

**Material Safety Data Sheet****ETHREL® BRAND ETHEPHON PLANT REGULATOR**

MSDS Number: 102000004255

MSDS Version 1.1

Revision Date: 08/19/2010

**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product name** ETHREL® BRAND ETHEPHON PLANT REGULATOR  
**MSDS Number** 102000004255  
**PCP Registration No.** 264-267

Bayer CropScience Inc  
#200, 160 Quarry Park Blvd, SE  
Calgary, Alberta T2C 3G3  
Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)  
For Product Information call: 1-888-283-6847

**SECTION 2. HAZARDS IDENTIFICATION**

*NOTE: Please refer to Section 11 for detailed toxicological information.*

**Emergency Overview**

Danger! Corrosive - causes irreversible eye damage. Hazard to humans and domestic animals. Harmful if swallowed, inhaled or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Irritation of mucous membranes. Do not breathe vapours or spray mist.

**Physical State** liquid

**Odor** characteristic

**Appearance** colourless to amber

**Exposure routes** Inhalation, Skin contact, Ingestion, Eye contact

**Immediate Effects****Eye**

Corrosive - causes irreversible eye damage. Liquid or vapor can cause irritation, redness, tearing. Eye injury may persist for several days. Do not get in eyes.

**Skin**

May cause irritation, redness, swelling on prolonged contact. Avoid contact with skin.

**Ingestion**

May cause burns to mouth and esophagus, chest pain, abdominal pain. Harmful if swallowed.

**Inhalation**

Mists may cause upper respiratory tract irritation, coughing, sore throat. Irritation of mucous membranes. Harmful if inhaled.

**Medical Conditions****Aggravated by Exposure**

Skin contact may aggravate existing skin disease. Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.



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**Potential Environmental Effect**

Toxic to aquatic organisms. This product may cause adverse effects on non-target plants.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Ethephon	16672-87-0	21.70

## SECTION 4. FIRST AID MEASURES

<b>General</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Eye</b>	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.
<b>Skin</b>	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.
<b>Ingestion</b>	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.
<b>Inhalation</b>	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.
<b>Notes to physician</b>	
<b>Hazards</b>	Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
<b>Treatment</b>	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. FIRE FIGHTING MEASURES

<b>Flash point</b>	not applicable
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**Autoignition temperature** no data available**Lower Flammability Limit** no data available**Upper Flammability Limit** no data available**Explosiveness** no data available

**Fire and Explosion Hazards** In the event of fire the following may be released:  
Carbon monoxide (CO)  
Hydrogen chloride (HCl)  
nitrogen oxides (NOx)

**Suitable extinguishing media** Water spray, Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

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

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

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

**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** Do not allow to enter soil, waterways or waste water canal. Information regarding waste disposal, see section 13. Information regarding personal protective equipment, see section 8. Use personal protective equipment.

**SECTION 7. HANDLING AND STORAGE**

**Handling procedures** No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice.

Avoid contact with skin, eyes and clothing.

**Storing Procedures** Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Protect from freezing.

Keep away from food, drink and animal feedingstuffs.



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**Work/Hygienic Procedures**

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.

**Min/Max Storage Temperatures**

Recommended minimum transport/storage temperature: -7 °C / 19 °F  
Recommended maximum transport/storage temperature: 40 °C / 104 °F

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**General Protection**

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. Eye wash facility and safety shower should be available. Train employees in safe use of the product.

**Eye/Face Protection**

Safety glasses, in case of increased risk, also a face shield  
or  
splash goggles

**Hand protection**

Chemical resistant nitrile rubber gloves

**Body Protection**

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

**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.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

colourless to amber

**Physical State**

liquid

**Odor**

characteristic

**pH**

ca. 0.8 (100 %) 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/cm<sup>3</sup> at 20 °C

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<b>Evaporation rate</b>	no data available
<b>Boiling Point</b>	no data available
<b>Melting / Freezing Point</b>	-5 °C / 23 °F
<b>Water solubility</b>	soluble
<b>Decomposition temperature</b>	170 °C
<b>Partition coefficient: n-octanol/water</b>	no data available

**SECTION 10. STABILITY AND REACTIVITY**

<b>Conditions to avoid</b>	Exposure to moisture. Heat, flames and sparks.
<b>Incompatibility</b>	Zinc Iron Copper Strong oxidizing agents Bases Mild steel Aluminium
<b>Hazardous Decomposition Products</b>	Thermal decomposition Carbon monoxide Carbon dioxide (CO <sub>2</sub> ) Hydrogen chloride (HCl) nitrogen oxides (NO <sub>x</sub> )
<b>Hazardous reactions</b>	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.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute inhalation and sensitization studies were bridged from studies on the technical-grade active ingredient, ethephon. All other acute toxicity data have been bridged from similar formulations containing similar percentages of ethephon. The non-acute information pertains to technical-grade ethephon.

<b>Acute oral toxicity</b>	male/female combined rat: LD50: > 5,000 mg/kg
<b>Acute dermal toxicity</b>	male/female combined rabbit: LD50: > 2,000 mg/kg

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<b>Acute inhalation toxicity</b>	male/female combined rat: LC50: 4.5 mg/l Exposure time: 4 h The value mentioned relates to the active ingredient. Determined in the form of liquid aerosol. (actual)
	male/female combined rat: LC50: 18.0 mg/l Exposure time: 1 h The value mentioned relates to the active ingredient. Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50. (actual)
<b>Skin irritation</b>	rabbit: Moderate skin irritation.
<b>Eye irritation</b>	rabbit: corrosive
<b>Sensitisation</b>	guinea pig: Non-sensitizing. The value mentioned relates to the active ingredient.
<b>Chronic toxicity</b>	Ethephon caused cholinesterase inhibition and/or clinical signs of toxicity in chronic toxicity studies in rats and dogs.
<b>Assessment Carcinogenicity</b> Ethephon was not carcinogenic in lifetime feeding studies in rats and mice.	
<b>ACGIH</b> None.	
<b>NTP</b> None.	
<b>IARC</b> None.	
<b>OSHA</b> None.	
<b>Reproductive toxicity</b>	REPRODUCTION: Ethephon was not a reproductive toxicant in a two-generation study in rats. Toxicity in the offspring occurred at doses producing systemic toxicity in parental animals.
	DEVELOPMENTAL TOXICITY: Ethephon was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed but were considered secondary to maternal toxicity.
<b>Neurotoxicity</b>	Ethephon did not cause delayed neurotoxicity in hens. Ethephon was not a neurotoxicant in acute and subchronic neurotoxicity screening studies in rats.
<b>Mutagenicity</b>	Ethephon was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

**SECTION 12. ECOLOGICAL INFORMATION**

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**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.

**Ecological Information**

If more information is required, call the product information number listed in Section 1.

**SECTION 13. DISPOSAL CONSIDERATIONS****General Disposal Guidance**

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

**Container Disposal**

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.

**SECTION 14. TRANSPORT INFORMATION****TDG**

UN-Number	<b>3265</b>
Labels	8
Packaging group	III
Description of the goods	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON)

**49CFR**

UN-Number	<b>3265</b>
Class	8
Packaging group	III
Description of the goods	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON)

**IMDG**

UN-Number	<b>3265</b>
Class	8
Packaging group	III
Description of the goods	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON SOLUTION)

**IATA**

UN-Number	<b>3265</b>
Class	8
Packaging group	III
Description of the goods	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

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(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.

Freight Classification: INHIBITORS, MODIFIERS OR REGULATORS, plant growth

**SECTION 15. REGULATORY INFORMATION**

PCP Registration No. 264-267

**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.

**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.





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#### SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 3      Flammability - 1      Reactivity - 0      Others - none

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

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: Updated due to new system and numbering scheme. The following sections have been revised: Section 14: Transport Information.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 08/19/2010

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