



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

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"DuPont" "VELPAR" "ALFAMAX" HERBICIDE
M0000645 Revised 21-FEB-2006

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"VELPAR" is a registered trademark of DuPont.

"DuPont", "ALFAMAX" are trademarks of DuPont.

Tradenames and Synonyms

DuPont Hexazinone/Diuron
Hexazinone/Diuron
KARMEX XP
VELPAR DF

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
*DIURON	330-54-1	42.4
3-(3,4-DICHLOROPHENYL)-1,1-DIMETHYLUREA		
*HEXAZINONE	51235-04-2	35.3
[3-CYCLOHEXYL-6-(DIMETHYLAMINO)-1-METHYL-1,3,5- TRIAZINE-2,4(1H,3H)-DIONE]		
INERT INGREDIENTS		22.3

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

Emergency Overview

DANGER! CAUSES EYE DAMAGE.

Corrosive, causes irreversible eye damage. May irritate nose, throat, and skin. Avoid breathing dust or spray mist. Harmful if swallowed. Do not get in eyes or on clothing. Avoid contact with skin. Wash thoroughly with soap and water after handling.

Potential Health Effects

[Based on results from laboratory tests in animals with individual components of Velpar AlfaMax]:

Skin contact may cause skin irritation with discomfort or rash.

Eye contact may cause eye irritation with discomfort, tearing, or blurring of vision.

Ingestion of large amounts may cause alterations in red blood cell counts and/or anemia, and spleen and liver effects.

Carcinogenicity Information

The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

Material	IARC	NTP	OSHA	ACGIH
DIURON				A4

FIRST AID MEASURES

First Aid

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 for treatment advice.

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 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 a poison control center or doctor. Do not give anything by mouth to an unconscious person.

(FIRST AID MEASURES - Continued)

IF INHALED: No specific intervention is indicated as the product is not likely to be hazardous by inhalation. Consult a physician if necessary.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for medical emergencies involving this product.

Notes to Physicians

Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for medical emergencies involving this product.

FIRE FIGHTING MEASURES

Flammable Properties

Hexazinone

Autoignition : >350°C (>662°F)

Diuron

Flammable limits in Air, % by volume

LEL : 0.096 g/L
Autoignition : 440°C (824°F)

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air. May be ignited by heat or open flame. Hazardous gases/vapors produced in fire are highly toxic.

Extinguishing Media

Water, Water spray, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Use water spray. Cool tank/container with water spray. Runoff from fire control may be a pollution hazard.

(FIRE FIGHTING MEASURES - Continued)

Wear self-contained breathing apparatus. Wear full protective equipment. Runoff from fire control may be a pollution hazard. Use water spray. Cool tank/container with water spray.

If area is exposed to fire and conditions permit, let fire burn itself out. Burning chemicals may produce by-products more toxic than the original material. If product is on fire, wear self-contained breathing apparatus and full protective equipment. Use water spray. Control runoff.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Emergency Response - Chemical resistant coveralls, waterproof gloves, waterproof boots and face / eye protection. If dusting occurs use NIOSH approved respirator protection.

Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Shovel or sweep up.

Never return to container for reuse. Scoop into bags or boxes with plastic or aluminum shovel.

HANDLING AND STORAGE

Handling (Personnel)

USER SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Handling (Physical Aspects)

Avoid dust generation.

Storage

Do not contaminate water, food or feed by storage. Store product in original container only. Store in a cool, dry place.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Personal Protective Equipment

Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on the EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks.
- Protective eyewear.
- Dust mist respirator.
- Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.

Mixers and loaders must also wear:

- Apron.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls.
- Chemical-resistant gloves made of any waterproof material.
- Shoes plus socks.
- Protective eyewear.

Exposure Guidelines

Applicable Exposure Limits

DIURON

PEL (OSHA) : None Established
TLV (ACGIH) : 10 mg/m³, 8 Hr. TWA, A4
AEL * (DuPont) : 1 mg/m³, 8 & 12 Hr. TWA, total dust

HEXAZINONE

PEL (OSHA) : None Established
TLV (ACGIH) : None Established
AEL * (DuPont) : 10 mg/m³, 8 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Color : (light), Beige.
Form : Granular Solid.
Odor : (slight).
pH : 7.4
Density : 0.672 g/mL

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

Hexazinone : Incompatible with strong acids or bases.
Diuron : None reasonably foreseeable.

Decomposition

Decomposition temperature: 180-190°C (356-374°F)

Hexazinone:

Decomposition will not occur.

Diuron:

Decomposition temperature: 180-190°C (356-374°F)

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

KARMEX XP

Oral LD50: > 5,000 mg/kg in rats
Dermal LD50: > 5,000 mg/kg in rabbits
Inhalation LC50, 4 hr: > 2.02 mg/L in rats

KARMEX XP is a moderate eye irritant, and a mild skin irritant. It is not a skin sensitizer in animals.

DIURON

Repeated ingestion of Diuron led to increased hemolysis (destruction) of red blood cells and hemolytic anemia after continued exposure to high doses. Secondary effects as a result of excessive red blood cell hemolysis included enlarged spleens, pigment deposits in the spleen, changes in the bone marrow and kidney. Decreased body weights were also related to repeated ingestion of high doses of Diuron.

In addition to the effects described above, long-term effects observed in rodents after repeated ingestion of high doses also included thickening of the urinary bladder and kidney epithelium and liver toxicity. In chronic feeding studies, an increase in urinary bladder and renal pelvic tumors was observed in high-dose rats. A borderline increase in mammary tumors was observed in high-dose female mice, which is considered equivocal.

The weight of the evidence indicates that Diuron does not produce genetic damage in bacterial or mammalian cell cultures or in animals. Diuron is not considered a developmental toxicant. There was no evidence of developmental toxicity in rabbits. In rats, developmental effects occurred at doses higher than those which produced maternal toxicity. Testing in rats demonstrate no reproductive toxicity.

VELPAR DF

Oral LD50: 1310 mg/kg in rats
Dermal LD50: > 5000 mg/kg in rabbits
Inhalation 4 hour LC50: 5.2 mg/L in rats

VELPAR DF is a moderate skin irritant, is corrosive to the eye, but is not a skin sensitizer in animals.

HEXAZINONE

Repeated skin applications indicated no irritation or systemic activity.

Repeated dosing by ingestion of excessive dietary levels of Hexazinone resulted in weight loss, alterations in liver weights, alteration in blood chemical measurements, and alterations in enzyme activities. No evidence of

(TOXICOLOGICAL INFORMATION - Continued)

pathological organ damage was observed. Long-term dosing produced decreased weight gain, alterations in hematology, clinical chemistry, and blood enzyme levels, increased liver weights in some species, and pathological liver changes.

Animal data showed that chronic, excessive dietary exposure to Hexazinone produced a slight, equivocal increase in liver tumors in female mice.

Animal data show developmental effects occurred only at exposure levels producing other toxic effects in the adult animal. Animal testing indicates Hexazinone does not have reproductive effects. The weight of evidence from a battery of cell culture and laboratory animal tests indicates Hexazinone does not cause genetic toxicity.

ECOLOGICAL INFORMATION

Ecotoxicological Information

DIURON

AQUATIC TOXICITY:

96-Hour LC50 - Fathead minnows: 14.2 mg/L

96-Hour LC50 - Bluegill sunfish: 2.8 mg/L

96-Hour LC50 - Rainbow trout: 1.96 mg/L

AVIAN TOXICITY:

LD50 - Mallard duck: > 2000 mg/kg

HEXAZINONE

AQUATIC TOXICITY:

96-Hour LC50 - Fathead minnows: 274 mg/L

96-Hour LC50 - Bluegill sunfish: > 370 mg/L

96-Hour LC50 - Rainbow trout: > 320 mg/L

AVIAN TOXICITY:

LD50 - Bobwhite quail: 2258 mg/kg

DISPOSAL CONSIDERATIONS

Waste Disposal

Do not contaminate water, food, or feed by disposal.

Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of

(DISPOSAL CONSIDERATIONS - Continued)

equipment washwaters.

The active ingredient, hexazinone, in this product is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Container Disposal

For Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For Fiber Sacks: Completely empty fiber sack by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into manufacturing or application equipment. Then dispose of sack in a sanitary landfill or by incineration if allowed by State and local authorities.

For Fiber Drums with Liners: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by State and local authorities. If drum is contaminated and cannot be reused, dispose of in the same manner.

For Paper and Plastic Bags: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

TRANSPORTATION INFORMATION

Shipping Information

DOT

Proper Shipping Name : Not Regulated if < 100 lbs/pkg. (See *NOTE)

DOT/IMO

Proper Shipping Name : Not Regulated by IMO

(TRANSPORTATION INFORMATION - Continued)

*NOTE: If 100 lbs. Diuron or more per package:

Proper Shipping Name : Environmentally Hazardous
Substance, Solid, N.O.S. (Diuron)
Hazard Class : 9
UN/NA No. : UN 3077
Packaging Group : III
Reportable Quantity : 100 Pounds (Diuron)

REGULATORY INFORMATION

U.S. Federal Regulations

Superfund reportable discharge = 100 lb.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : Yes
Fire : No
Reactivity : No
Pressure : No

In the United States this product is regulated by the US Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

EPA Reg. No. 352-665

ADDITIONAL REGULATORY INFORMATION

SARA/CERCLA Reportable Quantity: Diuron (100 lbs.)

State Regulations (U.S.)

*** CALIFORNIA PROPOSITION 65 ***

THIS PRODUCT CONTAINS DIURON, A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER IN LABORATORY ANIMALS.

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating
Health : 2
Flammability : 1
Reactivity : 0

NPCA-HMIS Rating
Health : 2
Flammability : 1

(Continued)

Reactivity : 0

Personal Protection rating to be supplied by user depending
on use conditions.

The data in this Material Safety Data Sheet relates only to the
specific material designated herein and does not relate to use in
combination with any other material or in any process.

Responsibility for MSDS: DuPont Crop Protection
Address : Wilmington, DE 19898
Telephone : 1-888-638-7668

Indicates updated section.

This information is based upon technical information believed to be
reliable. It is subject to revision as additional knowledge and
experience is gained.

End of MSDS