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

Product identifier
Trade name FLOREL® BRAND GROWTH REGULATOR
EPA Registration No. 54705-8

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

Information on supplier
Distributed by Lawn and Garden Products, Inc.
PO Box 35000
Fresno, California 93745
United States

Responsible Department
Emergency telephone no. (559) 994-9144
Emergency Telephone Number (24hr/7 days) Chemtrec – 1-800-424-9300
Product Information Telephone Number 1-559-499-2100

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Eye irritation: Category 2B
Acute toxicity (Inhalation): Category 4

Signal word: Warning

Hazard statements
Causes eye irritation.
Harmful if inhaled.

Precautionary statements
Wash thoroughly after handling.
Avoid breathing mist and spray.
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. 
If eye irritation persists: Get medical advice/ attention. 
IF INHALED: Remove person to fresh air and keep comfortable for breathing. 
Call a POISON CENTER/doctor/physician if you feel unwell. 

Other hazards 
No other hazards known. 

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>3.90</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 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 No symptoms known or expected.

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 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 Water spray, Foam, Carbon dioxide (CO2), Dry chemical
Unsuitable None known.

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 Extinguishing measures to suit surroundings. 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
Autoignition 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. Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations. Decontaminate tools and equipment following cleanup.

Additional advice Use personal protective equipment. 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
Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

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. Remove soiled clothing immediately and clean thoroughly before using again. Before removing gloves clean them with soap and water. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers
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. Store in original container and out of the reach of children, preferably in a locked storage area.

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>
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</thead>
<tbody>
<tr>
<td>Ethephon</td>
<td>16672-87-0</td>
<td>1.4 mg/m3 (OES BCS)</td>
<td></td>
<td>OES BCS*</td>
</tr>
</tbody>
</table>

*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.
Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

Hand protection
Chemical-resistant gloves made of waterproof material such as neoprene, butyl rubber, barrier laminate or nitrile rubber.

Eye protection
Tightly fitting safety goggles
**FLOREL® BRAND GROWTH REGULATOR**

**Revision Date:** 08/07/2015

### 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colourless to light brown</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid, clear</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>2.6 at 1% (23 °C) (as aqueous solution)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Vapor Density (Air = 1)</td>
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<tr>
<td>Density</td>
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<td>Evaporation rate</td>
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<td>Boiling Point</td>
<td>0 °C / 32 °F</td>
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<tr>
<td>Melting / Freezing Point</td>
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<tr>
<td>Water solubility</td>
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<tr>
<td>Minimum Ignition Energy</td>
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<td>Decomposition temperature</td>
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<tr>
<td>Partition coefficient: n-octanol/water</td>
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</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosivity</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition 170 °C

Chemical stability Stable under recommended storage conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Elevated temperatures

Incompatible materials Zinc, Strong bases, Strong acids, Strong oxidizing agents, Mild steel, Aluminium

Hazardous decomposition products No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Eye contact, Skin Absorption, Ingestion, Inhalation

Immediate Effects

Eye Moderate eye irritation.

Skin Harmful if absorbed through skin.

Information on toxicological effects

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

Acute inhalation toxicity LC50 (rat) 4.52 mg/l
Exposure time: 4 h

LC50 (rat) 18.08 mg/l
Exposure time: 1 h
Extrapolated from the 4 hr LC50.

Acute dermal toxicity LD50 (rabbit) > 2,000 mg/kg

Skin irritation No skin irritation (rabbit)

Eye irritation Minimally irritating. (rabbit)

Sensitisation Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity

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**
Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the active ingredient(s).

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**SECTION 12: ECOLOGICAL INFORMATION**

**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 allow to get into surface water, drains and ground water. 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. Drift or runoff from treated areas may adversely affect non-target plants. Apply this product as specified on the label.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

Waste treatment methods
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 in accordance with all local, state/provincial and federal regulations.
Follow advice on product label and/or leaflet.

Contaminated packaging
Do not re-use empty containers.
Triple rinse containers.
Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities.
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.
When and if this material is determined to be a waste, if discarded, this material will carry RCRA waste code(s) NON-RCRA.
State and local laws may vary and must be considered.

SECTION 14: TRANSPORT INFORMATION
According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

Freight Classification:
Inhibitors, Modifiers or Regulators, Plant Growth, Liquid.
NMFC 101685, LTL Class 65

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 54705-8
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.

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:

Signal word: Caution!

Hazard statements: Harmful if absorbed through skin.
Causes eye irritation.
Avoid contact with skin, eyes and clothing.
Wash thoroughly with soap and water after handling.

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 Organization
NFPA 704 (National Fire Protection Association):

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>none</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>

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

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 08/07/2015 (Bay-07/07/2015)

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.

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