

SAFETY DATA SHEET



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

1/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

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

Product identifier

Trade name FLOREL® PLANT GROWTH REGULATOR

Product code (UVP) 05927285

SDS Number 102000004255

PCP Registration No. 29593

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

Emergency telephone no.

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

Product Information Telephone Number 1-888-283-6847

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.

SAFETY DATA SHEET



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

2/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

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

Hazardous Component Name	CAS-No.	Concentration % by weight
Ethephon	16672-87-0	21.7

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

SAFETY DATA SHEET



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

3/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

Risks	Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
Treatment	<p>There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.</p> <p>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.</p>

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 (NO_x)

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

SAFETY DATA SHEET



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

4/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

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

Components	CAS-No.	Control parameters	Update	Basis
Ethephon	16672-87-0	1.4 mg/m ³ (TWA)		OES BCS*

SAFETY DATA SHEET



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

5/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

*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.

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/cm ³ 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



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

6/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

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)

SAFETY DATA SHEET



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

7/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

	The value mentioned relates to the active ingredient.
Acute dermal toxicity	LD50 (male/female combined Rabbit) > 2,000 mg/kg
Skin irritation	Moderate skin irritation. (Rabbit)
Eye irritation	corrosive (Rabbit)
Sensitisation	Non-sensitizing. (Guinea pig) The value mentioned relates to the active ingredient.

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



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

8/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

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



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

9/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

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.

SECTION 15: REGULATORY INFORMATION

PCP Registration No. 29593

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

SAFETY DATA SHEET



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

10/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

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

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

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

SAFETY DATA SHEET



FLOREL® PLANT GROWTH REGULATOR

Version 2.0 / CDN
102000004255

11/11
Revision Date: 01/12/2017
Print Date: 01/12/2017

Revision Date: 01/12/2017

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.