

**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : DuPont™ Direx® 4L Herbicide  
Tradename/Synonym : DPX-14740  
B11703447  
DIURON: 3-[3,4-Dichlorophenyl]-1,1-Dimethylurea

MSDS Number : 130000028146

Manufacturer : DuPont  
1007 Market Street  
Wilmington, DE 19898

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)  
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)  
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

**SECTION 2. HAZARDS IDENTIFICATION**

## Emergency Overview

Caution

Harmful if swallowed.

## Potential Health Effects

This section includes potential acute adverse effects which could occur if this material is not used according to the label.

## Skin

Diuron : May cause skin irritation. Discomfort, Rash.

Ethylene Glycol : May irritate skin.

## Eyes

Diuron : May cause eye irritation. Discomfort, tearing, Blurred vision.

Ethylene Glycol : May irritate eyes.


**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

- Inhalation  
Ethylene Glycol : May cause irritation of respiratory tract.
- Ingestion  
Diuron : May cause: Abnormal decrease in number of red blood cells (anaemia) which could produce tiredness, rapid heartbeat, dizziness, pale skin, leg cramps, shortness of breath  
Ethylene Glycol : Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.
- Repeated exposure  
Diuron : Adverse effects from repeated exposure may include: Bladder damage altered blood chemistry  
Ethylene Glycol : Kidney damage Liver effects altered blood chemistry
- Target Organs  
Diuron : Blood Urinary system Bladder  
Ethylene Glycol : Kidney Liver
- Carcinogenicity  
None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Concentration
Diuron	330-54-1	40.9 %
Other Ingredients		59.1 %

Includes percentages of the following:


**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

Ethylene Glycol	107-21-1	5 %
-----------------	----------	-----

**SECTION 4. FIRST AID MEASURES**

- Skin contact** : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact** : 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.
- Inhalation** : Move 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 treatment advice.
- Ingestion** : Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person.
- General advice** : 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.

**SECTION 5. FIRE-FIGHTING MEASURES**

- Flammable Properties**  
Flash point : > 200 °C (> 392 °F) Tag closed cup
- Fire and Explosion Hazard** : Under severe dusting conditions, this material may form explosive mixtures in air.
- Suitable extinguishing media** : Water spray, Foam, Dry chemical, Carbon dioxide (CO2)
- Unsuitable extinguishing media** : High volume water jet, (contamination risk)



**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

**Firefighting Instructions** : In the event of fire, wear self-contained breathing apparatus. Wear full protective equipment.  
If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers / tanks with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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

**Spill Cleanup** : Prevent further leakage or spillage. Dike large spills using absorbent or impervious materials such as sand or clay. Dispose of in an approved container. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes.  
If liquid has been spilt in large quantities clean up promptly by scoop or vacuum.

**Accidental Release Measures** : Prevent material from entering sewers, waterways, or low areas. Never return spills in original containers for re-use.

**SECTION 7. HANDLING AND STORAGE**

**Handling (Personnel)** : 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 material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Storage** : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Store in a cool, dry place. Keep out of the reach of children.



**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Engineering controls : Refer to the product label for additional Engineering Controls.

Personal protective equipment

Skin and body protection : Pilots, flaggers and groundboom applicators must wear:  
 Long sleeved shirt and long pants  
 Shoes plus socks  
 Mixers, loaders, applicators and other handlers must wear:  
 Long sleeved shirt and long pants  
 Shoes plus socks  
 Chemical resistant gloves made of any waterproof material  
 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 cleaning equipment, mixing or loading  
 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 measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Exposure Guidelines

Exposure Limit Values

Diuron

TLV (ACGIH) 10 mg/m3 TWA

AEL \* (DUPONT) 1 mg/m3 8 & 12 hr. TWA Total dust.

Ethylene Glycol

TLV (ACGIH) 100 mg/m3 TLV-C Aerosol.

AEL \* (DUPONT) 50 ppm 8 & 12 hr. TWA Vapor.

AEL \* (DUPONT) 10 mg/m3 8 & 12 hr. TWA Particulate.


**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

\* 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.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form	: liquid
Color	: white
Odor	: odourless
pH	: 6.5 - 7.5
Density	: 1.17 g/cm <sup>3</sup>
Specific Gravity	: 1.48 (for a component of this mixture)

**SECTION 10. STABILITY AND REACTIVITY**

Stability	: Stable at normal temperatures and storage conditions.
Incompatibility	: No materials to be especially mentioned.
Hazardous decomposition products	: Thermal decomposition can lead to release of irritating gases and vapours.

**SECTION 11. TOXICOLOGICAL INFORMATION**

DuPont™ Direx® 4L Herbicide	
Inhalation 4 h LC50	: > 2.02 mg/l , rat
Dermal LD50	: > 5,000 mg/kg , rat
Oral LD50	: 1,919 mg/kg , rat
Skin irritation	: slight irritation, rat
Eye irritation	: slight irritation, rabbit
Sensitisation	: Did not cause sensitization on laboratory animals., guinea pig
Diuron	
Repeated dose toxicity	:



**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

Oral

rat

Red blood cell destruction causing abnormal decrease in number of red blood cells (anaemia), Spleen effects, bone marrow changes, Kidney effects, Bladder effects, Reduced body weight gain

Oral

dog

Red blood cell destruction causing abnormal decrease in number of red blood cells (anaemia), Spleen effects, bone marrow changes, Reduced body weight gain

Inhalation

rat

Red blood cell destruction causing abnormal decrease in number of red blood cells (anaemia), Spleen effects

Carcinogenicity : The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

An increased incidence of tumours was observed in laboratory animals.

Mutagenicity : Overall weight of evidence indicates that the substance is not mutagenic.

Reproductive toxicity : Animal testing did not show any effects on fertility.

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Ethylene Glycol

Repeated dose toxicity : Oral  
rat  
Kidney damage

Inhalation

dog

Spleen effects


**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Animal testing did not show any mutagenic effects.
Reproductive toxicity	:	Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.
Teratogenicity	:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

**SECTION 12. ECOLOGICAL INFORMATION**
**Aquatic Toxicity**
**Diuron**

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 14.7 mg/l
72 h EC50	:	Algae 0.018 mg/l
72 h NOEC	:	Algae 0.01 mg/l
48 h EC50	:	Daphnia magna (Water flea) 1.4 mg/l

**Ethylene Glycol**

96 h LC50	:	Pimephales promelas (fathead minnow) > 100 mg/l
96 h EC50	:	Algae > 100 mg/l
24 h EC50	:	Daphnia > 10,000 mg/l
48 h EC50	:	Daphnia > 100 mg/l

**Additional ecological information** : 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 cleaning equipment or disposing of equipment washwaters or rinsate.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Waste Disposal** : Do not contaminate water, food or feed by disposal. Wastes resulting from the


**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Disposal**

: Container Refilling and Disposal:  
Refer to the product label for instructions.  
Do not transport if this container is damaged or leaking.

In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

**SECTION 14. TRANSPORT INFORMATION**

IATA_C	UN number	: 3082
	Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (Diuron)
	Class	: 9
	Packing group	: III
	Labelling No.	: 9MI
IMDG	UN number	: 3082
	Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (Diuron)
	Class	: 9
	Packing group	: III
	Labelling No.	: 9
	Marine pollutant	: yes (Diuron)

Not regulated by DOT in single packages containing less than 100 pounds.

**SECTION 15. REGULATORY INFORMATION**

SARA 313 Regulated Chemical(s) : Diuron , Ethylene Glycol

Title III hazard : Acute Health Hazard: Yes

9 / 11



**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

classification	Chronic Health Hazard: Yes Fire: No Reactivity/Physical hazard: No Pressure: No
CERCLA Reportable Quantity	: 247 lbs Based on the percentage composition of this chemical in the product.: Diuron
EPA Reg. No.	: 352-678 In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.
California Prop. 65	: WARNING! This product contains a chemical known to the State of California to cause cancer.Diuron
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Diuron , Ethylene Glycol
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Diuron , Ethylene Glycol

**SECTION 16. OTHER INFORMATION**

	NFPA	HMIS
Health :	1	2
Flammability :	1	1
Reactivity/Physical hazard :	0	0

™ Trademark of E.I. du Pont de Nemours and Company.  
® Registered trademark of E.I. du Pont de Nemours and Company



**DuPont™ Direx® 4L Herbicide**

Version 2.0

Revision Date 02/25/2011

Ref. 130000028146

Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.