



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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M0000525 "KARMEX" DF  
Revised 28-OCT-2005

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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"KARMEX" is a registered trademark of DuPont.

Tradenames and Synonyms

KARMEX IWC HERBICIDE  
KARMEX XP HERBICIDE  
DIREX 80DF HERBICIDE  
NAUTILUS HERBICIDE  
DPX-14740  
DIURON

Company Identification

MANUFACTURER/DISTRIBUTOR

Griffin L.L.C. (USA)  
2509 Rocky Ford Road  
P.O. Box 1847  
Valdosta  
GA.  
USA  
31603-1847

PHONE NUMBERS

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

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
*DIURON	330-54-1	80
3-[3,4-DICHLOROPHENYL]-1,1-DIMETHYLUREA		
INERT INGREDIENTS		20

\* 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.

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HAZARDS IDENTIFICATION  
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## Emergency Overview

Caution! Harmful if swallowed or absorbed through skin.  
Causes moderate eye irritation. Avoid contact with eyes,  
skin, or clothing.

## Potential Health Effects

Skin contact with Diuron may cause skin irritation with discomfort or rash. Significant skin permeation and systemic toxicity after contact appear unlikely. There are no reports of human sensitization.

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

Based on animal data, repeated or excessive exposures by ingestion may cause liver enlargement; abnormal liver function as detected by laboratory tests; spleen effects; abnormal blood forming system function with anemia; red blood cell destruction; headache, weakness, cyanosis (bluish discoloration of the skin) possibly progressing to dizziness, incoordination, shortness of breath, increased pulse rate and loss of consciousness.

Individuals with preexisting diseases of the liver or bone marrow may have increased susceptibility to the toxicity of excessive exposures.

No adequate epidemiologic studies are available for this compound.

## Carcinogenicity Information

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

Material	IARC	NTP	OSHA	ACGIH
DIURON				A4

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FIRST AID MEASURES  
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## First Aid

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 for treatment

## (FIRST AID MEASURES - Continued)

advice.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies involving this product, call toll free 1-800-441-3637.

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FIRE FIGHTING MEASURES  
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## Flammable Properties

Flash Point & Method:	Not determined
Flammable Limits:	0.070 g/L
Autoignition Temperature:	455°C (851°F)

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air. Prevent human exposure to fire, smoke, fumes or products of combustion.

## Extinguishing Media

Dry Chemical, CO<sub>2</sub>, Water Spray, Foam.

If area is heavily exposed to fire, and conditions permit, let fire burn itself out since water may increase the area contaminated.

## Fire Fighting Instructions

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

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ACCIDENTAL RELEASE MEASURES  
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## Safeguards (Personnel)

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

## Spill Clean Up

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

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HANDLING AND STORAGE  
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## Handling (Personnel)

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

## Storage

Do not contaminate water, food or feed by storage.

Store product in original container only, away from other pesticides, fertilizer, food or feed.

Keep out of reach of children.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## # 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 an EPA chemical-resistant category selection chart.

Applicators and other handlers must wear:

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

Mixers and Loaders must also wear:

- Apron

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

## (EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

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.

## 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

\* 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.

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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Vapor Pressure	: Not determined
Density	: 40 lbs/ft <sup>3</sup>
Solubility in Water	: Dispersible. Diuron's solubility in water is 42 ppm.
pH	: Not determined
Boiling Point	: Not determined
Melting Point	: Not determined
Odor	: Odorless
Color	: Brown
Physical State	: Granule

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STABILITY AND REACTIVITY  
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## Chemical Stability

Stable at normal conditions.

## Polymerization

Polymerization will not occur.

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TOXICOLOGICAL INFORMATION  
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## # Animal Data

## "Karmex" DF

Oral LD50: 2800 mg/kg in rats (slightly toxic)  
Dermal LD50: > 2000 mg/kg in rabbits  
(slightly to moderately toxic)  
Inhalation LC50, 4 hr: > 5.6 mg/L in rats  
(very low toxicity)

"Karmex" DF is a moderate eye irritant, and a mild skin irritant.  
It is not a skin sensitizer in animals.

Single doses of "Karmex" DF by ingestion caused lethargy and weight loss.

Effects in animals from short inhalation exposure to Diuron include lethargy, incoordination, and nonspecific effects such as weight loss and irritation.

Repeated ingestion exposures with Diuron caused enlarged spleen, increased liver and kidney weights, reduced growth rate, pallor, anemia, red blood cell destruction, cyanosis, increased liver enzyme activity, and nonspecific effects such as weight loss and irritation. In addition, long-term effects included bone marrow changes, thickening of the urinary bladder, pigment deposits in the spleen, and kidney effects.

In chronic feeding studies an increase in urinary bladder tumors in high-dose rats and an increase of mammary tumors in high-dose female mice were observed. The weight of the evidence indicates that Diuron does not produce genetic damage in bacterial or mammalian cell cultures or in animal tests. 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 producing maternal toxicity. Testing in rats demonstrate no reproductive toxicity.

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ECOLOGICAL INFORMATION  
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## # Ecotoxicological Information

## ENVIRONMENTAL TOXICITY:

## AQUATIC TOXICITY:

96 hour LC50 - Rainbow trout: 190 mg/L.  
96 hour LC50 - Bluegill sunfish: > 300 mg/L

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

## PESTICIDE DISPOSAL:

Do not contaminate water, food or feed by disposal. Wastes 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, 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. Cover or incorporate spills.

## Container Disposal

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

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TRANSPORTATION INFORMATION  
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## Shipping Information

## DOT/IMO/ICAO :

Proper Shipping Name : Not regulated.

NOTE: If a single package contains 100 or more pounds Diuron, classify as: Environmentally Hazardous Substance, Solid, n.o.s., (Diuron)

Hazard Class : 9

UN/NA Number : 3077

Packaging Group : III

Marine Pollutant : No

Reportable Quantity : Yes (100 pounds) Insert letters RQ before or after basic description.

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REGULATORY INFORMATION  
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## U.S. Federal Regulations

## TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes

Chronic : Yes

Fire : No

Reactivity : No

## (REGULATORY INFORMATION - Continued)

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. 1812-362

## State Regulations (U.S.)

\*\*\*\* CALIFORNIA PROP 65 \*\*\*\*

This material contains Diuron, a chemical known to the state of California to cause cancer in laboratory animals.

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OTHER INFORMATION  
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## NFPA, NPCA-HMIS

## HAZARDS CLASSIFICATION:

(0-minimal, 1-slight, 2-moderate, 3-serious, 4-severe)

HMIS: HEALTH-2 FIRE-1 REACTIVITY-0  
NFPA: HEALTH-1 FIRE-1 REACTIVITY-0

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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