	12,500 - 25,000
SOIL-SEMENT®	Goldfish	72	12,500 - 20,000
B	Goldfish	24	24,000
E	Goldfish	24	24,000

The 48 hour LC₅₀ for Daphnia Magna based on nominal test concentrations and mortality at the end of testing was calculated to be 3,482.8 parts per million (ppm).

SECTION XIII -- DISPOSAL CONSIDERATIONS

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Dust and Erosion Control Agent

MATERIAL SAFETY DATA SHEET

WASTE DISPOSAL METHOD:

Coagulate the emulsion by the stepwise addition of ferric chloride and lime or the addition of sand or other absorbent material. Remove the clear supernatant liquid and flush to a chemical sewer or landfill. Incinerate solids and the contaminated diking material according to local, state and federal regulations.

CONTAINER DISPOSAL:

Do not re-use containers. Do not weld on metal containers.

SECTION XIV -- TRANSPORTATION INFORMATION

D.O.T. PROPER SHIPPING NAME (49CFR172.101): None
HAZARDOUS SUBSTANCE (40CFR116): N/A
REPORTABLE QUANTITY (RQ): N/A
D.O.T. HAZARD CLASSIFICATION (49CFR172.101): Non-regulated
D.O.T. PLACARDS REQUIRED: None
POISON CONSTITUENT (49CFR173.343): N/A
BILL OF LADING DESCRIPTION: Liquid plastic, NOS
C NO.: N/A
UN/NA CODE: N/A

SECTION XV-- REGULATORY INFORMATION

SOIL-SEMENT® is not a restricted article according to the Department of Transportation and International Air Transport Association regulations.

EPA SARA Title III hazard class: None
OSHA HCS hazard class: Non-OSHA hazardous (29CFR1910.1200)
EPA SARA Title III Section 313 (40CFR372)

Toxic Chemicals present in quantities greater than the "de minimus" level are: None

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MATERIAL SAFETY DATA SHEET

TSCA:	All ingredients are on the TSCA (Toxic Substance Control Act) inventory or are not required to be listed on the TSCA inventory.
California Proposition 65:	This product contains no trace amount of chemical(s) know to the state of California to cause cancer of birth defects.
Canadian DSL:	All ingredients are in the Canadian DSL (Domestic Substance List) or are not required to be on the list.
Canadian WHMIS:	This product is not a “controlled product” under the Canadian Workplace Hazardous Material Information System (WHMIS)

SECTION XVI – OTHER INFORMATION

ABBREVIATIONS AND SYMBOLS:

N.D. - Not Determined
< - LESS THAN

N.A. - Not Applicable
> - MORE THAN

N.T. - Not Tested



Soil-Sement[®]

DUST CONTROL, EROSION CONTROL, STABILIZATION



MIDWEST
INDUSTRIAL SUPPLY, INC.

*Leader
in
Environmental
Stewardship*



Outstanding Features and Benefits of Soil-Sement®:

- Nearly eliminates particulate matter (PM₁₀ and PM_{2.5}).
- Does not contain any detectable polycyclic organic matter (POM) which includes polynuclear aromatic hydrocarbons (PAH).
- Is environmentally safe, non-toxic, non-corrosive, non-flammable and does not pollute groundwater.
- Has a cumulative effect and creates a stabilized surface which will resist shifting, breaking up or sink failures.
- Offers maximum weatherability to wind, rain, ultraviolet light and other weather conditions.
- Increases load-bearing strength of all types of soils and surfaces.
- Prevents water from seeping into and destabilizing the surface.
- Dries clear, providing an aesthetically pleasing appearance.
- Meets air, water, groundwater and stormwater compliance.



What is Soil-Sement®

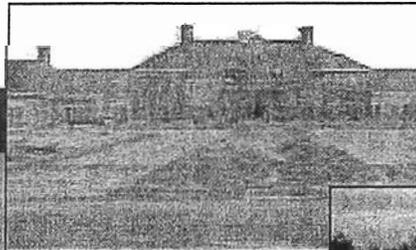
Dust and Erosion Control Agent

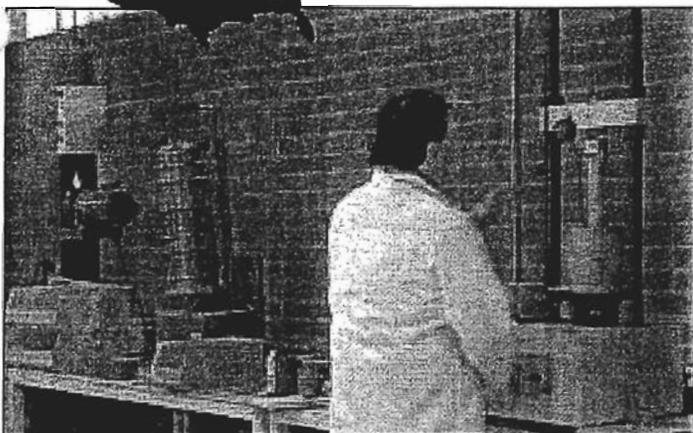
Soil-Sement® is an environmentally safe, advanced powerful polymer emulsion that produces highly effective dust control, erosion control and soil stabilization. Soil-Sement® provides excellent bonding, cohesion, versatility, cost-effectiveness, environmental compliance and superior overall performance.

Soil-Sement®'s effectiveness results from the length and strength of its unique polymer molecule formulation and those polymer molecules' ability to bond with the surface materials. Its chemical structure is made of molecules attached in relatively straight-linked chains and then cross-linked among other chains or grids that may be 1,000,000 molecules long. It is a true giant compared to the much smaller molecular structure of oil, calcium, petroleum resin and asphalt emulsion products, which range from 100 to 10,000 molecules. As a result, Soil-Sement® can be as strong as steel or as resilient as rubber.

Soil-Sement® is the cumulation of 24 years of focused research and development, and unparalleled concentration on PM₁₀, PM_{2.5}, erosion control and stabilization solutions. It yields proprietary one-of-a-kind polymer chemistry manufactured to rigid quality standards utilized in combination with field experience in all industrial, commercial and municipal environments. The result is a performance and value combination that is unequaled by other chemical and polymer products. As a result Soil-Sement® has been the standard of comparison for all chemical types, including polymer products, since it's introduction in 1978. Especially today Soil-Sement® exemplifies the fact that **all polymers are not made equal.**

A Soil-Sement® treated surface will provide you with optimum performance 365 days a year!





Since 1975, Midwest Industrial Supply, Inc. has built a reputation of leadership through products and services that continually redefine dust control, erosion control and stabilization technology.

Our customers expect products that deliver real benefits, with performance far superior to other types of products being used today.

Our advantages include a full on-site laboratory with the latest state-of-the-art equipment.

We also have a group of dedicated, experienced professionals who are always ready to assist you with all of your dust control, erosion control and stabilization needs.



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Manufacturing Capabilities

We operate over 160,000 square feet of manufacturing and warehouse facilities in our Canton, Ohio location, with satellite operations located across the United States, Canada and Europe. We provide a complete research and development lab giving us total control over the formulation, manufacturing, quality and distribution of all of our products. Midwest's quality manufacturing process is designed to meet the criteria of ISO-9001.

Complete Customized Selling

We work with each customer to develop a customized dust or erosion control program that addresses your specific needs and requirements. Complete location surveys, soil evaluations, review of state and local air quality regulations, and other critical data are all combined as part of our detailed proposals and control plans. This determines the products, services, equipment, personnel, application schedules and budgets needed to do the job right.

Turn-key Applications

We offer complete turn-key application services. We serve our customers with a full-time fleet of properly equipped spray trucks and operators who are highly trained and professionally qualified. We provide field application services 24 hours a day, 7 days a week. Our central dispatch center maintains constant communications with the field operators for prompt routine service and immediate response to any emergency situation.

Recordkeeping and Reporting

We collect site, product, and application specific data in the field and create required daily reports which form the basis for the comprehensive, self-monitoring program needed for air quality compliance. Our administrative staff compiles required records of your dust and erosion control program and issues detailed quarterly and annual reports. These reports are prepared for presentation to state regulatory agencies for compliance with Title V certification provisions of the Clean Air Act and each state's air quality regulations.

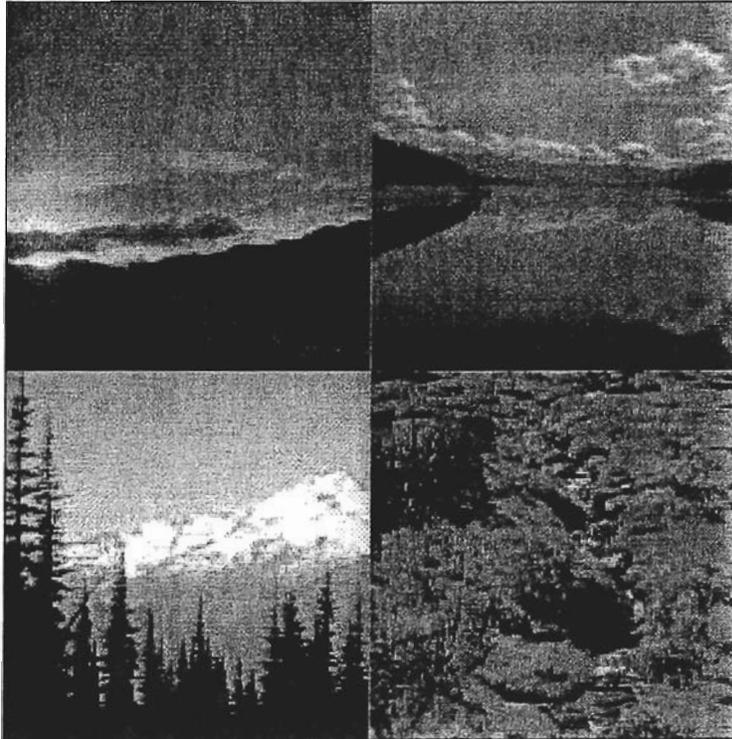
“Soil-Sement® as a dust suppressant, in accordance with the manufacturer's instructions, will result in a significant reduction of PM₁₀...”

Now and In the Future... Leader in Environmental Stewardship Midwest Industrial Supply, Inc.

Midwest Industrial Supply, Inc. has over 28 years of experience of dust suppressant formulation, manufacturing and application experience. Our extensive research and development has resulted in products that are on the cutting edge of performance and environmental technology.

asbestos-laden soil, radiation, PAHs, POMs, lead, ozone depletion and global warming. In other instances our products can be utilized to reduce the health hazards of heavy metals in mining and tailing operations, pesticide containment in soils and volatile organic compound (VOC) containment in soils.

Midwest has always taken a leadership role in establishing regulatory requirements for chemical dust suppressants and stabilizers. We pride ourselves on the fact that our product line is engineered to reduce exposure to substances that cause cancer and other serious health effects...PM10, PM2.5, naturally-occurring



Through the years Midwest Industrial Supply, Inc. has voluntarily sought and received third party verification of its stewardship...CalCert, California Air Resources Board (CARB), USEPA ETV, Canadian ETV and numerous testing and research projects — just a few of which are mentioned in the pages of this brochure.

**MIDWEST...MAKING THE FUTURE
SAFER AND HEALTHIER FOR EVERYONE!**

**Independent Tests & Certifications Confirm
Soil-Sement®'s Superior Performance & Reliability**



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**Arizona Department of
Emergency & Military
Affairs (ADEMA)**



Midwest Research Institute



San Diego State University

The world's leading advocates of new environmental technologies, and internationally recognized scientific and engineering evaluators of environmental performance have verified that Soil-Sement® is highly effective for controlling dust and the damaging effects of erosion and sediment pollution, while protecting the environmental ecosystem.

The staff of the internationally renowned California Air Resources Board (CARB) conducted an independent verification of the air quality benefits of Soil-Sement®. In particular, the staff of CARB determined that the use of Soil-Sement® as a



dust suppressant, in accordance with the manufacturer's instructions, will result in a significant reduction of PM10 emissions from unpaved roads without contributing to existing levels of volatile organic compounds. Upon completing its evaluation, the staff of CARB

notified all air pollution control districts in California that Soil-Sement®'s air quality claims had been verified. As a result of CARB's notification, air pollution control agencies have become familiar with Soil-Sement® and its proven air quality benefits.

CalCert and California Air Resources Board Certification



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The California Environmental Technology Certification Program (CalCert), an internationally recognized independent, scientific and engineering evaluator of environmental performance, and the California Air Resources Board (CARB), one of the world's leading advocates of new environmental technologies, have certified Soil-Sement®



performance. These certifications offer users and clients performance assurances when dependability is important and the cost of failure unacceptable.

"When topically applied as a dust suppressant in accordance with manufacturer's instructions, including a total target concentration of 0.28 gallons of concentrate per square yard of treated surface applied in multiple passes in a single day, Soil-Sement® reduced PM₁₀ emissions by approximately 84 percent after 339 days and 6,780 vehicles (predominantly light-duty) passes on an unpaved roadway consisting of a silty, sandy loam.

Soil-Sement® does not contain detectable levels of polynuclear organic matter which includes polynuclear aromatic hydrocarbons as defined by the Federal Clean Air Act section 112 (b); nor does Soil-Sement® contain detectable levels of fluorinated or brominated compounds that could be expected to contribute to ozone depletion or global warming."



For complete Soil-Sement® certification information from CalCert, visit calepa.ca.gov/CalCert/CertifiedTech/Midwest.htm, or from the California ARB, visit www.arb.ca.gov/eqpr/mainlist.htm, or www.soilsement.com.

"Evaluation of the Air Quality Performance Claims for the Midwest Industrial Supply, Inc. Soil-Sement® Dust Suppressant," California Air Resources Board, Executive Order G-096-029-035.

Midwest Industrial Supply, Inc. Receives Canadian Verification Certificate.

The Honorable Christine S. Stewart, Canadian Minister of the Environment, awarded a verification certificate to Midwest Industrial Supply, Inc. under the Environmental Technology Verification (ETV) Program.

The ETV Program promotes the marketability of companies engaged in the environmental industry by providing assessment and validation of suppliers' technology performance. At the same time, it provides buyers with the assurance that the technology in question does indeed perform as claimed.



Environmental Technology Verification Program — enhancing the credibility of environmental technologies

Soil-Sement®

Midwest Industrial Supply Inc.'s Soil-Sement®, when applied in accordance with the manufacturer's instructions, will:

1. on unpaved roadways in California's San Joaquin Valley
 - a. achieve at least 95% suppressant efficiency on fugitive dust (PM_{10}) for three months after application and at least 80% after 11 months, and
 - b. increase the R-value in the range of 30-40% when measured by ASTM Test Protocols D1883 and D2844, and calculated in accordance with the AASHTO Guide for Design of Pavement Structures, 1986; and
2. in acute toxicity tests, yield LC_{50} 's for rainbow trout (96-hr) and *Daphnia magna* (48-hr) of at least 7,000 ppm and 21,000 ppm, respectively.

License Number: ETV 99005
Issued to: Midwest Industrial Supply Inc.

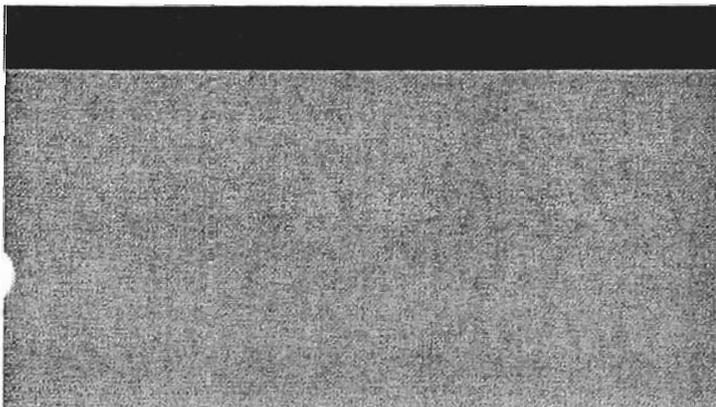
Verified*
Performance
March 25, 1999


John McMullen
President & CEO

Canada

* Refer to Technology Fact Sheet for additional information on the verification of this performance claim.

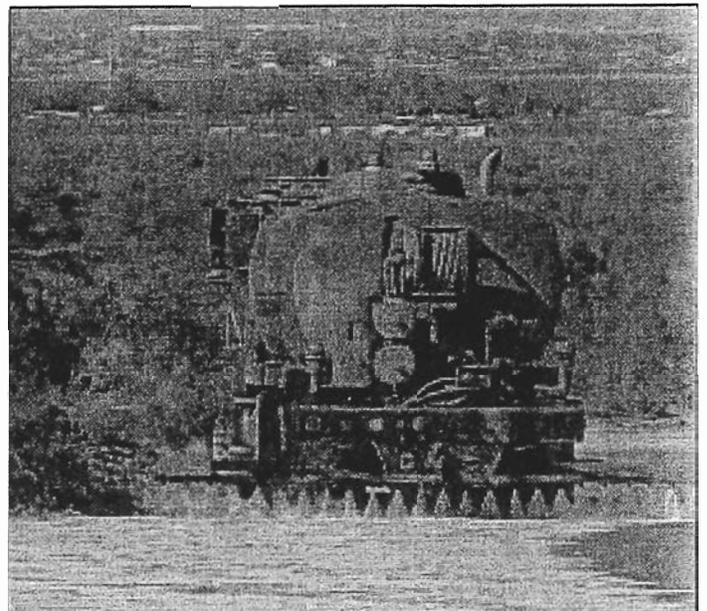
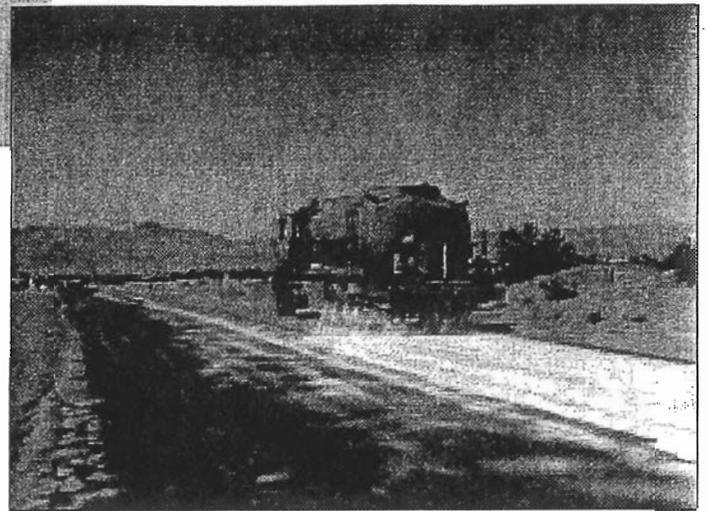
The Honorable Christine S. Stewart, Canadian Minister of the Environment presenting Canada Environmental Technology Verification certificate to Robert Vitale, President of Midwest Industrial Supply, Inc.



**Why Environmental
Technology Verification
is Valuable for You and
Why Midwest Supports ETV**

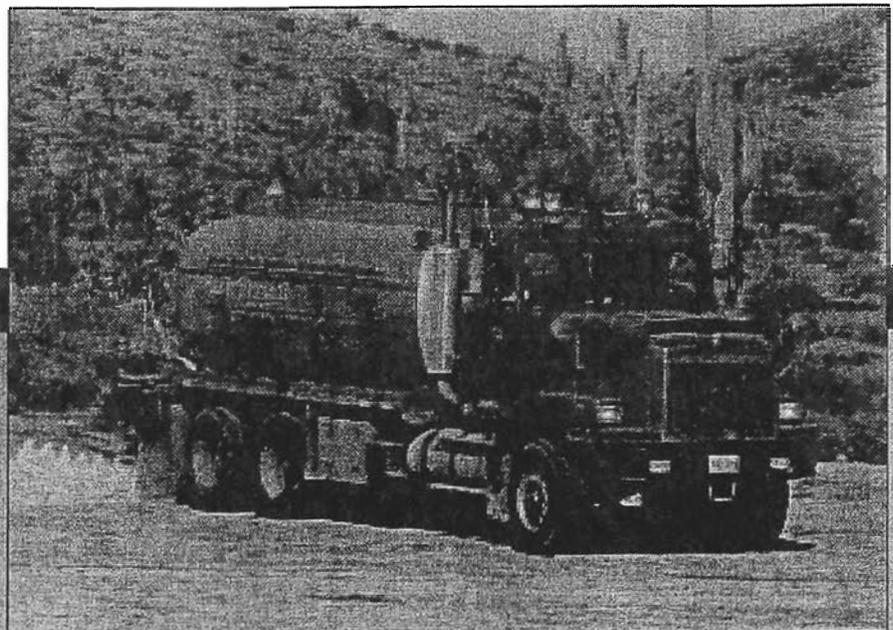


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**SOIL-SEMENT® TECHNOLOGY
CERTIFICATION REQUIRES THAT:**

- Significant reduction of PM10 emissions is verified.
- Environmental claims are verified.
- Complete evaluation and review of all test methods and protocols used to assure scientific, statistical accuracy of conclusions.
- Midwest is to continuously meet requirements for product certification to remain valid. Midwest can demonstrate having control over the manufacturing of the product to ensure we can consistently and reliably produce product that performs at least as well as the product used in the certification testing. Midwest's quality system is designed to meet the criteria of ISO-9001.
- Midwest quality management practices and standards are reviewed and certified.
- Midwest user manuals and application documents are reviewed and verified.
- Midwest's policy and procedure manual for personnel training of application is reviewed and verified.



*Soil-Sement®'s
Government
Verifications
are a Great Deal More
than Meets the Eye!*

Stabilization with Soil-Sement®

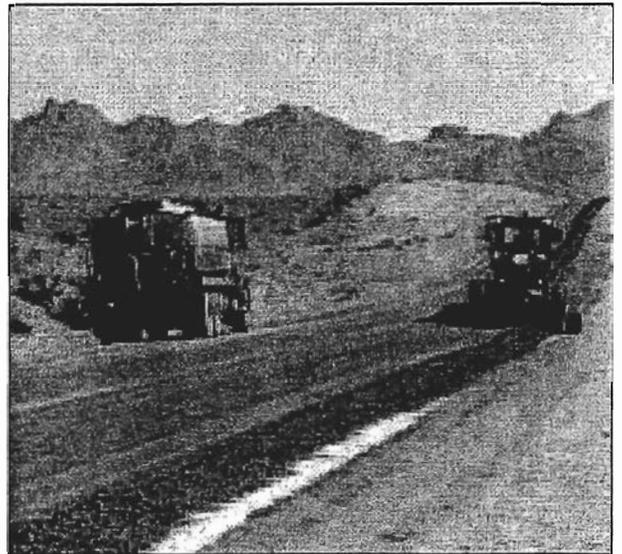
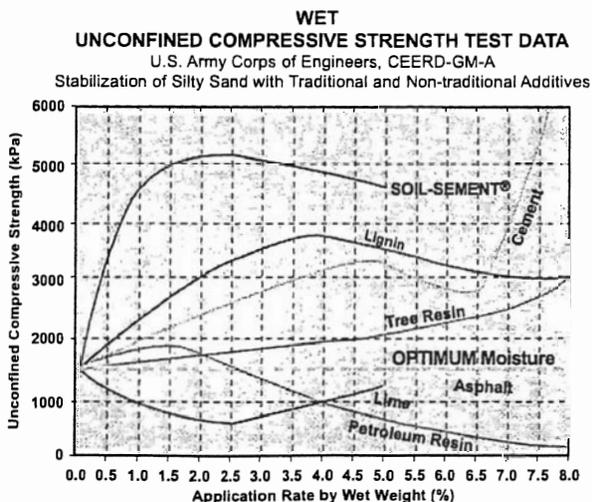
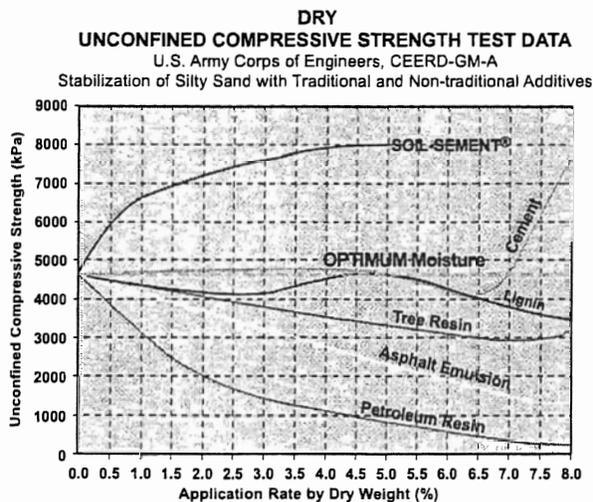
US ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER Determines Potential Engineering Benefits of Soil-Sement®

In a comprehensive study just released by the U.S. Army Research and Development Center of 12 non-traditional stabilizers and three traditional types, **SOIL-SEMENT®** (one of the non-traditional types) showed its potential to increase the unconfined compressive (UC) strength of silty sand (SM) material under both "wet" and dry conditions.

The results verified that **SOIL-SEMENT®** polymer emulsion SIGNIFICANTLY improved the UC strength of the SM material (58 percent in dry test conditions and 208 percent in wet conditions). Except for cement and polymers, other traditional and non-traditional stabilizers provided no significant potential.

SOIL-SEMENT® SIGNIFICANTLY improved the unconfined compressive strength of the SM material...

58%
in dry test conditions,
and
208%
in wet conditions!



Graphs by Midwest Industrial Supply, Inc. using data from the U.S. Army Engineer Research and Development Center's study of Nontraditional Stabilization of Silty-Sand.

*"Nontraditional Stabilization of Silty-Sand,"
Engineering Research and Development Center.*

Dust Control Implementation Project

By URS Corporation (formerly Dames & Moore)
for the
Arizona Department of Emergency & Military Affairs,
Arizona Army National Guard, Florence Military Reservation

• 6 Month • 12 Month • Post Implementation

6 MONTH CONCLUSIONS

- The opacity of the dust plumes generated by the convoys on the Soil-Sement® treated areas were lower than 20% as required at the property line.

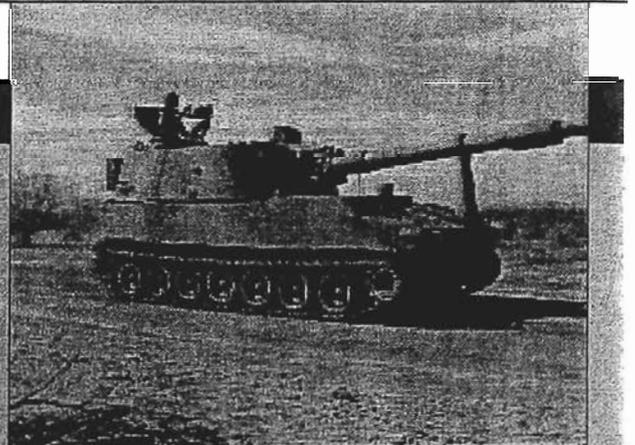
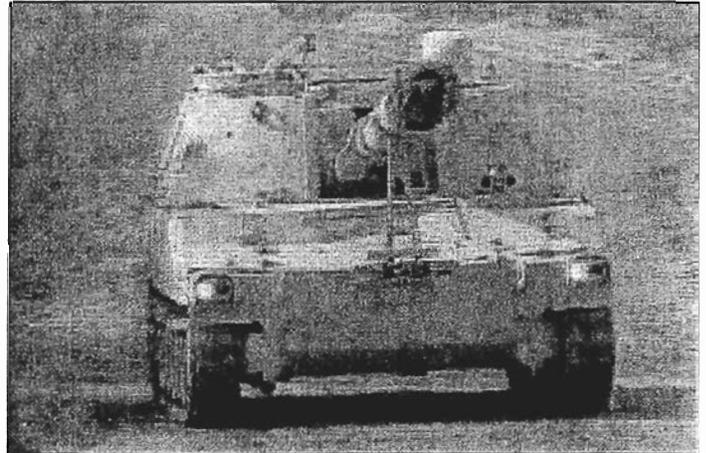
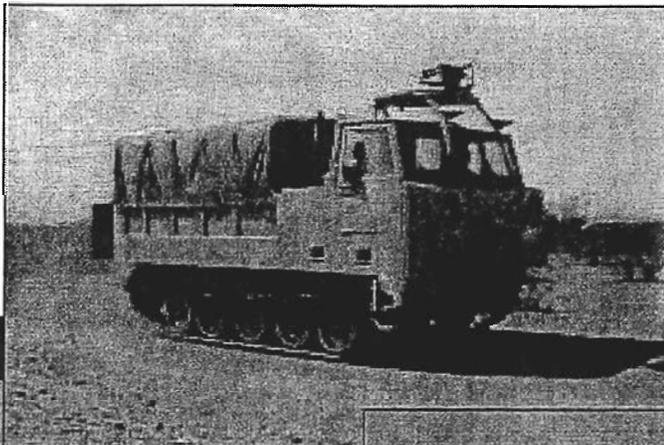
12 MONTH CONCLUSIONS

- The opacity of the dust plumes generated by the convoys on the Soil-Sement® treated areas were lower than 20% as required at the property line.

POST-IMPLEMENTATION EVALUATION

The opacity of the dust plumes generated by the convoys on the Soil-Sement® treated areas were lower than 20% as required at the property line.

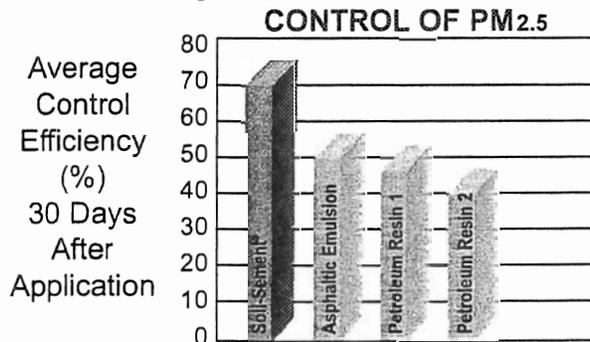
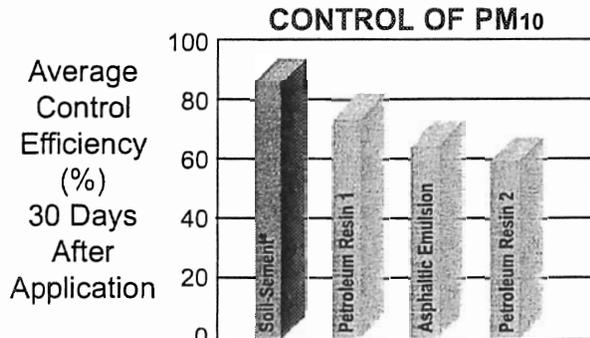
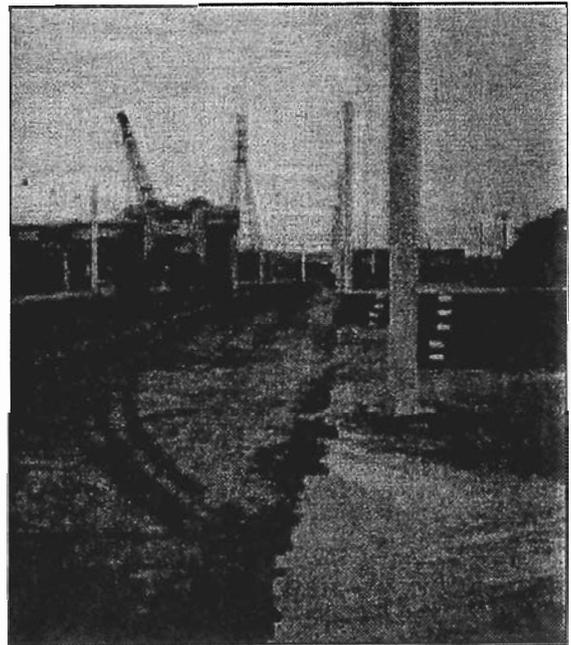
- The Soil-Sement® palliative appeared to exhibit a tolerance to the type of vehicular traffic of the Main Supply Route (generally heavy vehicles with both rubber tires and tracks). At the time of the evaluation (after 1 year), the Soil-Sement® appeared to show some signs of wear but maintained its general integrity at the surface after receiving some heavy, abrasive traffic, particularly from tracked vehicles. The spalling observed appears to be predominantly from the aggregate being crushed or "popped" out of the surface, with only minor flaking of the Soil-Sement®-treated crossing.

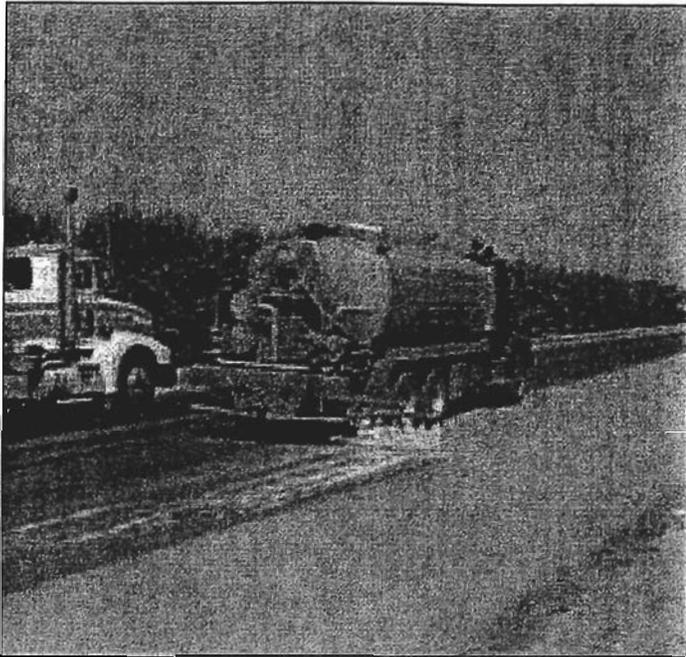


"Implement Fugitive Dust Control Measures," URS (formerly Dames and Moore), URS Job No.: 29679006.

USEPA PM₁₀ and PM_{2.5} Control Efficiency Testing

In the most comprehensive study in the iron and steel industry performed for the United States Environmental Protection Agency, Soil-Sement[®] was compared to petroleum resins and asphaltic emulsions in controlled PM₁₀ and PM_{2.5} testing involving unpaved roadways in the iron and steel industry. While all of the products performed at a high level of effectiveness immediately following each application, the true test came when the results were once again compared 30 days later. Soil-Sement[®] maintained an effectiveness rating within 10% of the initial application, while the effectiveness of asphaltic emulsions and petroleum resins dropped significantly.





SOIL-SEMENT® DEMONSTRATION Kern County Road Shoulders

This report provided the initial results of a demonstration using Soil-Sement® as an alternative to paving for fugitive dust control associated with unpaved road shoulders.

The USEPA mandated that the San Joaquin Valley Air Pollution Control District commit to the rapid adoption and implementation of Best Available Control Measures (BACMs) in order to control particulate matter. One such BACM is the paving of unpaved road shoulders. Kern County is but one of eight counties in the Air District and the total miles of road potentially subject to the shoulder-paving requirement could exceed several thousand miles at a cost in excess of \$100,000,000!

Road Shoulder Paving Costs Estimate Valley Wide

Year	Miles Paved	Cost/mi	Cost
1	200	\$70,000	\$14,000,000
2	200	\$70,000	\$14,000,000
3	200	\$70,000	\$14,000,000
4	200	\$70,000	\$14,000,000
5	200	\$70,000	\$14,000,000
6	200	\$70,000	\$14,000,000
7	200	\$70,000	\$14,000,000
8	200	\$70,000	\$14,000,000
9	200	\$70,000	\$14,000,000
10	200	\$70,000	\$14,000,000
TOTAL	2,000		\$140,000,000

**Soil-Sement® Treatment Costs
on Unpaved Shoulders Valley Wide**

Year	Miles Paved	Cost/mi	Cost
1	1,800	\$4,224	\$7,603,200
2	300	\$2,281	\$684,288
3	1,400	\$4,224	\$5,913,600
4	233	\$2,281	\$532,224
5	1,000	\$4,224	\$4,224,000
6	167	\$2,281	\$380,160
7	600	\$4,224	\$2,534,400
8	100	\$2,281	\$228,096
9	200	\$4,224	\$844,800
10	33	\$2,281	\$76,032
TOTAL	5,833		\$23,020,800

**For approximately \$116,000,000 LESS
you can treat almost 3 times as many miles by
using Soil-Sement® as opposed to paving!**

Midwest Industrial Supply, Inc. proposed a demonstration to the Air Pollution Control District to evaluate the cost and feasibility of using Soil-Sement® as an interim and low cost solution to the road shoulder paving requirement. During the demonstration, Midwest Industrial Supply, Inc. stressed that the Soil-Sement® treated shoulders are expected to remain dust-free for 2 years!

Six weeks after application of Soil-Sement®, Kern County Roads Staff returned to the demonstration site and found the following results:

- The Soil-Sement® topical application provided a hard stabilized surface and effectively eliminated dust on the road shoulders.
- Soil-Sement® provides a durable surface.

One of the conclusions from this study is that shoulder maintenance with Soil-Sement® would keep shoulders in better condition, reducing the cost of shoulder paving.

SOIL-SEMENT® DEMONSTRATION Fresno County Road Shoulder Stabilization

The San Joaquin Valley has one of the worst air quality problems in the nation and is one of a few areas of the country classified by the USEPA as a serious non-attainment area for the federal particulate matter air quality standard (PM₁₀). In response to the severity and longevity of the Valley's PM₁₀ air quality problem, the USEPA found the Valley's PM₁₀ non-attainment area plan deficient and required the San Joaquin Valley Air Pollution Control District to revise its plan and commit to the rapid development and implementation of Best Available Control Measures (BACMs).

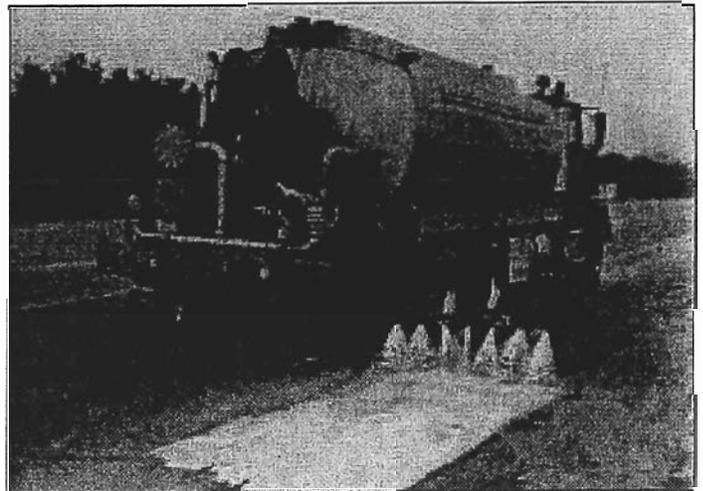
For this demonstration the Fresno County Department of Public Works wanted to compare Soil-Sement® to slow cure asphalt, SC-250. Prominent differences between the two products include:

- Soil-Sement® has no detectable emissions of VOC whereas SC-250 emits 400 lbs/mile of treated shoulder.
- Soil-Sement® is non-toxic whereas SC-250 has potential toxic and water quality implications.
- Soil-Sement® costs less than SC-250.

At slightly over 2 months after application, department personnel reported a number of complaints about SC-250 track-out, and had to return to the site and apply a layer of sand to portions of the SC-250 treated shoulders.

Two months after application, the Department Road Staff found the Soil-Sement® application has provided a durable and stabilized road surface and has effectively eliminated fugitive dust!

"Midwest Industrial Supply, Inc. is the industry-leading manufacturer of fugitive dust palliatives that has gone through the effort and expense of having air regulatory agencies verify the effectiveness of its products. Soil-Sement® was evaluated by the California Air Resources Board and a host of other agencies and found to be a highly effective and durable dust palliative for unpaved road surfaces."



Soil-Sement® being applied.



Soil-Sement® 2 months after application.

Soil-Sement[®]

Desert Research Institute

efficiency exceeds

80%

over one year!

Experiments conducted by the

Desert Research Institute

determine the efficiencies of dust suppressant materials on unpaved public roads and unpaved shoulders along paved roads.

Experiments were conducted from July to August in order to determine the PM₁₀ control efficiencies of different dust suppressant materials on unpaved public roads and unpaved shoulders along paved roads.

In an initial survey, more than 60 specific suppressant products were identified. These fell into categories of:

- 1) salts
- 2) asphalt or petroleum emulsions
- 3) emulsions of other materials
- 4) polymers
- 5) surfactants
- 6) bitumens
- 7) adhesives
- 8) solid materials, fibers and mulches
- 9) hydroseed vegetation
- 10) miscellaneous products

Conclusions were drawn with respect to:

- 1) efficiency and durability of each suppressant
- 2) fugitive dust emission rates
- 3) zones of influence of fugitive dust emissions

For the unpaved roads, PM₁₀ was measured upwind and downwind of each test section. For the unpaved shoulder study, in addition to upwind and downwind measurements, instantaneous measurements from light scattering and turbulence sensors were made. The efficiencies of Soil-Sement[®] exceeded 80% on average, during the final measurement period, 12 months after application. Of all of the other commercial products tested, the maximum efficiencies after a 12-month period amounted to no more than 49%.

PM₁₀ Suppression Efficiencies for each Test During Three Intensive Monitoring Periods

DATE	VEHICLE SPEED (km/hr)	SUPPRESSION EFFICIENCY (%)			
		BS ^a	PEP ^b	Soil-Sement ^c	NHCO ^d
7-22-95	40	56	100	100	N/A
7-24-95	40	20	100	83	
7-26-95	40	37	99	93	
(Average)		38	100	92	
(Std. Dev.)		18	1	8	
7-23-95	55	50	100	94	
7-25-95	55	47	99	100	
7-27-95 ^d	55	-13	94	97	
(Average)		28	98	97	
(Std. Dev.)		36	3	3	
10-17-95	40	3	73	97	N/A
10-20-95	40	-8	67	91	
10-22-95	40	-46	61	94	
(Average)		-17	67	94	
(Std. Dev.)		26	6	3	
10-18-95	55	-10	73	100	
10-21-95	55	37	84	100	
(Average)		13	79	100	
(Std. Dev.)		34	8	0	
6-13-96	40	18	65	90	83
6-14-96	40	-32	55	87	98
6-15-96	40	-20	42	86	89
(Average)		-11	54	88	90
(Std. Dev.)		26	11	2	7
6-19-96	55	-81	43	89	91
6-17-96	55	-75	37	77	97
6-18-96	55	-35	51	84	96
(Average)		-64	44	83	95
(Std. Dev.)		25	7	6	3

^aBiocatalyst stabilizer (EMC², Soil Stabilization Products).

^bPetroleum emulsion with polymer (CoherexPM, WITCO).

^cNon-hazardous crude oil mixture (WSPA).

^dNegative values denote emissions greater than the untreated section.

Soil-Sement® and NPDES monitoring.

Beginning in 1975, Midwest Industrial Supply, Inc. has been proactively solving environmental problems. When used per the manufacturer's guidelines, Soil-Sement® will help you meet your NPDES permitting requirements. Call us today!

CONTRIBUTIONS TO PHASE I COMPLIANCE BY SOIL-SEMENT®:

- Soil-Sement® will not affect pH levels. As applied, Soil-Sement® is neutral pH.
- Soil-Sement® does not contain oil or grease.
- Soil-Sement® does not contain volatile organic compounds or semi-volatile organic compounds above the regulatory levels.
- Soil-Sement®, when applied correctly and cured, will not increase BOD or COD.
- Soil-Sement® will not increase TSS (Total Suspended Solids) if applied properly. In fact, once dried and cured, Soil-Sement® will decrease the TSS.

CONTRIBUTIONS TO PHASE II COMPLIANCE BY SOIL-SEMENT®:

Technical data is available showing:

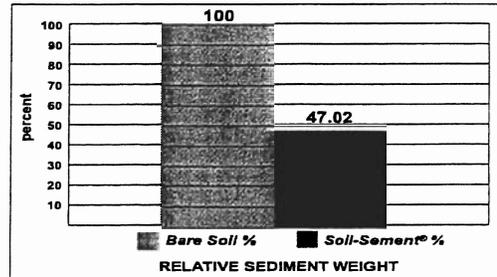
- The effectiveness of Soil-Sement® in binding naturally occurring pollutants such as metals and arsenic to the soil, making them unable to enter into stormwater runoff.
- That Soil-Sement® will prevent dust from becoming airborne and settling as sediment in stormwater runoff.

DEPARTMENTS OF TRANSPORTATION NOW RECOMMEND:

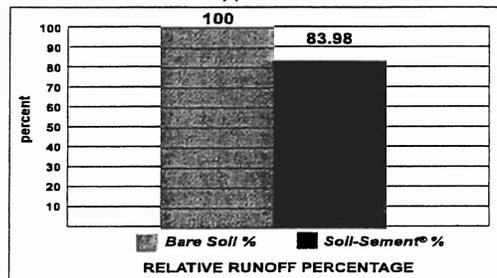
- That methods of erosion and sediment control should be considered "pay items" in the bids and specifications.
- That new road construction is usually funded approximately 80% by the federal government, and on-going maintenance is 100% funded by each state, therefore it is more economical to plan the erosion and sediment control into the initial budget.
- Part 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act requires that soil and sedimentation control be considered throughout the development and delivery phases of a project, including planning, design, construction and maintenance.

Runoff Characteristics & Sediment Retention Under Simulated Rainfall Conditions

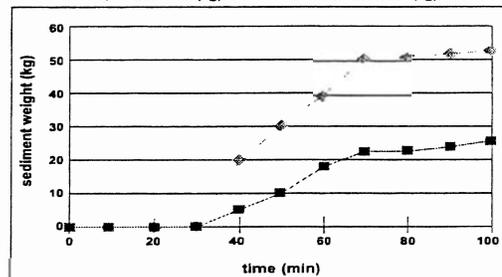
Relative Sediment Weights Comparison for a 10-year Storm Event on a Soil-Sement® Application vs. Bare Soil



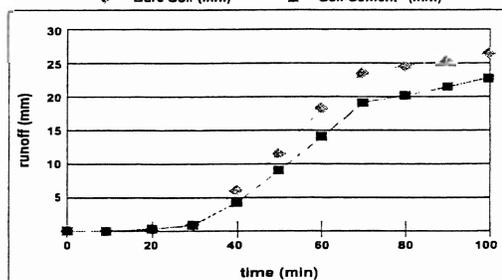
Relative Runoff Percentage Comparison for a 10-year Storm Event on a Soil-Sement® Application vs. Bare Soil



Cumulative Sediment Delivery for Soil-Sement® vs. Bare Soil Over Time

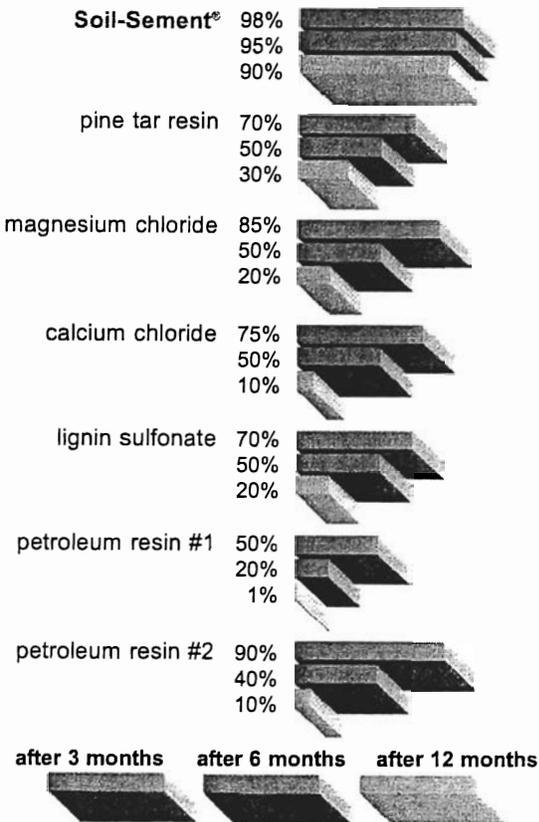


Cumulative Runoff for Soil-Sement® vs. Bare Soil Over Time



"Runoff Characteristics and Sediment Retention Under Simulated Rainfall Conditions," San Diego State University, SDASU/SERL PROJECT REFERENCE NO.: 2001-01-MIS.

A county located in the high Mojave Desert region in California initiated a PM₁₀ Dust Control Project to evaluate the effectiveness of various dust suppressants for unpaved roadways. The evaluation was conducted under the direction of the Kern County Air Pollution Control District and coordinated through the County Waste Management Engineering Department. The products tested included a pine tar resin, magnesium chloride, calcium chloride, lignin sulfonate, petroleum resins and Soil-Sement®. Test sites were examined at 3 months, 6 months, and 12 months following application. The study found Soil-Sement® to be the product which continued to perform at the highest level of effectiveness as both a dust and erosion control agent.



- Of the products tested, **only Soil-Sement®** was successful in preventing roadbed deterioration (potholes, washboarding, rutting, and areas breaking up).
- Of the products tested, **only the road segment using Soil-Sement®** did not require regrading after 6 months and prior to the maintenance application.
- **Only Soil-Sement®** prevented washing and excessive deterioration of the road surface following bad weather.
- **Only Soil-Sement** retained any practical ability for controlling dust after the 12-month period.

"PROJECT DUST (Dusty Unpaved Surfaces Treatment),"
Kern County Air Pollution Control District.

Why Soil-Sement® Beats the Alternatives for Fugitive Dust Suppression:

As you know, there are many alternative methods of fugitive dust control. Below are just a few...

WATER

Water works well, but requires constant attention. (For example, Per Rule 403.1 of the South Coast AQMD - water must be applied at least **THREE** times a day when there is evidence of wind-driven fugitive dust.) In addition, water is most commonly applied by diesel-powered water trucks which themselves emit direct and toxic PM and NOX.

WASHED GRAVEL

A uniform layer of washed gravel, while controlling fugitive dust temporarily, presents numerous other problems. Traction is inadequate and tire damage can occur. Over time, dust emissions increase rather than decrease due to steady traffic breaking down the gravel. Also, gravel is fairly expensive and subject to water erosion.

PAVING

Paving, while the best long-term solution to fugitive dust control, is extremely expensive. In many applications, paving is impractical...the need may be temporary or the cost too extravagant.

Soil-Sement® is the only feasible, safe alternative to the above-mentioned methods that has been verified by numerous environmental agencies, including CalCert, California Air Resources Board and Environment Canada.

Why settle for more expensive, time-consuming methods when one application of environmentally safe Soil-Sement® lasts up to six months! Midwest Industrial Supply, Inc. has the tested, certified choice to help you comply with your water and air quality regulations...the only choice...

Soil-Sement®

*Soil-Sement®'s Uncompromising
Reliability and Repeatability
Make it the Only Choice for Your
Fugitive Dust Suppression
Compliance Requirements!*

Best Management Practices (BMPs)

Mandatory storm water permits and management plans are being incorporated into the framework of urbanized areas, making it imperative to address water quality in all aspects of development. Professionals, contractors and end users are struggling to develop a systematic and logical method for selecting the appropriate Best Management Practice (BMP) to be integrated into the various construction phases for their projects.

Best Management Practice is a technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of storm water runoff in the most cost-effective manner. BMPs are designed to protect and prevent new pollution.

With Midwest Industrial Supply, Inc.'s understanding of the types of structural BMPs and how they interact with one another, we can provide guidance in obtaining the right mix for a specific site. To ensure the maximum benefit is achieved, we evaluate your site so the most effective BMP for the preconstruction, active construction and post-construction phases is utilized.

The Preconstruction phase requires a careful assessment of the specific site and a development of a clear understanding of what stormwater controls will be required by relevant stormwater regulations, local ordinances and site plan approval processes. The Active Construction Phase deals with sediment containment systems and vegetative techniques. Their roles are to create conditions for sedimentation, allowing soil particles that are held in suspension to settle. Post-construction BMPs are techniques that can be used to address flow quantity control of, and treatment for, water quality through pollution removal in wet-weather runoff.

SOIL-SEMENT® IS THE ONLY CHOICE USED FOR ALL THREE PHASES OF CONSTRUCTION:

PRECONSTRUCTION:	ACTIVE CONSTRUCTION:	POST-CONSTRUCTION:
<ul style="list-style-type: none">• Soil-Sement®• Silt Fences• Continuous Berms• Wattles	<ul style="list-style-type: none">• Soil-Sement®• Silt Fences• Continuous Berms• Wattles	<ul style="list-style-type: none">• Soil-Sement®

Soil-Sement® will keep your operation running smoothly and in compliance with stormwater regulations during all phases of construction!

Best Available Control Technologies (BACTs)

Best Available Control Technology is an emission limitation that will attain the lowest achievable emission rate for the source to which it is applied.

Best Available Control Methods (BACM) and Reasonably Available Control Methods (RACM) are also important techniques and procedures to limit emission and/or airborne transport of fugitive dust from a site with satisfactory results accomplished for temporary and/or extended suppression of PM₁₀ emissions.

Soil-Sement® can be used to achieve Best Available Control Technology. Soil-Sement® is also considered to be both Best Available Control Method (BACM) and Reasonably Available Control Method (RACM).

Fugitive Dust Emissions Control Plan

Regulatory agencies require operations to submit Fugitive Dust Emissions Control Plans so that the amount of particulate matter carried in the surrounding air as a result of man-made fugitive dust sources meets opacity, wind conditions and control efficiency requirements.

Midwest has Fugitive Dust Emissions Control Plans that are detailed to demonstrate the applicable Best Available Control Measures or Reasonably Available Control Measures that will be utilized and/or installed during all periods of active operations.

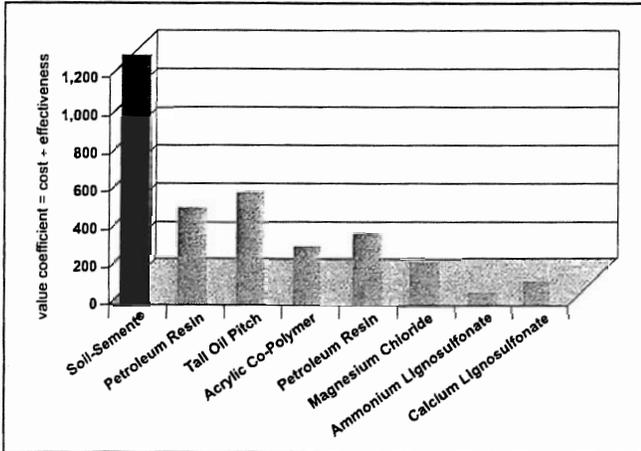
Our plans meet these three conditions:

- All sources of fugitive dust emissions are identified.
- For each source identified, at least one of the required control measures is implemented, or an acceptable justification statement is satisfied.
- If visible dust emissions are crossing the property line(s), then high wind measures are specified for immediate implementation.

We provide the following services so that your organization will avoid violations:

- Maintain records to document the dates of active operations, all applicable fugitive dust source types and the action taken.
- Retain such records for a period of at least 6 months.
- Provide trained on-site Dust Supervisors, as required by the South Coast Air Quality Management District
- Make such records available to the Executive Officer upon request.

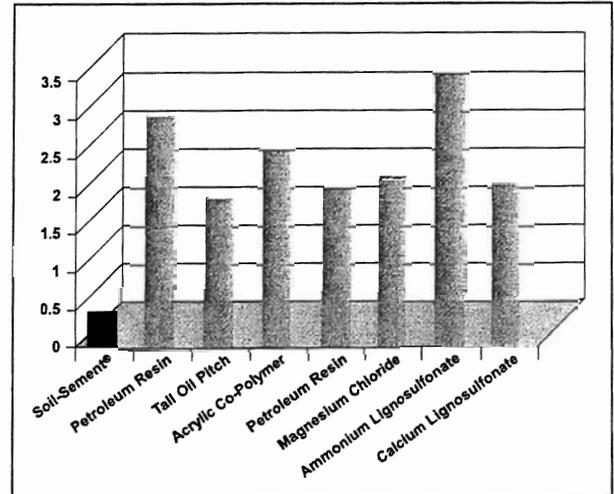
SOIL-SEMENT® VALUE COMPARISON vs. other suppressant types based on performance



VALUE:

■ = GREATEST VALUE

Value coefficient arrived at by dividing weight of dust collected into product cost.



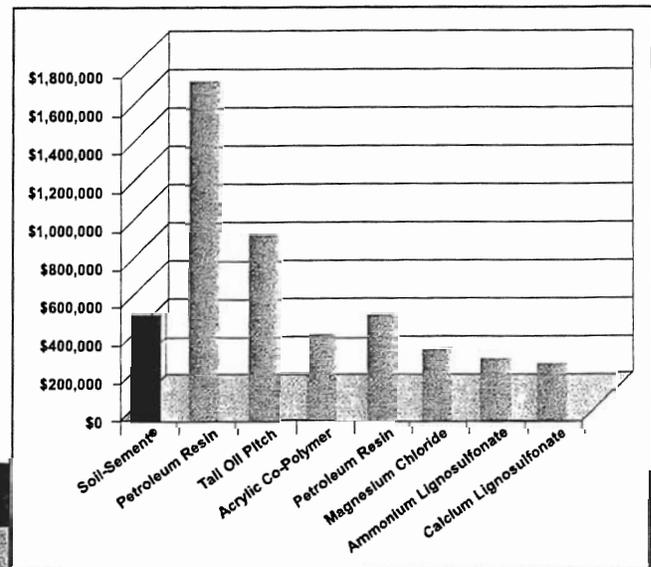
PRODUCT PERFORMANCE:

■ = LEAST DUST

Weight of the dust collected at the site over a 27-week period

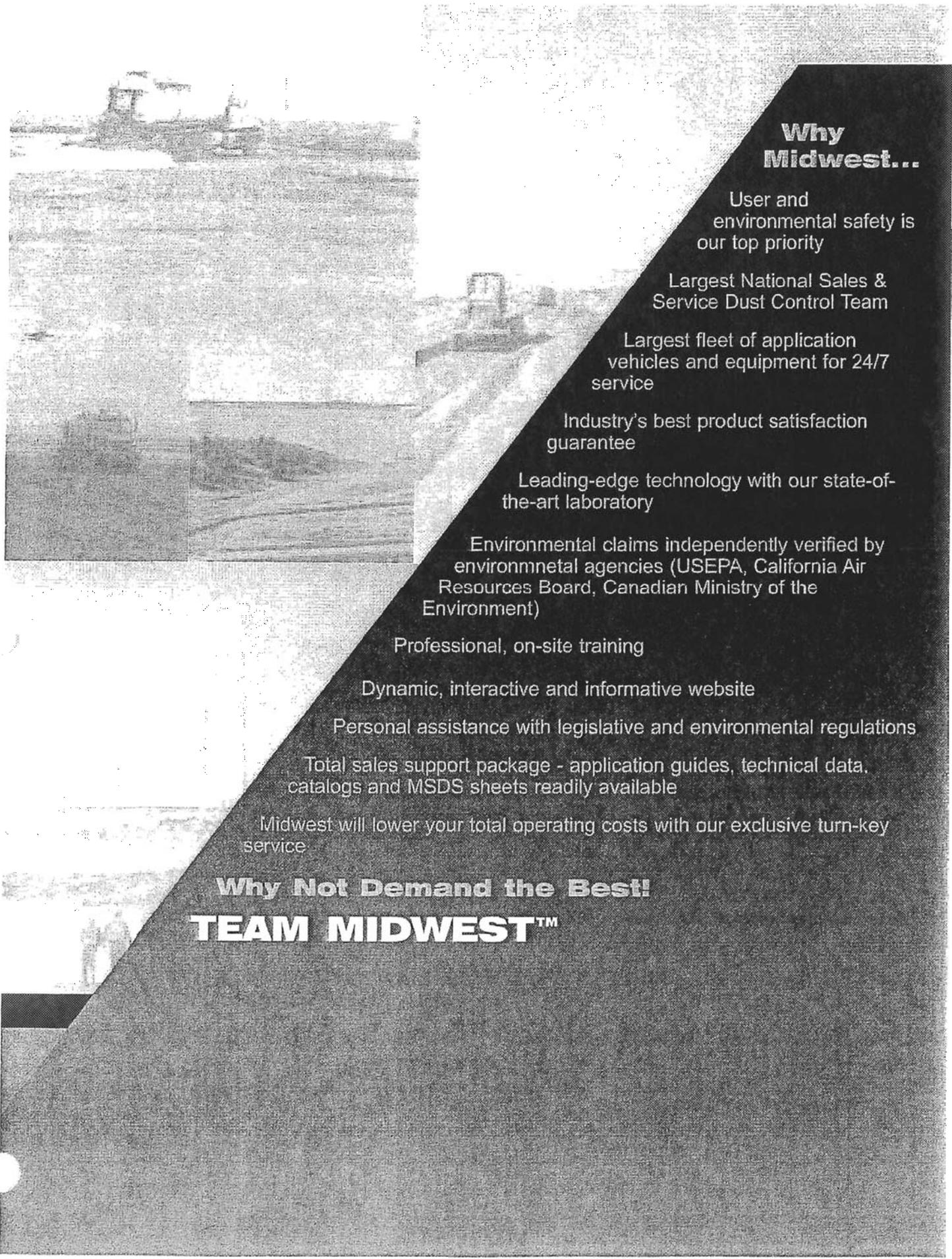
PROJECTED ANNUAL PRODUCT COST:

Based on Manufacturer's
Recommendation



Whether four times more expensive or one-fourth less expensive, no other chemical dust suppressant in this test was close to the product performance of Soil-Sement®...

...and Soil-Sement®
provided from
**200% to
1,200%**
greater value than
other products
in the test!



Why Midwest...

User and
environmental safety is
our top priority

Largest National Sales &
Service Dust Control Team

Largest fleet of application
vehicles and equipment for 24/7
service

Industry's best product satisfaction
guarantee

Leading-edge technology with our state-of-
the-art laboratory

Environmental claims independently verified by
environmental agencies (USEPA, California Air
Resources Board, Canadian Ministry of the
Environment)

Professional, on-site training

Dynamic, interactive and informative website

Personal assistance with legislative and environmental regulations

Total sales support package - application guides, technical data,
catalogs and MSDS sheets readily available

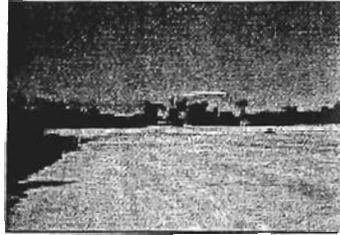
Midwest will lower your total operating costs with our exclusive turn-key
service

Why Not Demand the Best!
TEAM MIDWEST™

THE MANY USES OF SOIL-SEMENT®

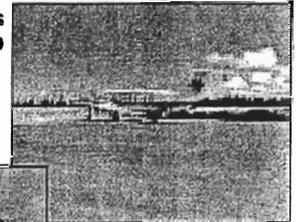


**Residual
Waste
Landfills**



Construction

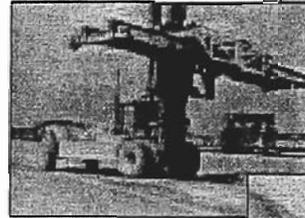
**Airports
FOD**



**Pond
Slopes**

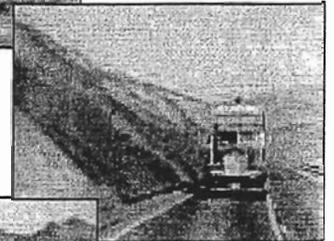


**Naturally
Occurring
Asbestos**



Intermodal

Hydroseeding



**Unpaved
Shoulders**



**Subgrade
Stabilization**



**Coal
Piles**



Quarries



**Public
Works**



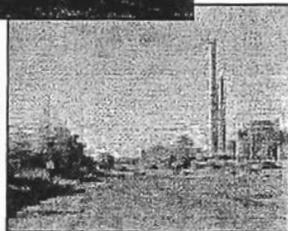
**Military
Installations**



Steel Mills



Slopes



Power Plants



Wineries

COMPLETE REPORTS AND TECHNICAL DATA AVAILABLE UPON REQUEST



For more information or to receive a complete list of other Midwest products, contact:
MIDWEST INDUSTRIAL SUPPLY, INC.

P.O. BOX 8431 • CANTON, OH 44711 • USA • 330-456-3121 • FAX: 330-456-3247

TOLL-FREE: 1-800-321-0699

E-MAIL: custserv@midwestind.com • www.midwestind.com • www.soilsement.com

VISA, Mastercard and American Express accepted



SOILWORKS, LLC
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www.Soiltac.com Info@Soiltac.com

SOILTAC®
 Soil Stabilizer &
 Dust Control Agent

MATERIAL SAFETY DATA SHEET

SECTION 1 - MATERIAL IDENTIFICATION

PRODUCT NAME SOILTAC*
MANUFACTURER *SOILTAC is a registered trademark of Soilworks, LLC.
 Soilworks, LLC.
 681 North Monterey Street, Suite 101
 Gilbert, Arizona 85233-8318 USA
www.soilworks.com
TELEPHONE NUMBER 800-545-5420
ONLINE INFORMATION www.Soiltac.com
EMERGENCY TELEPHONE NUMBERS 800-545-5420 (National & International)
REVISION DATE September 2005

EMERGENCY OVERVIEW

PHYSICAL FORM Mobile liquid
COLOR White (transparent once cured)
ODOR Mild
HAZARDS There are no known health hazards.
EXTINGUISHING MEDIA The product will only burn after the water it contains is driven off.
C.A.S. CHEMICAL NAME Mixture
SYNONYMS Soil stabilizer, soil stabilization agent, soil solidifier, soil amendment, soil additive, soil crusting agent, dust control agent, dust inhibitor, dust palliative, dust suppressant, dust retardant
CHEMICAL FAMILY Vinyl Acetate Copolymer Emulsion
EMPIRICAL FORMULA Mixture
INTENDED USE Soil stabilization, soil solidification, fugitive dust control, dust suppression, dust abatement, tackifier, dust abatement, PM₁₀ and PM_{2.5} air quality control and erosion control
REVISION NOTES None

SECTION 2 - INGREDIENTS

	%	CAS Number and Chemical Name
1.	50-65	Vinyl Acetate Copolymer
2.	50-35	7732-18-5 Water
3.	< 0.5	108-05-04 Vinyl Acetate Monomer

The composition is a trade secret. Contains no other components or impurities which will influence the classification of the product.

SECTION 3 - HEALTH HAZARDS

ROUTES OF EXPOSURE

Eye Contact
 Skin Contact
 Ingestion
 Inhalation

EXPOSURE STANDARDS

See Section 2 for exposure standards on ingredients. Maintain air contaminant concentrations in the workplace at the lowest feasible levels. Minor components will migrate into the container headspace. Levels in excess of the TLV's or PEL's can accumulate in non-vented container headspaces. Open drums in a well ventilated space. The principal volatile component is water. Minor volatile components are identified in Section 2 "Ingredients".

HEALTH HAZARDS

There are no known health hazards.

TARGET ORGANS

None known

SIGNS AND SYMPTOMS OF EXPOSURE (Acute effects)

There are no known signs or symptoms of exposure.

SIGNS AND SYMPTOMS OF EXPOSURE (Possible Longer Term Effects)

No known effects

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

None known





SECTION 4 - FIRST AID

EYE CONTACT

Rinse immediately with plenty of water.

SKIN CONTACT

Remove contaminated clothing and shoes. Wash affected area with soap and water.

INHALATION

Move patient to fresh air. If breathing has stopped or is labored give assisted respiration (e.g. mouth-to-mouth). Supplemental oxygen may be indicated. Seek medical advice. Prevent aspiration of vomit. Turn victim's head to the side.

INGESTION

If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE AND EXPLOSION DATA

FLASH POINT (closed cup)	No Data
UPPER EXPLOSION LIMIT (UEL)	No Data
LOWER EXPLOSION LIMIT (LEL)	No Data
AUTOIGNITION TEMPERATURE	No Data
FIRE HAZARD CLASSIFICATION (OSHA/NFPA)	Non-Combustible
EXTINGUISHING MEDIA	

The product will only burn after the water it contains is driven off. For dry polymer use water or carbon dioxide. Product does not burn. Aqueous solution is not flammable.

SPECIAL FIRE FIGHTING PROCEDURES

No special procedures required. The product, as distributed, is noncombustible.

UNUSUAL FIRE AND EXPLOSION HAZARDS

When dried polymer burns, water (H₂O), carbon dioxide (CO₂), carbon monoxide (CO) and smoke are produced.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

CONTAINMENT TECHNIQUES (Removal of ignition sources, diking etc)

Stop the leak, if possible. Ventilate the space involved.

CLEAN-UP PROCEDURES

If recovery is not feasible, admix with dry soil, sand or non-reactive absorbent and place in an appropriate chemical waste container. Transfer to containers by suction, preparatory for later disposal. Place in metal containers for recovery or disposal. Flush area with water spray. Wash contaminated property (e.g., automobiles) quickly before the material dries. For large spills, recover spilled material with a vacuum truck.

OTHER EMERGENCY ADVICE

Spilled polymer emulsion is very slippery. Use care to avoid falls. A film will form on drying. Remove saturated clothing and wash contacted skin area with soap and water. Product imparts a milky white color to contaminated waters. Foaming may result. Sewage treatment plants may not be able to remove the white color imparted to the water.

SECTION 7 - HANDLING AND STORAGE

STORAGE

Keep away from: oxidizers. Avoid freezing temperatures during storage.
 Minimize contact with atmospheric air to prevent inoculation with microorganisms.

HANDLING

Use only in well-ventilated areas. Avoid contact with eyes. Avoid breathing vapors. Avoid contact with skin. When using, do not eat, drink or smoke.

OTHER PRECAUTIONS

No special precautions required.

SECTION 8 - PERSONAL PROTECTION / EXPOSURE CONTROLS

EYE PROTECTION

Chemical safety glasses.

HAND PROTECTION

Rubber Gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period.

RESPIRATORY PROTECTION

Not required under normal use.

PROTECTIVE CLOTHING

No specific recommendation.

ENGINEERING CONTROLS

Maintain air concentrations in work spaces in accord with standards outlined in Sections 2 and 3.





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www.Soiltac.com Info@Soiltac.com

SOILTAC®
 Soil Stabilizer &
 Dust Control Agent

WORK AND HYGIENIC PRACTICES

Minor components will migrate into the container headspace. Levels in excess of the exposure limits can accumulate in non-vented container headspaces. Under normal conditions of use in a well-ventilated space, the concentration of minor components in the workplace air will not exceed the exposure limits.

SECTION 9 - TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM	Mobile liquid
COLOR	White (transparent once cured)
ODOR	Mild
pH	4.0-6.0
VAPOR PRESSURE	18.65 (mm Hg at 21°C (70°F))
VAPOR DENSITY (Air = 1)	Of water vapor
BOILING POINT	>100.00°C (>212.00°F)
SOLUBILITY IN WATER	Completely (100%) (until cured)
SPECIFIC GRAVITY (Water = 1)	1.04-1.10
MOLECULAR WEIGHT	Mixture

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY

Stable at ambient temperatures. Coagulation may occur following freezing, thawing or boiling.

CONDITIONS TO AVOID (if unstable)

Not applicable

INCOMPATIBILITY (Materials to Avoid)

Mineral acids (i.e. sulfuric, phosphoric, etc.). Alkalis (i.e. Sodium or Potassium Hydroxide etc.).

HAZARDOUS DECOMPOSITION PRODUCTS (from burning, heating, or reaction with other materials).

Depending upon formulation conditions (such as pH>7), the level of acetaldehyde may increase as a result of hydrolysis of residual vinyl acetate monomer. Carbon Monoxide in a fire. Carbon Dioxide in a fire. Aldehydes. Acetic Acid.

HAZARDOUS POLYMERIZATION

Will not occur

CONDITIONS TO AVOID (if polymerization may occur)

Not applicable

SECTION 11 - TOXICOLOGICAL PROPERTIES

ACUTE ORAL TOXICITY

No Data

ACUTE DERMAL TOXICITY

No Data

ACUTE INHALATION TOXICITY

No Data

Components: Vinyl Acetate Monomer LC50 (1 h): 5,656 ppm Species: Rat

OTHER ACUTE EFFECTS

No Data

CHRONIC/SUBCHRONIC DATA

This product contains small amounts of vinyl acetate monomer. ACGIH evaluated vinyl acetate (1993) as an A3 Animal Carcinogen: Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes of exposure. The International Agency for Research on Cancer (IARC) published a monograph on vinyl acetate (1995). In this monograph IARC indicates "there is inadequate evidence in humans for carcinogenicity of vinyl acetate. There is limited evidence in experimental animals for carcinogenicity of vinyl acetate." Normally, this lack of conclusive evidence would place a substance in the IARC Category 3 classification (Not classified as a human carcinogen). However, because vinyl acetate is metabolized to acetaldehyde, which has an IARC 2 B (Possibly carcinogenic to humans) classification, it also has been listed under Category 2B.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY

Common Name	Species	Test	Result	Concentration
Green Algae	Raphidocelus Subcapitata	96-hr chronic LC50	>1,000	Undiluted
Fathead Minnow	Pimephales Promelas	96-hr acute LC50	>1,208	Undiluted
Rainbow Trout	Oncorhynchus Mykiss	96-hr acute LC50	>1,000	Undiluted

ENVIRONMENTAL FATE

No Data

ADDITIONAL INFORMATION

No Data





SOILWORKS, LLC
 881 N. Monterey St., #101
 Gilbert, Arizona 85233
 Phone: (800) 545-5420 Fax: (480) 545-5456
 www.Soiltac.com Info@Soiltac.com

SOILTAC®
 Soil Stabilizer &
 Dust Control Agent

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Comply with all Federal, State and Local Regulations. For small quantities (less than 100 gallons): Disposal to municipal or industrial wastewater treatment plants is normally acceptable. Obtain approval from these authorities before disposal. The product does impart a white, milky color to water, which may not be removed or sufficiently diluted by the treatment facility. The product may also cause foaming when agitated. The product can be chemically or biologically degraded. For large quantities: Disposal through licensed waste disposal facilities is suggested. The product can be incinerated, though chemical or biological treatment is sufficient. Chemical precipitation/coagulation can be used to facilitate removal of solids (consult manufacturer for detailed procedure). NOTE: As supplied or diluted, product material (foam included), when splashed on automobiles or other personal property, is difficult to remove if allowed to dry.

SECTION 14 - TRANSPORT INFORMATION

DOT NON-BULK SHIPPING NAME	Refer to Bill of Lading - Not DOT Regulated // Keep From Freezing // Not dangerous goods
DOT BULK SHIPPING NAME	Refer to Bill of Lading.
IMO SHIPPING DATA	Refer to Bill of Lading.
ICAO/IATA SHIPPING DATA	Refer to Bill of Lading - Not IATA Regulated // Keep From Freezing // Not dangerous goods
CFR	Not Regulated // Keep From Freezing // Not dangerous goods
IMDG	Not Regulated // Keep From Freezing // Not dangerous goods
CTC	Not Regulated // Keep From Freezing // Not dangerous goods

SECTION 15 - REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)-

All components are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

TOXIC SUBSTANCE CONTROL ACT (TSCA) 12(b) COMPONENT(S)

None

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es)

None

EPA SARA Title III Section 312 (40CFR370) hazard class

None

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are

Vinyl Acetate Monomer

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

WARNING! This product contains a chemical known in the State of California to cause cancer. Acetaldehyde

WHMIS HAZARD CLASSIFICATION

None

WHMIS INGREDIENT DISCLOSURE LIST

None

WHMIS SYMBOLS

None

EINECS / ELINCS MASTER INVENTORY (EU)

Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer

DSL (Canada)

Included on inventory

AICS (Australia)

Included on inventory

ENCS (Japan)

Included on inventory

ECL (South Korea)

Included on inventory

SEPA (China)

Included on inventory

SECTION 16 – OTHER INFORMATION

HMIS Rating

Health	: 1
Flammability	: 0
Physical Hazard	: 0





1-800-545-5420

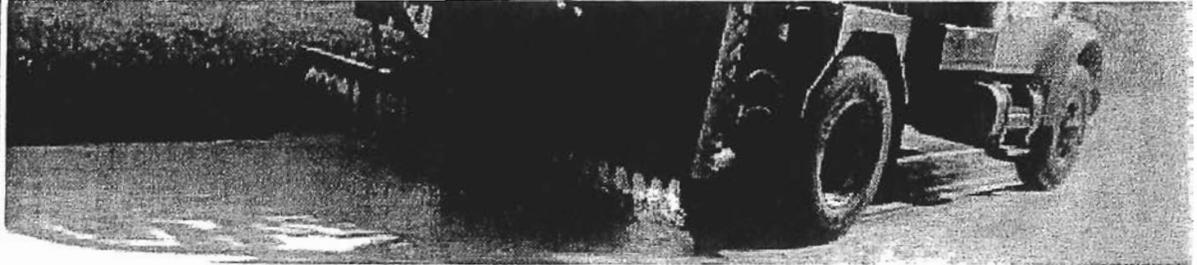
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Dust Control - Soil Stabilization - Erosion Control

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Home Page



Welcome to Soiltac.com

Your source for Soil Stabilization, Dust Control and much more.

Soiltac™ is a cost-effective and innovative product that is specifically engineered for today's challenging soil stabilization and dust control needs.

This revolutionary product is a copolymer emulsion that is environmentally safe and biodegradable. Moreover, Soiltac is designed to be extremely durable and resistant to water, sun, alkaline and daily use.

Soiltac is the industry standard as a result of its high quality, low price, top performance, simplicity and ease of application.

Soiltac was recently evaluated by the Army Research and Development Center against the industry's top performing soil stabilizers and dust control agents. As a result, the Department of Defense awarded Soilworks LLC a contract to supply **Operation Iraqi Freedom** with Soiltac.

From remote military runways built from sand to simple backyard trails, Soiltac is there actively solving challenges throughout the world's industrial, military, commercial and residential markets.

Please enjoy our web site and thank you for visiting.



Construction Dust Control

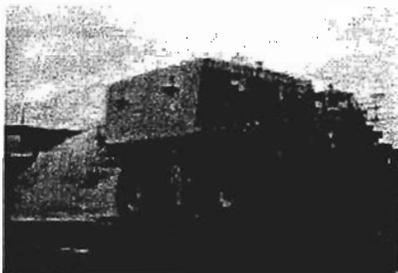


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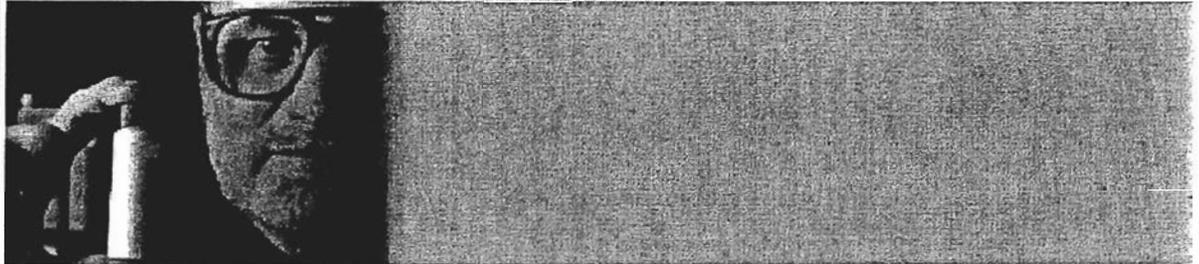
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Product Information



Product Description

Soiltac® is a polymer-based emulsion used primarily to stabilize all soils from dust and erosion.

It is specifically engineered for ease of use for large commercial projects down to smaller residential applications. It can be as simple to apply as watering the ground. Furthermore, Soiltac is designed to work its way down into the soil to maximize the penetration depth. The result is a thicker protective with a more rigid and stable base. Once cured, Soiltac becomes completely transparent, leaving the natural landscape to appear untouched. Soiltac results are based on the application rate used. Moderate applications can create a light temporary surface crust that is permeable by water and is useful for dust control needs. On the other hand, heavy applications can generate results similar to the qualities of cement. Most importantly, Soiltac is a truly biodegradable product that is completely environmentally safe to use.

Product Advantages

- PM-10 & PM-2.5 Regulation Compliant (eliminates dust particles of 2.5+ microns in size)
- Water Resistant (will not break down with water)
- Non-Dissipating (will not wash away with water once cured)
- Self Mixes with Water for Dilution (prior to applying to the soil)
- Ecologically / Environmentally Safe
- Vegetation Safe (will not harm Vegetation)
- Biodegradable
- Simple & Easy to Apply
- Long & Short Term solutions available
- Non-Regulated for Transportation
- Dyes & Pigments can be added for Color
- Non-Tracking (will not be picked up onto vehicles)

Ultraviolet Ray Resistant

Dries Odorless





(will not break down from sun)



Alkaline Soil Resistant
(will not break down in Alkaline soils)



Dries Transparent / Clear



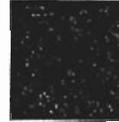
Dries Flexible



Non Volatile
Non-Flammable



Non-Hazardous
Non-Toxic
Non-Corrosive



Non-Leaching
(will not continue to seep into soil)



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