



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

1/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name HYVAR® X-L HERBICIDE

Product code (UVP) 84078778

SDS Number 102000030321

EPA Registration No. 432-1548

Relevant identified uses of the substance or mixture and uses advised against

Use Herbicide

Restrictions on use See product label for restrictions.

Information on supplier

Supplier Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Responsible Department Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577

Product Information Telephone Number 1-800-331-2867

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity(Oral): Category 4

Eye irritation: Category 2B

Skin irritation: Category 2

Flammable liquids: Category 3

Specific target organ toxicity - repeated exposure: Category 1

Carcinogenicity: Category 2



Signal word: Danger

Hazard statements

Flammable liquid and vapour.



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

2/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Causes damage to organs (liver) through prolonged or repeated exposure.
Harmful if swallowed.
Causes skin irritation.
Causes eye irritation.
Suspected of causing cancer.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF exposed or concerned: Get medical advice/ attention.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Specific treatment (see supplemental first aid instructions on this label).
Get medical advice/attention if you feel unwell.
IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
Rinse mouth.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Bromacil	314-40-9	21.4
Ethanediol	107-21-1	32.1
Ethanol	64-17-5	6.1
Methanol	67-56-1	3.9



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

3/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
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 physician or poison control center immediately.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
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 physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. 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. Do not leave victim unattended.
Most important symptoms and effects, both acute and delayed	
Symptoms	To date no symptoms are known.
Indication of any immediate medical attention and special treatment needed	
Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	High volume water jet

Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Evacuate personnel to safe areas. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Do not allow run-off from fire fighting to enter drains or water courses.



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

4/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Flash point	44 °C
Autoignition temperature	410 °C / 770 °F
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Evacuate and isolate spill area. Remove all sources of ignition. Use personal protective equipment.

Methods and materials for containment and cleaning up

Methods for cleaning up Dike area to prevent runoff. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Decontaminate tools and equipment following cleanup. Contaminated soil may have to be removed and disposed.

Additional advice Do not allow to enter soil, waterways or waste water canal.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Advice on protection against fire and explosion Keep away from heat and sources of ignition. Vapours may form explosive mixture with air. Take measures to prevent the build up of electrostatic charge.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove contaminated clothing immediately and dispose of safely. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

5/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Requirements for storage areas and containers

Store in original container and out of the reach of children, preferably in a locked storage area. Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Bromacil	314-40-9	10 mg/m3 (TWA)	02 2012	ACGIH
Bromacil	314-40-9	10 mg/m3/1 ppm (REL)	2010	NIOSH
Bromacil	314-40-9	10 mg/m3/1 ppm (TWA)	1989	OSHA Z1A
Bromacil	314-40-9	10 mg/m3/1 ppm (TWA)	06 2008	TN OEL
Bromacil	314-40-9	10ug/m3 (AN ESL)	07 2011	TX ESL
Bromacil	314-40-9	100ug/m3 (ST ESL)	07 2011	TX ESL
Bromacil	314-40-9	10ppb (ST ESL)	07 2011	TX ESL
Bromacil	314-40-9	1ppb (AN ESL)	07 2011	TX ESL
Bromacil	314-40-9	10 mg/m3/1 ppm (TWA PEL)	08 2010	US CA OEL
Ethanediol (Aerosol.)	107-21-1	100 mg/m3 (CEILING)	02 2012	ACGIH
Ethanediol (Inhalable fraction and vapor.)	107-21-1	10 mg/m3 (TWA)	02 2014	ACGIH NIC
Ethanediol	107-21-1	125 mg/m3/50 ppm (CEILING)	1989	OSHA Z1A
Ethanediol	107-21-1	125 mg/m3/50 ppm (CEILING)	06 2008	TN OEL
Ethanediol	107-21-1	260ug/m3 (ST ESL)	03 2014	TX ESL
Ethanediol	107-21-1	26ug/m3 (AN ESL)	03 2014	TX ESL
Ethanediol	107-21-1	100ppb (ST ESL)	03 2014	TX ESL
Ethanediol	107-21-1	10ppb (AN ESL)	03 2014	TX ESL
Ethanediol (Vapor.)	107-21-1	100 mg/m3/40 ppm (CEILING)	08 2010	US CA OEL



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

6/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Ethanediol (Vapor.)	107-21-1	10 ppm (TWA)		OES BCS*
Ethanediol (Aerosol.)	107-21-1	10 mg/m3 (TWA)		OES BCS*
Ethanol	64-17-5	1,000 ppm (STEL)	02 2012	ACGIH
Ethanol	64-17-5	1,900 mg/m3/1,000 ppm (REL)	2010	NIOSH
Ethanol	64-17-5	1,900 mg/m3/1,000 ppm (PEL)	02 2006	OSHA Z1
Ethanol	64-17-5	1,900 mg/m3/1,000 ppm (TWA)	1989	OSHA Z1A
Ethanol	64-17-5	1,900 mg/m3/1,000 ppm (TWA)	06 2008	TN OEL
Ethanol	64-17-5	1010ppb (ST ESL)	02 2013	TX ESL
Ethanol	64-17-5	1000ppb (AN ESL)	07 2011	TX ESL
Ethanol	64-17-5	1910ug/m3 (ST ESL)	02 2013	TX ESL
Ethanol	64-17-5	1880ug/m3 (AN ESL)	07 2011	TX ESL
Ethanol	64-17-5	1,900 mg/m3/1,000 ppm (TWA PEL)	08 2010	US CA OEL
Ethanol	64-17-5	500 ppm (TWA)		OES BCS*
Methanol	67-56-1	250 ppm (STEL)	02 2012	ACGIH
Methanol	67-56-1	200 ppm (TWA)	02 2012	ACGIH
Methanol	67-56-1	325 mg/m3/250 ppm (STEL)	2010	NIOSH
Methanol	67-56-1	260 mg/m3/200 ppm (REL)	2010	NIOSH
Methanol	67-56-1	260 mg/m3/200 ppm (PEL)	02 2006	OSHA Z1
Methanol	67-56-1	260 mg/m3/200 ppm (TWA)	1989	OSHA Z1A
Methanol	67-56-1	325 mg/m3/250 ppm (STEL)	1989	OSHA Z1A
Methanol	67-56-1	260 mg/m3/200 ppm (TWA)	06 2008	TN OEL
Methanol	67-56-1	325 mg/m3/250 ppm (STEL)	06 2008	TN OEL
Methanol	67-56-1	2100ug/m3 (AN ESL)	03 2014	TX ESL
Methanol	67-56-1	3900ug/m3 (ST ESL)	03 2014	TX ESL



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

7/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Methanol	67-56-1	3000ppb (ST ESL)	03 2014	TX ESL
Methanol	67-56-1	1600ppb (AN ESL)	03 2014	TX ESL
Methanol	67-56-1	1,000 ppm (CEILING)	08 2010	US CA OEL
Methanol	67-56-1	325 mg/m3/250 ppm (STEL)	08 2010	US CA OEL
Methanol	67-56-1	260 mg/m3/200 ppm (TWA PEL)	08 2010	US CA OEL
Methanol	67-56-1	200 ppm (TWA)		OES BCS*

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection

Chemical resistant nitrile rubber gloves

Eye protection

Safety glasses with side-shields
or
Goggles

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	light brown to yellow
Physical State	liquid
Odor	alcoholic
Odour Threshold	no data available
pH	11.2 - 12.2



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

8/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	1.12 g/cm ³
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	soluble
Minimum Ignition Energy	not applicable
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	not applicable
Viscosity	no data available
Flash point	44 °C
Autoignition temperature	410 °C / 770 °F
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	no data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Vapours may form explosive mixture with air.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Acids, Amines
Hazardous decomposition products	Thermal decomposition can lead to release of: Carbon oxides Methanol Ethanol

SECTION 11: TOXICOLOGICAL INFORMATION



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

9/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Exposure routes Ingestion, Skin Absorption, Eye contact

Immediate Effects

Eye Causes eye irritation.

Skin May be harmful if absorbed through skin.

Ingestion Harmful if swallowed.

Information on toxicological effects

Acute oral toxicity LD50 (female rat) 1,414 mg/kg
LD50 (male rat) 3,927 mg/kg

Acute inhalation toxicity LC50 (rat) > 5.0 mg/l
Exposure time: 4 h

Acute dermal toxicity LD50 (rat) > 5,000 mg/kg

Skin irritation Moderate skin irritation. (rabbit)

Eye irritation Moderate eye irritation. (rabbit)

Sensitisation Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity

Methanol did not cause specific target organ toxicity in experimental animal studies.
Ethanol did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Methanol was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Ethanol was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Methanol was not carcinogenic in lifetime feeding studies in rats and mice.
Sufficient evidence is available for carcinogenicity of alcoholic beverages in humans.

ACGIH

Bromacil	314-40-9	Group A3
Ethanediol	107-21-1	Group A4
Ethanol	64-17-5	Group A3

NTP

None.

OSHA

None.

Assessment toxicity to reproduction

Methanol did not cause reproductive toxicity in a two-generation study in rats.
Ethanol caused reproduction toxicity in generation studies in rats only at dose levels also toxic to the parent animals.

Assessment developmental toxicity



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

10/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Methanol caused developmental toxicity only at dose levels toxic to the dams.
Ethanol caused developmental toxicity only at dose levels toxic to the dams.

Further information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).
The information is derived from the properties of the individual components.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Lepomis macrochirus (Bluegill sunfish)) 127 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient bromacil. LC50 (Oncorhynchus mykiss (rainbow trout)) 36 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient bromacil.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 119 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient bromacil.
Toxicity to aquatic plants	ErC50 (Raphidocelis subcapitata (freshwater green alga)) 0.017 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient bromacil.
Biodegradability	Methanol: rapidly biodegradable Ethanol: rapidly biodegradable
Koc	Methanol: Koc: 1
Bioaccumulation	Methanol: Bioconcentration factor (BCF) < 10 Does not bioaccumulate. Ethanol: Does not bioaccumulate.
Mobility in soil	Methanol: Highly mobile in soils
Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods



HYVAR® X-L HERBICIDE

Version 2.0 / USA
10200030321

11/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Product	Do not contaminate water, food, or feed by disposal. Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility. Dispose of contents/container in accordance with local regulation.
Contaminated packaging	Empty residue into application equipment. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke. Follow advice on product label and/or leaflet.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR

NA-Number	1993
Packaging group	III
Proper shipping name	COMBUSTIBLE LIQUID, N.O.S. (ETHANOL, METHANOL)
RQ	Reportable Quantity is reached with 15,576 lb of product.

IMDG

UN number	1993
Class	3
Packaging group	III
Marine pollutant	NO
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (ETHANOL, METHANOL SOLUTION)

IATA

UN number	1993
Class	3
Packaging group	III
Environm. Hazardous Mark	NO
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (ETHANOL, METHANOL SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-1548



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

12/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

US Federal Regulations

TSCA list

Ethanediol	107-21-1
Ethanol	64-17-5
Methanol	67-56-1

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Bromacil	314-40-9
Ethanediol	107-21-1
Methanol	67-56-1

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Methanol	67-56-1	Developmental toxin.
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US State Right-To-Know Ingredients

Bromacil	314-40-9	CA, MN, NJ, RI
Ethanediol	107-21-1	CA, IL, MN, NJ, RI
Ethanol	64-17-5	CA, CT, MN
Methanol	67-56-1	CA, CT, IL, MN, NJ, RI

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

Ethanediol	107-21-1	5,000 lbs
Methanol	67-56-1	5,000 lbs

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

Ethanediol	107-21-1
Methanol	67-56-1

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:



HYVAR® X-L HERBICIDE

Version 2.0 / USA
102000030321

13/13
Revision Date: 09/01/2015
Print Date: 09/01/2015

Signal word: Caution!

Hazard statements: Harmful if swallowed or absorbed through skin.
Causes eye irritation.
Avoid contact with skin, eyes and clothing.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
CAS-Nr.	Chemical Abstracts Service number
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	US. IARC Monographs on Occupational Exposures to Chemical Agents
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 2 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 2 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: New Safety Data Sheet.

Revision Date: 09/01/2015

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