



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

Page 1

-----  
 "DuPont" "VELPAR" "ALFAMAX" GOLD HERBICIDE  
 M0000650 Revised 21-DEC-2007  
 -----

-----  
 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 (80% Diuron)  
 VELPAR DF (75% Hexazinone)  
 DPX-MKN58

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	55.4
3-(3,4-DICHLOROPHENYL)-1,1-DIMETHYLUREA		
*HEXAZINONE	51235-04-2	23.1
[3-CYCLOHEXYL-6-(DIMETHYLAMINO)-1-METHYL-1,3,5- TRIAZINE-2,4(1H,3H)-DIONE]		
INERT INGREDIENTS		21.5

\* 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. 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 from individual components]:

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.

IF INHALED: No specific intervention is indicated as the

## (FIRST AID MEASURES - Continued)

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.

-----  
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.

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)

USERS SHOULD: Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## 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

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.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

Flaggers supporting aerial applications must use an enclosed cab that meets the definition in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(5)] for dermal protection.

## 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.

Pilots, flaggers and groundboom applicators must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear

Mixers, loaders, other applicators, and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks.
- Protective eyewear.
- Chemical resistant gloves made of any waterproof material such as polyethylene or polyvinylchloride.
- A NIOSH approved dust/mist filtering respirator with any N, R, P, or HE filter or with approval number prefix TC-21C.
- Chemical resistant apron when mixing, loading, or cleaning equipment or spills.

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

## (EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

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/m<sup>3</sup>, 8 Hr. TWA, A4  
AEL \* (DuPont) : 1 mg/m<sup>3</sup>, 8 & 12 Hr. TWA, total dust

## HEXAZINONE

PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : 10 mg/m<sup>3</sup>, 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  
Solubility in Water : 0 % Disperses

-----  
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.

## (STABILITY AND REACTIVITY - Continued)

## 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 (Diuron 80%)

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.

## (TOXICOLOGICAL INFORMATION - Continued)

## VELPAR DF (Hexazinone 75%)

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 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

## AQUATIC TOXICITY:

## DIURON

96-Hour LC50 - Bluegill sunfish: 25 mg/L  
96-Hour LC50 - Rainbow trout: 14.7 mg/L  
48-Hour EC50 - Daphnia magna: 1.4 mg/L  
EC50 - Algae - 0.018 mg/L

## AVIAN TOXICITY:

## DIURON

LD50 - Bobwhite Quail: 1104 mg/kg

## AQUATIC TOXICITY:

## HEXAZINONE

96-Hour LC50 - Fathead minnows: 274 mg/L  
96-Hour LC50 - Bluegill sunfish: > 370 mg/L  
96-Hour LC50 - Rainbow trout: > 320 mg/L

## (ECOLOGICAL INFORMATION - Continued)

## AVIAN TOXICITY:

## HEXAZINONE

LD50 - Bobwhite quail: 2258 mg/kg

-----  
DISPOSAL CONSIDERATIONS  
-----

## Waste Disposal

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

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

## ENVIRONMENTAL HAZARDS

For terrestrial uses, 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 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

## (DISPOSAL CONSIDERATIONS - Continued)

State and local authorities, by burning. If burned, stay out of smoke.

Container Refilling and Disposal (For Containers up to 250 gal): This is a refillable container. If the container is to be refilled, do not rinse with any material or introduce any pesticide other than this product. Reseal and return the container to any authorized DuPont refilling facility. If the container is not to be refilled, triple rinse (or equivalent) and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by State and local authorities. If burned, keep out of smoke.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

Container Disposal for Bulk Containers: When the container is empty, replace the cap and seal all openings that have been opened during use, and return the container to the point of purchase or to a designated location named at time of purchase of this product. The container must only be refilled with this pesticide product. DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, contact DuPont at 1-800-441-3637. If not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of the container must be in compliance with State and local regulations. For minor spills, leaks, etc., follow all precautions indicated on the product label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of major spill, fire or other emergency, call 1-800-441-3637 day or night.

-----  
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

\*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. 352-666

## 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  
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