



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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"DuPont" "HYVAR" X-L Herbicide  
M0000019 Revised 23-JUN-2006  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"HYVAR" is a registered trademark of DuPont.

"DuPont" is a trademark of DuPont.

Corporate MSDS Number : DU003802

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)

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
*BROMACIL	314-40-9	21.9
(LITHIUM SALT OF 5-BROMO-3-SEC-BUTYL-6-METHYLURACIL)		
INERT INGREDIENTS		78.1
(INCLUDES PERCENTAGES OF THE FOLLOWING:)		
* ETHYLENE GLYCOL	107-21-1	30-35
ETHANOL	64-17-5	<10
* METHANOL	67-56-1	<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.

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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

Based on animal studies, eye contact with "Hyvar" X-L may  
cause moderate corneal opacity.

Based on animal studies, skin contact with "Hyvar" X-L  
may cause skin irritation or rash.

## Carcinogenicity Information

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

Material  
BROMACIL

IARC NTP OSHA ACGIH  
A3

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FIRST AID MEASURES  
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## 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 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 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 INHALED: No specific intervention is indicated as the  
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 emergency medical  
emergencies involving this product.

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FIRE FIGHTING MEASURES  
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## Flammable Properties

Flash Point : 44 C (111 F)  
Method : Setaflash  
Autoignition : 410 C (770 F)

Combustible. Heating can release vapors which can be ignited.

Do not store near heat or open flame.

## 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. Runoff from fire control may be a pollution hazard.

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)

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

Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## Handling (Physical Aspects)

Keep away from heat, sparks and flames.

## Storage

Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Keep container closed when not in use.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Workers 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.

## Personal Protective Equipment

Some materials that are chemical resistant to this product are listed below. If you want more options follow the instructions for Category C on the EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks.
- Chemical Resistant Gloves, Category C (such as butyl rubber, neoprene rubber, or nitrile rubber) equal to or greater than 14 mils.

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 and maintaining PPE. If no such

## (EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

instructions for washables, use detergent and hot water.  
Keep and wash PPE separately from other laundry.

## Exposure Guidelines

## Applicable Exposure Limits

## BROMACIL

PEL (OSHA) : None Established  
TLV (ACGIH) : 10 mg/m3, 8 Hr. TWA, A3  
AEL \* (DuPont) : 10 mg/m3, 8 & 12 Hr. TWA

## ETHYLENE GLYCOL

PEL (OSHA) : None Established  
TLV (ACGIH) : Ceiling: 39.4 ppm, 100 mg/m3, aerosol, A4  
AEL \* (DuPont) : 50 ppm, 8 Hr. TWA, vapor  
10 mg/m3, 8 Hr. TWA, particulate

## ETHANOL

PEL (OSHA) : 1,000 ppm, 1,900 mg/m3, 8 Hr. TWA  
TLV (ACGIH) : 1,000 ppm, 1,880 mg/m3, 8 Hr. TWA, A4  
AEL \* (DuPont) : 1000 ppm, 8 & 12 Hr. TWA

## METHANOL

PEL (OSHA) : 200 ppm, 260 mg/m3, 8 Hr. TWA  
TLV (ACGIH) : 200 ppm, 8 Hr. TWA, Skin  
STEL 250 ppm  
AEL \* (DuPont) : 200 ppm, 8 & 12 Hr. TWA, Skin

\* 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

Solubility in Water : Soluble  
pH : 11.2 - 12.2  
Odor : Alcoholic  
Form : Liquid  
Color : Amber  
Density : 1.12 g/cc

## Physical Hazards

Combustible. Do not use or store near heat or open flame.  
Keep container tightly closed when not in use.

## STABILITY AND REACTIVITY

### Chemical Stability

Stable at normal temperatures and storage conditions.

### Incompatibility with Other Materials

Incompatible with acids and amines, especially primary amines.

## Decomposition

Decomposes with heat.

## Polymerization

Polymerization will not occur.

### TOXICOLOGICAL INFORMATION

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# Animal Data
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Based on animal testing, Hyvar X-L is an eye and skin irritant, but is not a skin sensitizer.

Oral LD50 : 3927 mg/kg (male rats)  
1414 mg/kg (female rats)  
Dermal LD50 : >5000 mg/kg (rabbits)  
Inhalation 4-hr LC50: >or= 4.3 mg/L (rats)

## BROMACIL

Repeated exposure to Bromacil by ingestion resulted in incoordination, salivation, vomiting, weakness, tearing and dilated pupils. Repeated exposure caused liver changes, increased liver, adrenal, and heart weights, decreased kidney and spleen weights, and thyroid changes. Long-term exposure caused reduced weight gain, slight thyroid effects, and liver effects.

Repeated exposure to Bromacil by inhalation caused slightly increased platelet counts, lower serum cholesterol, and slightly increased liver weights. All remaining animals were normal after a 14-day recovery period.

Dogs fed Bromacil for one year had decreased body weight gain in the high dose group. Rats fed Bromacil for two years had reduced body weight gain, increased incidence of thyroid cysts, and enlargement of thymus at the high dose, and a dose-related increase in thyroid tumors. Mice fed Bromacil for 18-months had liver lesions in all male groups and an increase in liver tumors in the high dose males.

## (TOXICOLOGICAL INFORMATION - Continued)

Animal testing indicates Bromacil does not have reproductive effects. Bromacil is not considered to be a developmental toxicant. Any developmental effects occurred at maternally toxic doses. The weight of evidence suggests that Bromacil does not produce genetic damage in mammalian or bacterial cells cultures or animal studies.

## METHANOL

Toxic effects that may result from excessive exposure to methanol include visual disturbances or blindness, narcosis and other CNS effects, liver effects, and acidosis.

Individuals with preexisting diseases of the retina or liver may have increased susceptibility to methanol toxicity.

## ETHYLENE GLYCOL

Immediate effects of overexposure to ethylene glycol by ingestion or inhalation may include non-specific effects such as headache, nausea and weakness. Gross overexposure may cause central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness; altered kidney function which may be accompanied by abnormal urine volume, low back pain, discomfort or edema; kidney stones; liver abnormalities; high blood pressure; irregular heart beat with a strange sensation in the chest, "heart thumping"; apprehension; lightheadedness, feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness; retention of acid in the blood, making oxygen less available in the blood stream and leading to symptoms of increased breathing rate, nausea, vomiting, confusion and weakness which may progress to loss of consciousness. Gross overexposure could lead to death. Skin permeation can occur in amounts capable of producing the effects of systemic toxicity. There are no reports of human sensitization. Individuals with preexisting diseases of the kidneys may have increased susceptibility to the toxicity of excessive exposures.

## ETHANOL

Toxic effects described in animals include effects on the liver, reproductive system, and cardiovascular system along with CNS depression.

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ECOLOGICAL INFORMATION  
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## # Ecotoxicological Information

## AQUATIC TOXICITY

For the active ingredient Bromacil:

96 hr LC50 Rainbow trout:	36 mg/L
96 hr LC50 Bluegill sunfish:	127 mg/L
96 hr LC50 Fathead minnows:	182 mg/L

## (ECOLOGICAL INFORMATION - Continued)

## AVIAN TOXICITY

For the active ingredient Bromacil:

Acute Oral LD50 Bobwhite quail	2250 mg/kg
Subacute Dietary LC50 Mallard duck	>10,000 ppm
Subacute Dietary LC50 Bobwhite quail	>10,000 ppm

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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.

Do not contaminate water, food, or feed by disposal. Waste resulting from the use of this product may be disposed of on the site or at an approved waste disposal facility.

## 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.

## Container Disposal

Triple rinse (or equivalent). 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

Proper Shipping Name : Not Regulated for Domestic Non-Bulk Shipments\*

## DOT/IMO

Proper Shipping Name : ETHANOL SOLUTION  
Hazard Class : 3  
UN No. : UN1170  
Special Information : FLASHPOINT: 44 DEG C (110 DEG F)  
Packing Group : III



## (TRANSPORTATION INFORMATION - Continued)

## \* For domestic bulk shipments:

Proper Shipping Name : Combustible Liquid, N.O.S.  
(Ethanol)  
NA No. : NA1993  
Packaging Group : III

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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 : Yes  
Reactivity : No  
Pressure : No

## ADDITIONAL REGULATORY INFORMATION

SARA/CERCLA Reportable Quantity:  
Methyl alcohol (5,000 lb)

## REGULATORY CONTROLS:

"HYVAR" X-L Herbicide is registered under EPA/FIFRA  
regulations.

EPA Reg. No. 352-346

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OTHER INFORMATION  
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## NFPA, NPCA-HMIS

NFPA Rating  
Health : 1  
Flammability : 2  
Reactivity : 0

NPCA-HMIS Rating  
Health : 1  
Flammability : 2  
Reactivity : 0

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

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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.

M0000019

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(Continued)

Responsibility for MSDS : DuPont Crop Protection  
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