

Release LC Plant Growth Regulator Solution

SDS# VBC-0035 Revision 1

ISSUED 02/16/16

[Classification according to OSHA; 29 CFR § Part 1910.1200, (3/12/2012)]

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY**1.1 Product Identifier****MATERIAL NAME:** Release LC Plant Growth Regulator Solution**Synonyms:** Ralex Plant Growth Regulator**EPA Reg. No.:** 73049-42**Code Number:** 34775**List Number:** 11220**Chemical Family:** Gibberellins, naturally occurring plant growth regulators**1.2 Relevant Identified Uses and Uses Advised Against****Identified Uses:** Pesticide (Plant Growth Regulator)**Uses Advised Against:** It is a violation of Federal Law to use this product in a manner inconsistent with its Pesticide labeling.**1.3 Details of the supplier of the Safety Data Sheet****Supplied By:** Valent BioSciences Corporation
870 Technology Way
Libertyville, Illinois 60048**1.4 EMERGENCY TELEPHONE NUMBERS****Emergency Health or Spill:**

Outside the United States: 651-632-6184

Within the United States: 877-315-9819

2. HAZARDS IDENTIFICATION**2.1 Classification of the Substance or Mixture**

Flammable Liquid - Category 2

Serious eye damage/eye irritation - Category 2A

Specific target organ toxicity (Single exposure) - Central nervous system - Category 3

2.2 Labeling Elements**Symbol(s)**

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Signal Word**DANGER****Hazard Statement(s)**

Highly flammable liquid and vapor
Causes serious eye irritation
May cause drowsiness or dizziness

Precautionary Statement:**Prevention**

Keep away from heat/sparks/open flames/hot surfaces. No Smoking.
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosive-proof electrical/ventilating/lighting equipment.
Use only non-spark tools
Wear protective gloves/eye protection/face protection
Take precautionary measures against static discharge
Wash hands and face thoroughly after handling
Avoid breathing mist/spray
Use only outdoors or in a well-ventilated area

Response

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use: foam, dry chemical or carbon dioxide to extinguish.
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 control center or doctor if you feel unwell.

Storage

Store in a well-ventilated place.
Keep cool.
Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/regulations.

2.3 Other Hazards

None identified.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Active Ingredients - Name	Classification	Percent
77-06-5	Gibberellic acid (GA ₃)	Eye irritant, Category 2B	4.44%

CAS #	Component Other-Ingredient Name	Classification	Percent
67-63-0	Isopropanol	Flammable liquid, Category 2; Eye irritant, Category 2A; Specific Target organ toxicity, Category 3	95.36%
Trade Secret	Other Components	Not classified	Trade Secret

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

GENERAL: In all cases of doubt, seek medical attention.

EYES: Remove from source of exposure. Flush with copious amounts of water. Remove contact lenses, if present and easy to do, after the first 5 minutes, then continue rinsing. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic /supportive care as necessary.

SKIN: Remove from source of exposure. Take off contaminated clothing. Flush with copious amounts of water. Cover irritated skin with an emollient. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

INGESTION: Remove from source of exposure. Move person to fresh air. Do NOT induce vomiting. Give large quantities of water. If signs of toxicity occur, seek medical attention. Provide symptomatic /supportive care as necessary.

INHALATION: Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary. If person is not breathing, call 911, and then give artificial respiration.

4.2 Most important Symptoms and Effects, both Acute and Delayed

Acute

Eye irritation and possible narcotic effect if ingested in sufficient quantity

Delayed

No information on significant adverse effects

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Treat symptomatically and supportively

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5. FIRE FIGHTING PROCEDURES**5.1 Extinguisher Media****Suitable Extinguisher Media**

Dry chemical, foam (Alcohol resistant foams (ATC type) are preferred), carbon dioxide, or water fog or fine mist.

Unsuitable Extinguisher Media

Do not use direct water stream. Straight or direct water steam may not be effective.

5.2 Specific Hazards Arising from the Chemical (isopropanol)

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may vent and/or rupture due to fire. When product is stored in closed containers, a flammable atmosphere can develop. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

5.3 Advice to Firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Use caution and test if material is burning before entering area. Material burns with invisible flame.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

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6. ACCIDENTAL RELEASE MEASURES**6.1 Personal Precautions, Protective Equipment and Emergency Procedures**

Where exposure level is known, wear respirator suitable for level of exposure. Where exposure level is not known, wear approved, positive pressure, self-contained respirator. In addition to the personal protection as recommended in section 8.

6.2 Environmental Precautions

Prevent from entering into soil. Keep out of drains, sewers, ditches and waterways. Avoid runoff to waterways and sewers.

6.3 Methods and Materials for Containment and Cleaning Up

Ventilate area. Wear appropriate personal protective equipment. Contain spill if possible. Ground and bond all containers and handling equipment. Recover product with inert material (earth, sand, vermiculite), place into appropriate container for disposal. Do not flush to sewer.

6.4 Reference to Other Sections

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations. See Section 13 for Disposal Considerations.

US Regulations may require reporting spills of hazardous materials: See Section 15: Regulatory Information for details on reportable quantities, if any.

7. HANDLING AND STORAGE**7.1 Precautions for Safe handling**

Ventilate. Keep away from heat, sparks and flame. Avoid breathe mist or vapor. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling. Do not eat, drink or smoke while working with product. Obey reasonable safety precautions and practice good housekeeping. For filling operations respiratory protection may be recommended particularly in enclosed areas. Do not enter confined spaces unless adequately ventilated. Never use air pressure for transferring product. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Ignition sources can include and are not limited to pilot lights, flames, smoking, sparks, heaters, electrical equipment, and static discharges. Electrically bond and ground all containers and equipment before transfer or use of material. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation.

7.2 Conditions for Safe Storage, Including and Incompatibilities

Protect against physical damage. Close containers of unused material. Store in a dry, cool, ventilated place. Store separately from reactive or combustible materials and out of direct sunlight.

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Incompatibilities

None Known

7.3 Specific End Use(s)

Pesticide, Plant Growth Regulator.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control Parameters****Component Exposure Limits**

Isopropanol	TWA	999 mg/m ³	400 ppm
	STEL	1,250 mg/m ³	500 ppm

Derived No Effect Levels (DNELs)

Isopropanol	Long-term systemic effects		
	Skin contact	319 mg/kg bw/day	
	Ingestion	26 mg/kg bw/day	
	Inhalation	89 mg/m ³	

Predicted No Effect Concentrations (PNECs)

Isopropanol	Fresh water	140 mg/l
	Marine water	140 mg/l
	Sediment	552 mg/kg d.w.
	Soil	28 mg/kg d.w.

8.2 Exposure Controls**Appropriate Engineering Controls**

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below applicable limits.

SKIN PROTECTION:

Wear impervious protective clothing, including boots and gloves. For filling operations if dust/mist is produced respiratory protection is recommended. Wear gloves made of Latex or other impervious materials. Wash thoroughly with soap and water after handling.

EYE PROTECTION:

Wear Goggles, safety glasses with side shields or full-face shield when splashing or spraying of materials is likely. If exposure causes eye discomfort, use a full face respirator.

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RESPIRATORY PROTECTION:

When there is a potential to exceed the exposure limits, use a respirator (MSHA/NIOSH approved number prefix TC-21C) or a NIOSH approved respirator with any N, P, R or HE filter. Wash thoroughly with soap and water after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on Basic Physical and Chemical Properties

Appearance/Color:	Colorless to light yellow liquid	Odor:	Rubbing alcohol
pH:	2.9% (10% slurry @ 20-25 °C)	Boiling Point:	82.0 °C (isopropanol)
Melting Point:	Not applicable (liquid)	Solubility (H ₂ O):	Miscible with water
Density:	Not Determined	Specific Gravity:	0.80 (product @ 25 °C)
Octanol/H ₂ O Coeff:	Not Determined	Evaporation Rate:	Not Determined
Auto Ignition:	399.0 °C (isopropanol)	Decomposition Temp.:	Not applicable
Flash Point.:	13°C	Kinematic Viscosity:	3.47 mm ² /s @ 20°C
Vapor Density:	2.1 (isopropanol)	Vapor Pressure:	33 mmHg @ 20 °C (isopropanol)
VOC:	94.13% EP	Flammability Class:	Flammable

10. CHEMICAL STABILITY AND REACTIVITY
10.1 Reactivity

Material does not pose a significant reactivity hazard.

10.2 Chemical Stability

Stable under ordinary conditions of use and storage. Stable at 54°C when exposed to metals and metal ions. Hydrolytically stable at pH 4, 7 and 9. Not stable in Light when in solution. Spontaneous reaction: Not possible.

10.3 Possibility of Hazardous Reactions

Does not undergo hazardous polymerization

10.4 Conditions to Avoid

Keep away from fires and sources of ignition.

10.5 Incompatible Materials

Keep away from strong oxidizing materials and strong acids.

10.6 Hazardous Decomposition Products

Carbon oxides and unidentified organic compounds.

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11. TOXICOLOGICAL INFORMATION**11.1 Information on Toxicological Effects**Likely Routes of Exposure

Inhalation: Yes
Eye Contact: Yes
Skin Contact: Yes
Ingestion: Not likely

Product (and or TGAI) ToxicologyAcute Effects

Oral Toxicity: LD₅₀ > 5,000 mg/kg bw (rat) [Limit test]
Dermal Toxicity: LD₅₀ > 2,000 mg/kg bw (rat) [Limit test]
Inhalation Toxicity: LC₅₀ > 5.67 mg/L air (rat)
Corrosiveness: Not corrosive.
Dermal Irritation: Mild dermal irritation
Ocular Irritation: Moderate-irritating, cleared by 21 days
Dermal Sensitization: Not a sensitizer (guinea pig)

Mutagenicity Information: Components of this product are not listed as mutagens. TGAI negative in chromosomal aberration, sister chromatid exchange in CHO. TGAI did NOT induce Unscheduled DNA synthesis (UDS) in Rat hepatocytes in vivo (2000 mg/kg; limit dose). TGAI negative in E-coli reverse mutation AMES test, 10,000 mcg/dish.

Carcinogenicity Information: Components of this product are not listed as carcinogenic by NTP, IARC or OSHA.

Developmental / Reproductive Toxicity: This material is not a teratogenic compound.

Special Target Organ: Central nervous system

Aspiration Hazard: Not Applicable

Repeat Dose Studies: Not performed

12. ECOLOGICAL INFORMATION**12.1 Ecotoxicity**

This product has not been tested for ecotoxicological effects. Test results for the Technical Grade Active Ingredient [TGAI] are given below.

Fish: LC₅₀ > 150 mg a.i./L (96-H, rainbow trout) [TGAI Limit test]

Bird: LC₅₀ > 2,250 mg a.i./kg bw (Acute Oral - Bobwhite Quail) [TGAI limit test]

Bird: LC₅₀ > 6,018 mg a.i./kg bw (Feeding - Bobwhite Quail) [TGAI]

Invertebrates: EC₅₀ > 488 mg a.i./L (48-H) (Daphnia) [TGAI]

Algae: Not tested, naturally occurring plant growth regulator.

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12.2 Persistence and Degradability

Naturally occurring Plant Growth regulator that has been shown in publications to be present in all plants and to degrade naturally in the environment. Active ingredient readily degraded.

Hydrolysis: Not hydrolytically active

Photolysis: DT₅₀ 34 hours (air)

DT₅₀ 0.1 days at pH 4, 2.5 days at pH 7 or 9 (aqueous)

12.3 Bioaccumulation potential

Partition coefficient n-octanol/water: In pH 2.2 buffer at 22 °C (98%); log P_{ow} = 0.72

Bio-concentration Factor (BCF): Given that the log P_{ow} for the active ingredient is much less than 3, there is no potential for bio-concentration in fatty tissues and no potential for aquatic bio-magnification.

12.4 Mobility in Soil

No data available

12.5 Results of PBT and vPvB assessment

Assessments not performed

12.6 Other adverse effects

None known

13. DISPOSAL CONSIDERATIONS**13.1 Waste Disposal Methods**

Dispose of product in accordance with federal, state, provincial, and local regulations. Prevent contamination of environment by wastes.

US EPA Waste Number & Descriptions:

There is no applicable EPA waste number. This product, if discarded, is not expected to be a characteristic or listed hazardous waste.

14. TRANSPORTATION INFORMATION**DOT**

STATUS: Regulated by DOT

UN PROPER SHIPPING NAME: UN1219 Isopropanol Solution, 3, II

REMARKS: N/A

IATA/ICA0

STATUS: Regulated

PROPER SHIPPING NAME: UN1219 Isopropanol Solution, 3, II

REMARKS: N/A

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IMO**STATUS:** Regulated**PROPER SHIPPING NAME:** UN1219 Isopropanol Solution, 3, II**REMARKS:** N/A**15. REGULATORY INFORMATION****15.1 Safety, Health and Environmental Regulations / Specific Legislation****TSCA STATUS:** N/L**CERCLA STATUS:** Not regulated as hazardous**SARA STATUS:** Acute: Yes Chronic: No Fire: Yes CDT: No**RCRA STATUS:** Not regulated as hazardous**State Right-To-Know:** Consult applicable national, state provincial or local laws to determine regulations, laws or ordinances which may be applicable.**OSHA HAZARD COMMUNICATION STANDARD:** Not defined by the OSHA Hazard Communication Standard, 29 CFR**15.2 EPA Pesticide Regulations****EPA Registration Number:** 73049-42**EPA Pesticide Label signal word:** WARNING

Product must have EPA Approved Pesticide Label attached to or accompanying all containers.

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions and limitations for its use.

**KEEP OUT OF REACH OF CHILDREN
WARNING - AVISO****PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS****WARNING**

Causes substantial but temporary eye injury. Harmful if inhaled or absorbed through skin. Do not get in eyes or on clothing. Avoid breathing vapor or spray mist, and avoid contact with skin. Wear protective eyewear (goggles or face shield). Wash thoroughly with water and soap after handling and before eating. Remove and wash contaminated clothing before reuse.

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ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

PHYSICAL OR CHEMICAL HAZARDS

FLAMMABLE! Keep away from heat and open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. Do not apply this product through any type of irrigation system.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Keep containers tightly closed when not in use. Keep away from heat and open flame.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available. If recycling is not available puncture and dispose of the container in a sanitary landfill, or by other procedures approved by state and local authorities.

16. OTHER INFORMATION**NFPA Hazard Ratings**

Health: 2
Flammability: 3
Instability: 0

HMIS Hazard Ratings

Health: 2
Flammability: 3
Instability: 0

0 = minimal
1 = slight
2 = moderate
3 = serious
4 = Extreme

REASON FOR ISSUE: Corrected the proper shipping name.
APPROVAL DATE: 02/16/16
SUPERSEDES DATE: 09/30/15

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LEGEND: N/A = Not Applicable

N/D = Not Determined

N/L = Not Listed

L = Listed

C = Ceiling

S = Short-term

(R) = Registered Trademark of Valent BioSciences

(TM) = Registered Trademark of Valent BioSciences

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This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABEL (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom"). The product label provides information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products is regulated by the EPA under the authority of FIFRA through the product label. All necessary hazard classification and appropriate precautionary use, storage, and disposal information is set forth on that label or labeling accompanying the pesticide or to which reference is made on the label. It is a violation of federal law to use an EPA-registered pesticide product in any manner inconsistent with its labeling.