
M0000019 "HYVAR" X-L Herbicide Revised 26-NOV-1998 Printed 14-JUN-1999

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"HYVAR" is a registered 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
Transport Emergency : CHEMTREC 1-800-424-9300
Medical Emergency : 1-800-441-3637

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

Potential Health Effects

WARNING! Harmful or fatal if swallowed. Causes eye irritation. May irritate nose, throat and skin.

Oral LD50: 1,414 mg/kg (rats)
Considered slightly toxic.

Dermal LD50: >2,000 mg/kg (rabbits)
Moderately toxic.

Inhalation: 1 hour LC50 >10 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 mild 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 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

Material Safety Data Sheet
(HAZARDS IDENTIFICATION - Continued)

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 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

(HAZARDS IDENTIFICATION - Continued)

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

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.

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)

Do not get in eyes. Avoid breathing vapors or mist. Avoid contact with skin. Avoid contact with 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 (Physical Aspects)

Keep away from heat, sparks and flames.

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.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

Personal Protective Equipment

No personal protective equipment is specified as required when using this product according to Label directions.

The protective equipment recommended below applies for industrial handling and formulation only:

Wear safety glasses. Wear coverall chemical splash goggles and face shield when the possibility exists for eye and face contact due to splashing or spraying of material.

Where there is potential for skin contact have available and wear as appropriate, impervious clothing such as gloves, apron, boots, coveralls.

Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

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
Notice of Intended Changes (1998)
200 ppm, 8 Hr. TWA, Skin, A4
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

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

Incompatible with acids and amines, especially primary amines.

(STABILITY AND REACTIVITY - Continued)

Decomposition

Decomposes with heat.

Polymerization

Polymerization will not occur.

ECOLOGICAL INFORMATION

Ecotoxicological Information

Aquatic Toxicity

Bromacil Technical

72 hour LC50, Rainbow Trout: 38 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.

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.

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

(TRANSPORTATION INFORMATION - Continued)

* 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

ADDITIONAL REGULATORY INFORMATION

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

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.

(Continued)

Responsibility for MSDS : DuPont
Address : Agricultural Products
Wilmington, DE 19898
Telephone : 800-441-7515

Indicates updated section.

End of MSDS