

**1. PRODUCT IDENTIFICATION:
 PRODUCT USE:**

 DARAMEND®-M
 Soil and Groundwater Bioremediation Product

MANUFACTURER:

 Adventus Americas Inc.
 2871 W. Forest Rd, Suite 2
 Freeport, IL
 61032

EMERGENCY PHONE:

 Office Hours: 815-235-3503
 After Hours: 630-309-1175

TRANSPORTATION OF DANGEROUS GOOD CLASSIFICATION:

Not Regulated

HEALTH HAZARDS:

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

CONTAINMENT HAZARD:

Any vessel that contains wet DARAMEND or DARAMEND and water must be vented due to potential pressure build up from fermentation gasses. Bulk (i.e., supersac) DARAMEND packages must also be kept dry to avoid risks of spontaneous combustion common to many bulk organic materials.

2. INGREDIENTS

CHEMICAL NAME:	CAS#	TLV (mg/m3)	LD50 (mg/Kg)	% Composition
Potassium Magnesium Sulfate	14977-37-8	NE	> 2,000 mg/kg	25 - 35
Fibrous Organic Amendment	ND	NE	NE	25 - 35
Iron	7439-89-6	5	20	25 - 35

NE – Not established, but the following particulate limits apply to all inert inorganic dusts.

Particulates Not Otherwise Classified (PNOC)	10 mg/m ³ (inhalable); 3 mg/m ³ (respirable)
Particles Not Otherwise Regulated (PNOR)	15 mg/m ³ (total dust); 5 mg/m ³ (respirable)

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

3. PHYSICAL DATA

Physical state.....	Solid	Freezing point (Deg.C).....	N/A
Odour threshold.....	N/A	Boiling point (Deg.C).....	N/A
Specific gravity.....	N/A	Vapour pressure.....	N/A
Density.....	1.03 Kg/L	Vapour density (air=1).....	N/A
pH.....	5.6	Evaporation rate.....	N/A
Solubility in water.....	N/A	Coeff. of water/oil.....	N/A
Appearance & odour.....	Tan/Brown Powder, Odourless		

4. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

- Eye:** Contact may cause mild eye irritation including stinging, watering and redness.
- Skin:** Contact may cause mild irritation including redness and a burning sensation. No harmful effects from skin absorption are expected.
- Inhalation (Breathing):** No information available.
- Ingestion (Swallowing):** Low to moderate degree of toxicity by ingestion.
- Signs and Symptoms:** Effects of overexposure may be nausea, vomiting, diarrhea, abdominal cramping, dehydration, and hypertension. Repeated overexposure o dusts may results in irritation of the respiratory tract, coughing and shortness of breath.
- Cancer:** Inadequate data available to evaluate the cancer hazard of this material.
- Target Organs:** No data available.
- Developmental:** Inadequate data available for this material.
- Other Comments:** None
- Pre-Existing Medical:** Conditions aggravated by exposure may include high blood pressure **Conditions**
(hypertension).

5. FIRST AID MEASURES

- Eye:** If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.
- Skin:** Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops and persists, seek medical attention.
- Inhalation (Breathing):** If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.
- Ingestion (Swallowing):** If swallowed, seek emergency medical attention. If victim is drowsy or unconscious and vomiting, place on left side with the head down and do not give anything by mouth. If victim is conscious and alert and ingestion occurred within the last hour, vomiting should be induced for ingestion of large amounts (more than 5 ounces or a little more than ½ cup in an adult) preferably under direction from a physician or poison center. If possible, do not leave victim unattended and observe closely for adequacy of breathing.

Note to Physicians: None known.

6. FIRE FIGHTING MEASURES

- Flammable Properties:** Non-flammable
- Flash Point:** Not applicable
- OSHA Flammability Class:** Not applicable
- LEL/UEL:** Not applicable

Autoignition Temperature: Not applicable
Unusual Fire & Explosion Hazards: No unusual fire or explosion hazards are expected.
Extinguishing Media: Use extinguishing agent suitable for type of surrounding fire.
Fire Fighting Instructions: Positive pressure, self-contained breathing apparatus is required for all fire fighting activities involving hazardous materials. Full structural fire fighting (bunker) gear is the minimum acceptable attire. The need for proximity, entry, flashover and/or special chemical protective clothing (see Section 9) needs to be determined for each incident by a competent fire fighting safety professional.

Water used for fire suppression and cooling may become contaminated. Discharge to sewer system(s) or the environment may be restricted, requiring containment and proper disposal of water.

7. ACCIDENTAL RELEASE MEASURES

Large spills can harm or kill vegetation.
Stay upwind and away from spill (dust hazard)
Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see section 9).
Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways.
Notify appropriate federal, state and local agencies as may be required (see Section 15).
Minimize dust generation.
Sweep up and package appropriately for disposal.

8. HANDLING AND STORAGE

Handling: Avoid generating excessive dust. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 9). Wash thoroughly after handling. Wash contaminated clothing or shoes. Use good personal hygiene practices.

Storage: Keep dry. Any vessel that contains wet DARAMEND or DARAMEND and water must be vented due to potential pressure build up from fermentation gasses.
Keep container(s) with dry DARAMEND tightly closed. Use and store this material in cool, dry, well ventilated areas. Store only in approved containers. Keep away from any incompatible material (see Section 11). Protect container(s) against physical damage.

9. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required.

Personal Protective Equipment (PPE)

Respiratory: A NIOSH approved air purifying respirator with a type 95 (R or P) particulate filter may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2). Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin: The use of cloth or leather work gloves is advised to prevent skin contact, possible irritation and absorption (see glove manufacturer literature for information on permeability).

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation or injury is recommended.

Other PPE: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling.

Conditions to Avoid: Mildly corrosive to metals in the presence of moisture.

Incompatible Materials: Avoid contact with hot nitric acid, may cause evolution of toxic nitrosyl chloride. Contact with other strong acids may produce irritating hydrogen chloride gas. NaCl can react with most noble metals, such as iron or steel, building materials (such as cement), bromine, or trifluoride. A potentially explosive reaction may occur if NaCl is mixed with dichloromaleic anhydride and urea. Electrolysis of mixtures containing NaCl and nitrogen compounds may form explosive nitrogen trichloride.

Corrosivity: Similar to salt. Mildly corrosive to metals in the presence of moisture.

Hazardous Decomposition Products: Combustion can yield oxides of sulfur when heated above 1000°F (538°C).

Hazardous Polymerization: Will not occur.

11. ECOLOGICAL INFORMATION

When dissolved in water, may create an elevated level of salinity that may be harmful to fresh water aquatic species and to plants that are not salt-tolerant.

12. DISPOSAL CONSIDERATIONS

Consult state and local regulations regarding the proper disposal of this material.

13. TRANSPORT INFORMATION

Not listed in the hazardous materials shipping regulations (49 CFR, Table 172.101) by the U.S Department of Transportation, or in the Transport of Dangerous Goods (TDG) Regulations of Canada.

14. PREPARATION INFORMATION

Prepared By:

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Definitions:

N/D - No Data

N/A - Not Applicable

N/E - Not Established