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DuPont
Material Safety Data Sheet

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"DuPont" "HYVAR" X-L Herbicide
M0000019 Revised 24-JUN-2003

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

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)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
*BROMACIL (LITHIUM SALT OF 5-BROMO-3-SEC-BUTYL-6-METHYLURACIL)	314-40-9	21.9
INERT INGREDIENTS (INCLUDES PERCENTAGES OF THE FOLLOWING:)		78.1
* 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.

HAZARDS IDENTIFICATION

Emergency Overview

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

Potential Health Effects

Oral LD50: 3927 mg/kg (rats)
Considered slightly toxic.

Dermal LD50: >5000 mg/kg (rabbits)
Moderately toxic.

Inhalation: 1 hour LC50 > or = to 4.3 mg/L

SKIN IRRITATION AND SENSITIZATION

Mild to moderate irritation occurs following exposure to
"Hyvar" X-L. It did not produce skin sensitization.

EYE CONTACT

"Hyvar" X-L Herbicide is an eye irritant causing moderate
corneal opacity.

CHRONIC STUDIES (TECHNICAL BROMACIL)

The compound is a moderate skin irritant, is a mild to
moderate eye irritant, and is not a skin sensitizer.
Rabbits acutely exposed via dermal route demonstrated no
clinical signs of toxicity, and no gross tissue changes were
observed at the highest practical dose, 5,000 mg/kg.

INHALATION

Acute exposure of rats resulted in only general signs of
distress, rapid and deep respiration, at the highest dose
tested, 4.8 mg/L. Toxicity described in animals repeatedly
exposed to 0.1, 0.5 or 2.0 mg/L of the compound for two
weeks include slightly increased platelet counts, and lower
serum cholesterol in the group exposed to 2.0 mg/L.
Slightly increased liver weights were noted in the groups
exposed to 0.5 or 2.0 mg/L. All remaining animals were
normal after a 14-day recovery period.

INGESTION

When a massive dose was administered to the dog (5,000
mg/kg), incoordination, salivation, vomiting, weakness,
lacrimation and dilated pupils were observed. Toxicity
described in animals repeatedly exposed to near lethal doses

(HAZARDS IDENTIFICATION - Continued)

included liver changes, increased liver, adrenal and heart weights, and decreased kidney and spleen weights. In another study, body weights were lower and changes were noted in the liver, kidneys and thyroids in rats repeatedly fed 2,500 ppm in the diet for 90 days. Dogs fed 50, 250 or 1,250 ppm of the compound for two years had no evidence of toxicity in any exposure group. Rats fed the same doses of the compound for two years had lower weight gain, and there were suggestions of slight thyroid effects, focal hyperplasia, in the high dose group. Mice that were administered 250, 1,250 or 5,000 ppm in the diet for 18 months demonstrated reduced growth rates at 1,250 ppm in females and at 5,000 ppm in males. Higher mortality was noted among female mice in the high dose group. Increased incidences of naturally occurring changes in aging mice, including testicular tubule atrophy and liver effects, were observed at the higher doses. An increase in total liver tumors that was above the normal background incidence was observed in high-dose male mice. This response in male mice is considered only as limited evidence of a carcinogenic response in the species. The weight of the scientific data for Bromacil suggests that this is not indicative of a similar response in female mice, other laboratory animals or in man.

Additional animal testing indicated that this compound was not teratogenic and was not uniquely toxic to the conceptus. No reproductive effects were observed in rats exposed to 250 ppm in the diet for three generations. The compound does not produce heritable genetic damage in animals. Most studies for genetic damage in mammalian and bacterial cells in culture were also negative.

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

(HAZARDS IDENTIFICATION - Continued)

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.

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.

FIRST AID MEASURES

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 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 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 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.

FIRE FIGHTING MEASURES

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.

ACCIDENTAL RELEASE MEASURES

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.

HANDLING AND STORAGE

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.

EXPOSURE CONTROLS/PERSONAL PROTECTION

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.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such 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.

PHYSICAL AND CHEMICAL PROPERTIES

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.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY

For the active ingredient Bromacil:

96 hr LC50 Rainbow trout, .36 ppm
96 hr LC50 Bluegill sunfish, .127 ppm

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

DISPOSAL CONSIDERATIONS

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.

(DISPOSAL CONSIDERATIONS - Continued)

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.

TRANSPORTATION INFORMATION

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

* For domestic bulk shipments:

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

REGULATORY INFORMATION

U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : Yes
Fire : Yes
Reactivity : No
Pressure : No

(REGULATORY INFORMATION - Continued)

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

OTHER INFORMATION

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.

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
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