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"KARMEX" DF  
GPA00302 Revised 2-NOV-2004 Printed 10-FEB-2005  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"KARMEX" is a registered trademark of DuPont.

Company Identification

MANUFACTURER/DISTRIBUTOR

E.I. du Pont Canada Company  
P.O. Box 2200  
Streetsville  
Mississauga, Ontario L5M 2H3

PHONE NUMBERS

Product Information : 1-800-387-2122  
Medical Emergency : 1-800-441-3637 (24 hours)

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
*DIURON	330-54-1	80 WT%
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.

## (HAZARDS IDENTIFICATION - Continued)

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 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.

## (FIRST AID MEASURES - Continued)

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. See Label for Additional Precautions and Directions for Use.

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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)

## FIRE FIGHTING HAZARDS &amp; PROCEDURES

General Hazard: 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: Use dry chemical, carbon dioxide, water spray or foam.

Fire Fighting Instructions: If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the contamination hazard.

Fire Fighting Equipment: Wear protective clothing and self contained breathing apparatus.

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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.

## (HANDLING AND STORAGE - Continued)

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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.

Do not store or consume food, drink, or tobacco in areas where they may become contaminated with this material. Store in a well ventilated place. Keep container tightly closed. Do not store near feed, food, or within the reach of children.

Avoid breathing vapors of mist. Avoid breathing dust. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

## PESTICIDE APPLICATORS &amp; WORKERS

These workers must refer to the Product Label and Directions For Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170.

## MANUFACTURING, COMMERCIAL BLENDING, &amp; PACKAGING WORKERS

Ventilation : Control enclosed spaces with adequate ventilation to prevent exceedance of ACGIH TLV or OSHA PEL.

Respiratory Protection : In enclosed spaces where the TLV or PEL may be exceeded, wear NIOSH/OSHA approved dust or mist respirator.

Eye Protection : Wear protective eyewear to prevent contact with this substance.

## (EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

## 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.
- Shoes plus socks.

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.

## 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

## Material Safety Data Sheet

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

General: This material is stable under normal conditions.  
Incompatible Materials: Not determined  
Hazardous Decomposition: Not determined  
Hazardous Polymerization: Material is not known to polymerize.

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TOXICOLOGICAL INFORMATION  
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## Animal Data

## Diuron

Inhalation 4 hour LC50: > 5.0 mg/L in rats  
(Very low toxicity by inhalation)  
Dermal LD50: > 2000 mg/kg in rabbits  
(Slightly to moderately toxic by contact)  
Oral LD50: 2500 mg/kg in rats  
(Slightly toxic by ingestion)

Diuron is a mild skin irritant, but is not a skin sensitizer in animals. Diuron is a moderate eye irritant.

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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DISPOSAL CONSIDERATIONS  
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ECOLOGICAL INFORMATION  
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## Ecotoxicological Information

## DIURON

## AQUATIC TOXICITY:

Moderately toxic.

96 hour LC50 - Fathead minnows: 14.2 mg/L.

96 hour LC50 - Bluegill sunfish: 25 ppm.

96 hour LC50 - Rainbow trout: 20 ppm.

## AVIAN TOXICITY:

LD50 - Mallard Duck: &gt; 2000 mg/kg.

## Waste Disposal

Do not contaminate water, food or feed by disposal.

Comply with appropriate disposal regulations. Landfill solids at permitted sites. Use registered transporters.

## 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

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

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

Shipping Information -- Canada

This material is Not Regulated.

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REGULATORY INFORMATION  
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U.S. Federal Regulations

OSHA:

This product is considered hazardous under the OSHA  
Hazardous Communication Standard (29 CFR §1910.1200).

TSCA:

All product components are on the TSCA Chemical Inventory.

CERCLA:

Releases of this material (RQ = 100 pounds) to air, land,  
or water are reportable to the National Response Center  
under the Comprehensive Environmental Response,  
Compensation, and Liability Act (CERCLA) or to the state  
and local emergency planning committees under the Superfund  
Amendments and Reauthorization Act (SARA) Title III Section  
304.

RCRA:

When a decision is made to discard this material as  
supplied, it does not meet RCRA's characteristic definition  
of ignitability, corrosivity, or reactivity, and is not  
listed in 40 CFR §261.33.

SARA TITLE III

302 : Not listed

311/312 Hazard Categories: This product has been reviewed according to the EPA "Hazard Categories" and is categorized as an acute and chronic health hazard (40 CFR §370.41).

313 Reportable Ingredients: This product contains diuron, which is listed in Section 313 above de minimis concentrations (40 CFR §372).

CALIFORNIA PROP 65 : This material contains diuron, a chemical known to the state of California to cause cancer in laboratory animals.

EPA Reg. No. 1812-362

Canadian Regulations

Regulated under the Pest Control Products Act--WHMIS Exempt

Regulated under the Pest Control Products Act--WHMIS Exempt

Registration No. 21252 Pest Control Products Act

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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  
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Crop Protection  
E.I. du Pont Canada Company  
Box 2200, Streetsville  
Mississauga, Ontario L5M 2H3  
(905) 821-3300.

End of MSDS

