

DuPont  
Material Safety Data Sheet

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"LOROX" L HERBICIDE  
GPA00214 Revised 30-JAN-2006 Printed 30-JAN-2006  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"LOROX" 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	%
*LINURON (3-(3,4-DICHLOROPHENYL)-1-METHOXY-1-METHYLUREA)	330-55-2	40.7 %
INERT INGREDIENTS		59.3 %

\* 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.

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HAZARDS IDENTIFICATION  
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Potential Health Effects

CAUTION! Harmful if swallowed.

ROUTES OF EXPOSURE AND EFFECTS:

Acute oral LD50 (rats): 3,936 mg/kg (females); 2,437 mg/kg (males). Slightly toxic by ingestion.

Acute dermal LD50 (rabbits): >2,000 mg/kg. Not a skin irritant.

## Material Safety Data Sheet

## (HAZARDS IDENTIFICATION - Continued)

## CHRONIC STUDIES: (linuron)

Rat Feeding Study - Dietary administration to rats for 24 months at 125 ppm and 625 ppm (highest level fed) resulted in reduced body weight gains, hemolytic effects and slight increases in sulfohemoglobin and methemoglobin. In high-dose males there was an increase in benign testicular interstitial cell adenomas, a common lesion for aged rats of this strain. The no-effect level (NOEL) was 50 ppm.

Dog Feeding Study - One and two-year dietary studies were conducted in dogs at 0, 25, 125 and 625 ppm. The NOEL for both was 25 ppm based on hemolytic anemia and slight increases in methemoglobin at 125 and/or 625 ppm.

Mouse Feeding Study - In a 2-year mouse feeding study, no effects were observed at 50 and 150 ppm (the NOEL). The highest level fed, 1500 ppm, produced an increase in incidence of hepatocellular adenomas among females. Significantly reduced body weights and other liver histopathology indicated that this dose was excessive and may have exceeded the Maximum Tolerated Dose for chronic testing in this species.

## REPRODUCTION STUDIES:

Multigeneration reproduction studies were conducted in two rats strains at dietary dose ranging from 12.5 to 625 ppm. Although toxicity to parents and offspring was observed at 625 ppm, there was no reproductive toxicity. The highest NOEL for systemic toxicity was 125 ppm.

## TERATOGENICITY STUDIES:

Dietary administration to rats at 0, 50, 125 and 625 ppm did not result in teratogenic or embryotoxic effects at any level. Linuron was not teratogenic in two gavage studies in rats at doses ranging from 20 to 180 mg/kg/day. The NOELs for maternal and fetal toxicity were 50 mg/kg and 100 mg/kg, respectively. Linuron was also non-teratogenic via gavage administration to rabbits in two studies with doses ranging from 5 to 100 and from 10.5 to 62.5 mg/kg/day. The highest maternal and fetal NOELs were 10.5 mg/kg and 25 mg/kg, respectively.

## MUTAGENICITY STUDIES:

Based on results from mutagenicity tests with various end-points (point mutation in bacterial and mammalian cells; chromosomal aberration in vitro and in vivo; and DNA repair), the weight of evidence indicates that linuron is neither mutagenic nor genotoxic.

## (HAZARDS IDENTIFICATION - Continued)

## HUMAN HEALTH EFFECTS OF OVEREXPOSURE TO LINURON:

Overexposure by skin contact may initially include skin irritation with discomfort and rash.

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

Data from animal studies suggest that repeated or prolonged exposure by ingestion may cause red blood cell destruction.

Significant skin permeation, and systemic toxicity, after contact appears unlikely. There are no reports of human sensitization.

## Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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FIRST AID MEASURES  
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## First Aid

## INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

## SKIN CONTACT

In case of contact, immediately wash skin with soap and water. Wash contaminated clothing before reuse.

## EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

## INGESTION

If swallowed, immediately give 2 glasses of water and induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.

## Material Safety Data Sheet

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FIRE FIGHTING MEASURES  
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## Flammable Properties

Not a fire or explosion hazard.

## Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

## Fire Fighting Instructions

Wear self-contained breathing apparatus. Wear full protective equipment. Use water spray. Cool tank/container with water spray.

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

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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.

## Initial Containment

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

## Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material.

## Accidental Release Measures

If spill area is on ground near valuable plants or trees, remove top 2 inches of soil after initial cleanup.

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HANDLING AND STORAGE  
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## Handling (Personnel)

Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

## (HANDLING AND STORAGE - Continued)

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

## Storage

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

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Keep container tightly closed.

## Personal Protective Equipment

Always follow label instructions when using this product.

Applicators and other handlers must wear:

Coveralls over short-sleeve shirt and short pants  
Chemical-resistance gloves, such as barrier laminate or  
butyl rubber or nitrile rubber or polyvinyl chloride or  
viton or neoprene rubber  
Shoes plus socks  
Chemical-resistant headgear for overhead exposure

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 over short-sleeve shirt and short pants  
Chemical-resistant gloves, such as barrier laminate or  
butyl rubber or nitrile rubber or polyvinyl chloride or  
viton or neoprene rubber  
Shoes plus socks  
Chemical-resistant headgear for overhead exposure

## Exposure Guidelines

## Applicable Exposure Limits

LINURON

PEL (OSHA) : None Established

TLV (ACGIH) : None Established

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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Solubility in Water : Miscible

Odor : None

Form : Liquid

Color : White

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STABILITY AND REACTIVITY  
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## Chemical Stability

Stable at normal temperatures and storage conditions.

## Incompatibility with Other Materials

None reasonably foreseeable.

## Polymerization

Polymerization will not occur.

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TOXICOLOGICAL INFORMATION  
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No Information Available

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ECOLOGICAL INFORMATION  
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## Ecotoxicological Information

## Aquatic Toxicity

The active ingredient, linuron, is moderately toxic.

96 hr LC50, Bluegill Sunfish: 9.6 mg/L

96 hr LC50, Rainbow Trout: 3.3 mg/L

## ENVIRONMENTAL TOXICITY:

LD50, Bobwhite Quail: 940 mg/kg

LD50, Mallard Duck: 3083 ppm

## Material Safety Data Sheet

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

CONTAINER DISPOSAL: Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, 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  
Proper Shipping Name : NOT REGULATED

## Shipping Information -- Canada

This material is Not Regulated.

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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  
Pressure : No

## Canadian Regulations

Regulated under the Pest Control Products Act--WHMIS Exempt.  
Registration No. 16279 Pest Control Products Act

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OTHER INFORMATION  
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## NFPA, NPCA-HMIS

NFPA Rating  
Health : 1  
Flammability : 0  
Reactivity : 0

(Continued)

## NPCA-HMIS Rating

Health	: 1
Flammability	: 0
Reactivity	: 0

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

## Additional Information

This product is registered under EPA/FIFRA regulations.

EPA Reg. No. 352-391.

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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

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

End of MSDS