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

Product identifier
Trade name ETHREL® LIQUID PLANT GROWTH REGULATOR
Product code (UVP) 05927285
SDS Number 102000004255
PCP Registration No. 11580

Relevant identified uses of the substance or mixture and uses advised against
Use Growth regulator, Herbicide
Restrictions on use See product label for restrictions.

Information on supplier
Supplier Bayer CropScience Inc
#200, 160 Quarry Park Blvd, SE
Calgary, Alberta T2C 3G3
Canada
Responsible Department Email: SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classified in accordance with Part 2 of the Hazardous Products Regulations
Serious eye damage: Category 1
Acute toxicity(Inhalation): Category 4

Labelling in accordance with Part 3 of the Hazardous Products Regulations

Signal word: Danger
Hazard statements
Causes serious eye damage.
Harmful if inhaled.

Precautionary statements
Wear eye protection/ face protection.
Avoid breathing mist and spray. 
Avoid breathing vapours. 
Use only outdoors or in a well-ventilated area. 
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 
Immediately call a POISON CENTER/doctor/physician. 
IF INHALED: Remove person to fresh air and keep comfortable for breathing. 
Call a POISON CENTER/doctor/physician if you feel unwell.

Hazards Not Otherwise Classified (HNOC) 
No physical hazards not otherwise classified. 
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Concentration % by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethephon</td>
<td>16672-87-0</td>
<td>21.7</td>
</tr>
</tbody>
</table>

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 
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. Move to fresh air. Keep patient warm and at rest.

Skin contact 
Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately. Take off contaminated clothing and shoes 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.

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
Risks

Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treatment

There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

After oral ingestion of undiluted ethephon, treatment must follow the regimens for acid ingestion. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable

Water spray, Carbon dioxide (CO2), Foam, Dry powder

Unsuitable

None known.

Special hazards arising from the substance or mixture

In the event of fire the following may be released: Carbon monoxide (CO), Hydrogen chloride (HCl), Nitrogen oxides (NOx)

Advice for firefighters

Special protective equipment for firefighters

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information

Do not allow run-off from fire fighting to enter drains or water courses. Use appropriate extinguishing media for material that is supplying fuel.

Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point

No data available

Auto-ignition temperature

No data available

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: Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up
Methods for cleaning up: Recover the product by pumping, suction or absorption using a dry and inert absorbent clay. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean floors and contaminated objects with plenty of water. Decontaminate tools and equipment following cleanup.

Additional advice: Use personal protective equipment. If material is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

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: Use only in area provided with appropriate exhaust ventilation.
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 soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers: Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Protect from freezing.

Advice on common storage: Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethephon</td>
<td>16672-87-0</td>
<td>1.4 mg/m3 (TWA)</td>
<td></td>
<td>OES BCS*</td>
</tr>
</tbody>
</table>
*OES BCS: Internal Bayer AG, Crop Science Division "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, in case of increased risk, also a face shield or Splash 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.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**
colourless to brown

**Physical State**
Liquid

**Odor**
characteristic

**Odour Threshold**
No data available

**pH**
ca. 0.8 at 100 % (23 °C)
Determined in the undiluted form.

**Vapor Pressure**
< 0.013 hPa at 25 °C

**Vapor Density (Air = 1)**
No data available

**Specific Gravity**
1.106 at 25 °C

**Density**
ca. 1.11 g/cm³ at 20 °C

**Evaporation rate**
No data available

**Boiling Point**
No data available

**Melting / Freezing Point**
-5 °C / 23 °F

**Water solubility**
soluble

**Minimum Ignition Energy**
Not applicable

**Decomposition temperature**
170 °C

**Partition coefficient: n-octanol/water**
No data available
SAFETY DATA SHEET

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Viscosity: No data available
Flash point: No data available
Auto-ignition temperature: No data available
Lower explosion limit: No data available
Upper explosion limit: No data available
Explosivity: Not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity
Thermal decomposition: 170 °C
Possibility of hazardous reactions: Corrodes metals in the presence of water or moisture. Risk of ethylene emission in case of increasing pH. No dangerous reaction known under conditions of normal use.
Conditions to avoid: Exposure to moisture. Heat, flames and sparks.
Incompatible materials: Zinc, Iron, Copper, Strong oxidizing agents, Bases, Mild steel, Aluminium
Hazardous decomposition products: No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes: Eye contact, Skin contact, Ingestion, Inhalation
Immediate Effects
Eye: Corrosive - causes irreversible eye damage.
Skin: Harmful if absorbed through skin.
Ingestion: Harmful if swallowed.
Inhalation: Harmful if inhaled. May cause irritation of the mucous membranes.

Information on toxicological effects
Acute oral toxicity: LD50 (male/female combined Rat) > 5,000 mg/kg
Acute inhalation toxicity: LC50 (male/female combined Rat) 4.5 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. (actual)
Acute dermal toxicity: LD50 (male/female combined Rabbit) > 2,000 mg/kg

Skin irritation: Moderate skin irritation. (Rabbit)

Eye irritation: Corrosive (Rabbit)

Assessment STOT Specific target organ toxicity – repeated exposure

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

Assessment mutagenicity

Ethephon was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Ethephon was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH
None.

NTP
None.

IARC
None.

OSHA
None.

Assessment toxicity to reproduction

Ethephon did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Ethephon did not cause developmental toxicity in rats and rabbits.

Further information

Acute toxicity studies have been bridged from a similar formulation(s).
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)) 720 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient ethephon.

Toxicity to aquatic invertebrates: EC50 (Daphnia magna (Water flea)) > 1,000 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient ethephon.
SAFETY DATA SHEET

ETHREL® LIQUID PLANT GROWTH REGULATOR

Biodegradability
Ethephon:
Not rapidly biodegradable

Koc
Ethephon: Koc: 2540

Bioaccumulation
Ethephon:
Does not bioaccumulate.

Mobility in soil
Ethephon: Slightly 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
Product
Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law.
Dispose in accordance with all local, state/provincial and federal regulations.
Follow advice on product label and/or leaflet.

Contaminated packaging
Triple rinse containers.
Puncture container to avoid re-use.
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.

SECTION 14: TRANSPORT INFORMATION

TDG
UN number 3265
Labels 8
Packaging group III
Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON)

49CFR
UN number 3265
Class 8
Packaging group III
Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON)

IMDG
SAFETY DATA SHEET

ETHREL® LIQUID PLANT GROWTH REGULATOR

Version 2.0 / CDN 102000004255
Revision Date: 01/12/2017
Print Date: 01/13/2017

UN number 3265
Class 8
Packaging group III
Marine pollutant NO
Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON SOLUTION)
Segregation group according to 5.4.1.5.11.1 IMDG SEGREGATION GROUP 1 - ACIDS

IATA
UN number 3265
Class 8
Packaging group III
Environm. Hazardous Mark NO
Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON 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.

Further Information
In accordance with TDG regulations 3.6(3) and 4.22 this product does not require marine pollutant safety marks or shipping documentation reference when transported on land by road or rail.

Freight Classification: INHIBITORS, MODIFIERS OR REGULATORS, plant growth

SECTION 15: REGULATORY INFORMATION

PCP Registration No. 11580
US Federal Regulations
TSCA list None.
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 None.
US States Regulatory Reporting
CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.
SAFETY DATA SHEET

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Version 2.0 / CDN
102000004255

Revision Date: 01/12/2017
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US State Right-To-Know Ingredients
None.

Canadian Regulations
Canadian Domestic Substance List
None.

Environmental
CERCLA
None.
Clean Water Section 307 Priority Pollutants
None.
Safe Drinking Water Act Maximum Contaminant Levels
None.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms
49CFR                      Code of Federal Regulations, Title 49
ACGIH                     US. ACGIH Threshold Limit Values
ATE                       Acute toxicity estimate
CAS-Nr.                   Chemical Abstracts Service number
CERCLA                    Comprehensive Environmental Response, Compensation, and Liability Act
EINECS                    European inventory of existing commercial substances
ELINCS                    European list of notified chemical substances
IARC                      International Agency for Research on Cancer
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 - 3    Flammability - 1    Instability - 0    Others - none

    Health - 3    Flammability - 0    Physical Hazard - 0    PPE -

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

Reason for Revision: Revised according to the current Canadian WHMIS standard (WHMIS 2015).

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.
Revision Date: 01/12/2017

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