



Material Safety Data Sheet
ETHREL® BRAND ETHEPHON PLANT REGULATOR

MSDS Number: 102000004255
 MSDS Version 2.1
 Revision Date: 08/19/2010

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

Bayer CropScience
 2 T.W. Alexander Drive
 Research Triangle PK, NC 27709
 USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-866-99BAYER (1-866-992-2937)

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.



Material Safety Data Sheet

ETHREL® BRAND ETHEPHON PLANT REGULATOR

MSDS Number: 102000004255
MSDS Version 2.1

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

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	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.
Skin	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.
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.
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.
Notes to physician	
Hazards	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. FIRE FIGHTING MEASURES

Flash point	not applicable
Autoignition temperature	no data available



Material Safety Data Sheet

ETHREL® BRAND ETHEPHON PLANT REGULATOR

MSDS Number: 102000004255
MSDS Version 2.1

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 (CO2), 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.

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.



Material Safety Data Sheet

MSDS Number: 102000004255
MSDS Version 2.1

ETHREL® BRAND ETHEPHON PLANT REGULATOR

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 ³ at 20 °C
Evaporation rate	no data available



Material Safety Data Sheet

ETHREL® BRAND ETHEPHON PLANT REGULATOR

MSDS Number: 102000004255
MSDS Version 2.1

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

SECTION 10. STABILITY AND REACTIVITY

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

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.

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



Material Safety Data Sheet

MSDS Number: 102000004255
MSDS Version 2.1

ETHREL® BRAND ETHEPHON PLANT REGULATOR

Acute inhalation toxicity 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)

Skin irritation rabbit: Moderate skin irritation.

Eye irritation rabbit: corrosive

Sensitisation guinea pig: Non-sensitizing. The value mentioned relates to the active ingredient.

Chronic toxicity Ethephon caused cholinesterase inhibition and/or clinical signs of toxicity in chronic toxicity studies in rats and dogs.

Assessment Carcinogenicity

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

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Reproductive toxicity 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.

Neurotoxicity Ethephon did not cause delayed neurotoxicity in hens. Ethephon was not a neurotoxicant in acute and subchronic neurotoxicity screening studies in rats.

Mutagenicity 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



Material Safety Data Sheet

ETHREL® BRAND ETHEPHON PLANT REGULATOR

MSDS Number: 102000004255
MSDS Version 2.1

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.

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

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

IMDG

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

IATA

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



Material Safety Data Sheet

ETHREL® BRAND ETHEPHON PLANT REGULATOR

MSDS Number: 102000004255
MSDS Version 2.1

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

EPA 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.



Material Safety Data Sheet

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MSDS Number: 102000004255
MSDS Version 2.1

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

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

HMS (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.

Revision Date: 08/19/2010

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