

MATERIAL SAFETY DATA SHEET

DEVIRINOL® 50 DF SPECIALTY/50 DF ORNAMENTAL HERBICIDE

Revision: 4

Date issued: 12/7/04

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company: United Phosphorus, Inc.
423 Riverview Plaza
Trenton, NJ 08611

Company contact: 1-800-247-1557 or www.upi-usa.com

Name used on label: DEVIRINOL® 50 DF Selective/DEVIRINOL® 50 DF Ornamental

Product use: Herbicide

FOR MEDICAL EMERGENCIES, contact the National Pesticide Information Center at 1-800-858-7378
FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300

DEVIRINOL is a Registered Trademark of United Phosphorus, Inc.

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

| Identity | CAS # | Typical % |
|--|------------|-----------|
| NAPROPAMIDE [N,N-diethyl-2-(1-naphthalenyloxy)-propionamide] | 15299-99-7 | 50 % |
| KAOLIN | 1332-58-7 | 35 % |
| Other Ingredients: | | 15 % |

Ingredients not precisely identified are proprietary or non hazardous. Values are not product specifications.

SECTION 3 HAZARDS IDENTIFICATION

Physical hazards: None

Health hazards: Irritant (skin, eye, respiratory passages). Based on Kaolin clay, inhalation (TLV).

Read the entire MSDS for a more thorough evaluation of the hazards.

SECTION 4 FIRST AID MEASURES

IF SWALLOWED:

Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES:

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor immediately for treatment advice.

IF INHALED:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

SECTION 5 FIRE FIGHTING MEASURES

Flash point: Not applicable.

Autoignition temperature: No data.

Flammable limits (STP): Not applicable.

MATERIAL SAFETY DATA SHEET

DEVIRINOL® 50 DF SPECIALTY/50 DF ORNAMENTAL HERBICIDE

Revision: 4

Date issued: 12/7/04

| | |
|-------------------------------------|--|
| EXTINGUISHING MEDIA: | Vapors may be irritating to the respiratory tract and may cause breathing difficulty and pulmonary edema. Symptoms may be delayed several hours or longer depending on exposure. As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate nonessential personnel from the fire area. Use standard firefighting techniques in extinguishing fires involving this product. Use water spray, dry chemicals, foam or carbon dioxide. High pressure water hose may spread product from broken containers increasing contamination hazards. Contaminated buildings, areas and equipment must not be used until they are properly decontaminated. |
| FIRE AND EXPLOSION HAZARDS: | This product is not considered flammable. However, under fire conditions, it may decompose to give off toxic materials. |
| PROTECTIVE EQUIPMENT: | Self-contained breathing apparatus with full facepiece and protective clothing. Impervious protective clothing such as gloves, hoods, suits and rubber boots. |
| NFPA RATING | Health 1 Fire 0 Reactivity 0 |
| Unusual fire and explosion hazards: | None known. |

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Steps to be taken in case material is released or spilled:

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation. Wear suitable protective clothing and eye protection to prevent skin and eye contact.

METHODS FOR CLEANING UP:

Do not allow the material to enter streams, sewers or other waterways. Sweep up spilled material being careful not to create dust. Shovel into the open drum. Generously cover the contaminated areas with common, household detergent (e.g. TIDE, registered trademark of Proctor & Gamble Co.). Using a stiff brush and small amounts of water, work the detergent into the remaining spilled material forming a slurry. Brush the slurry into cracks and crevices and allow to stand for 2-3 minutes. Be careful to completely avoid skin or eye contact. Do not splatter on oneself or bystanders. Spread absorbent on the slurry liquid and shovel mixture into the open drum. Rinse with small amount of water and use absorbent to collect the wash solution. Shovel into the open drum. Seal drum and dispose of contaminated material in a facility permitted for hazardous waste. Large spills should be handled according to a spill plan. Otherwise, in case of emergency call Chemtrec, day or night, 1-800-424-9300.

SECTION 7 HANDLING AND STORAGE

REQUIREMENTS FOR STORAGE ROOMS:

Containers should be stored in a cool, dry, well-ventilated area away from flammable materials and sources of heat or flame. Exercise due caution to prevent damage to or leakage from the container.

ADDITIONAL INFORMATION:

Do not store near feed, food, or within the reach of children.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

ACGIH TLV KAOLIN (Respirable Dust):

8 hour TWA 2 mg/m³

OSHA PEL KAOLIN (Total Dust):

8 hour TWA 10 mg/m³

TLV or suggested control value:

No ACGIH TLV or OSHA PEL assigned. Minimize exposure in accordance with good hygiene practice.

MATERIAL SAFETY DATA SHEET

DEVIRINOL® 50 DF SPECIALTY/50 DF ORNAMENTAL HERBICIDE

Revision: 4

Date issued: 12/7/04

ENGINEERING CONTROLS:

This product is intended for use outdoors where engineering controls are not necessary. If use conditions are different (e.g. product reformulation or repackaging), employee exposure should be minimized using traditional techniques such as enclosed system design and/or local exhaust ventilation.

EYE PROTECTION:

Eye contact with the material should be avoided through the use of chemical safety glasses, goggles or a faceshield, selected in regard to exposure potential.

BODY PROTECTION:

This product is FIFRA regulated. Refer to product labeling for end-user Personal Protection requirements. Skin contact should be prevented through the use of impervious gloves, footwear, long-sleeved clothing, and wide brimmed hat. Remove contaminated clothing and wash before rewearing. Wash separately from other laundry.

RESPIRATORY PROTECTION:

If needed, use MSHA-NIOSH approved respirator for pesticides.

Other protective equipment:

An adequate supply of clean potable water should be available to allow thorough flushing of skin and eyes in event of contact with this compound.

Special precautions or other comments:

Prevent skin and eye contact with this material. Observe TLV limitations. Avoid breathing particulates. Work clothes should be disposable or be laundered daily.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: tan granules

Melting point: No data.

Vapor Pressure: No data.

Specific gravity: No data

Solubility: partially soluble

pH-value (quant.): 7 - 9 at 100 g/l

% Volatile by volume: Negligible

SECTION 10 STABILITY AND REACTIVITY

HAZARDOUS REACTIONS (CONDITIONS TO AVOID)

Stability: Stable under normal conditions.

Incompatibility: Oxidizing agents.

Hazardous polymerization: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS

Combustion products: Carbon dioxide, carbon monoxide. Nitrogen oxides, ammonia.

SECTION 11 TOXICOLOGICAL INFORMATION

General information:

This description of toxicological properties is based on experimental results and experience with the material. Refer to the Devrinol Technical material safety data sheet for detailed toxicity information on the active ingredient.

ACUTE TOXICITY (LETHAL DOSES)

Ingestion (Oral) LD₅₀ rat:

> 5000 mg/kg. A single dose of this product is classified as "practically nontoxic" by ingestion. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion.

Acute Dermal LD₅₀ rabbit:

> 2000 mg/kg. Systemically toxic concentrations of this product will probably not be absorbed through human skin.

ACUTE TOXICITY (IRRITATION, SENSITIZATION ETC.)

Eye contact, rabbit:

Moderate irritant.

Dermal Irritation, rabbit

This material was mildly irritating in rabbit dermal irritation studies. Short contact periods with human skin are not usually associated with skin irritation; repeated and/or prolonged contact can result in skin irritation.

Inhalation

Particulates of this material will probably irritate respiratory passages.

Other effects of overexposure:

Inhalation of overwhelming amounts of kaolin dust after many years of exposure induced pneumoconiosis in workers. No other adverse clinical effects have been

MATERIAL SAFETY DATA SHEET

DEVIRINOL® 50 DF SPECIALTY/50 DF ORNAMENTAL HERBICIDE

Revision: 4

Date issued: 12/7/04

associated with exposure to this material.

SECTION 12 ECOLOGICAL INFORMATION

ADDITIONAL INFORMATION ABOUT ECOLOGY

This material is toxic to fish and wildlife.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:

Discarded product is not a hazardous waste under RCRA, 40 CFR 261.

CONTAINER DISPOSAL:

Empty container retains product residue. Observe all hazard precautions. Do not distribute or make available, furnish or reuse empty container except for storage and shipment of original product.

Remove all product residue from container and puncture or otherwise destroy empty container before disposal.

SECTION 14 TRANSPORT INFORMATION

ROAD TRANSPORT DOT

Not regulated by DOT.

SECTION 15 REGULATORY INFORMATION

HAZARDOUS INGREDIENTS

NAPROPAMIDE TECHNICAL

KAOLIN

Other regulations, restrictions and prohibitions

TSCA (Toxic Substances Control Act) Regulations, 40CFR 710:

This product is a pesticide and is exempt from TSCA regulation.

CERCLA and SARA Regulations (40 CFR 355, 370, and 372):

This product does not contain any chemicals subject to the reporting requirements of SARA Section 313.

SECTION 16 OTHER INFORMATION

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

MSDS Revision: Revision 4 replaces Version 3, 10/29/02. Reason for revision: update company and emergency contact information; update Section 4 First Aid.

We assigned NFPA and HMIS ratings to this product based on the hazards of its ingredient(s). Because the customer is most aware of the application of the product, he must ensure that the proper personal protective equipment (PPE) is provided consistent with information contained in the product MSDS. THIS INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT UNITED PHOSPHORUS, INC. TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, UNITED PHOSPHORUS, INC. EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.