SAFETY DATA SHEET

Promalin® Plant Growth Regulator Solution

SDS# VBC-0114 Revision 2

Classification according to OSHA: 29 CFR § 1910.1200, (3/12/2012)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

1.1 Product Identifier

MATERIAL NAME: Promalin® Plant Growth Regulator Solution

Synonyms: Fascination™ Plant Growth Regulator Solution

EPA Reg No.: 73049-41

Code Number: 16345, 58086

List Number: 02571, 02572

Substance Registration Number(s)[REACH]: N/A

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 FIFRA pesticide labeling.

1.3 Details of the supplier of the Safety Data Sheet

Supplied By: Valent BioSciences Corporation

870 Technology Way

Libertyville, Illinois  60048, USA

1.4 EMERGENCY TELEPHONE NUMBERS

Emergency Health or Spill:

Outside the United States: (+1) 651-632-6184

Within the United States: 877-315-9819

2. HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Acute Aquatic Toxicity – Category 3 (Lemna gibba).

2.2 Labeling Elements

Symbol(s)

None

Signal Word

WARNING

Hazard Statement(s)

May be harmful to aquatic life (Lemna gibba)
2.3 Precautionary Statement:

Prevention
Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.
Avoid release to the environment

Response
Do not flush to sewer.

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

Storage
Stored in a cool, dry place.

2.4 Other Hazards
None identified.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Component Name</th>
<th>(Classification)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1214-39-7</td>
<td>6-benzyladenine</td>
<td>Oral toxicity, Category 4</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute Aquatic Toxicity, Category 1 (Algae/Lemna gibba)</td>
<td></td>
</tr>
<tr>
<td>468-44-0</td>
<td>Gibberellins A4 and A7</td>
<td>Eye irritation, Category 2B</td>
<td>1.8</td>
</tr>
<tr>
<td>510-75-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>77-92-9</td>
<td>Citric acid (anhydrous)</td>
<td>Serious Eye Damage/Eye Irritation, Category 2</td>
<td>0.5</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Other ingredients</td>
<td>Not classified</td>
<td>95.9</td>
</tr>
</tbody>
</table>

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. If irritation occurs 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. 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, then give artificial respiration.

4.2 Most important Symptoms and Effects, both Acute and Delayed

Acute
- May cause mild eye irritation.
- May cause mild skin irritation.

Delayed
- No information on significant adverse effects

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed
Treat symptomatically and supportively

5. FIRE FIGHTING PROCEDURES

5.1 Extinguisher Media

Suitable Extinguisher Media
- Dry chemical, water spray, foam or carbon dioxide. Use appropriate medium for the underlying cause of the fire.

Unsuitable Extinguisher Media
- None known

5.2 Specific Hazards Arising from the Chemical

Thermal decomposition products
- Carbon oxides, nitrogen oxides

5.3 Advice to Firefighters

Protective Equipment and precautions for firefighters
- Fire fighter should wear full-face, self-contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling combustion products. See Section 8 (Exposure Controls / Personal Protection)

Fire & Explosive hazard
- Not expected to be flammable. Does not process explosive properties.
- Flash point: 226 °F (108 °C)
- Auto-ignition temperature: 741 °F (394 °C)
6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures
Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves and shoes plus socks.

6.2 Environmental Precautions
Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Dispose of excess product and wash-waters according to local regulations. Do not contaminate water when disposing equipment wash-waters or rinsate. Avoid release to the environment and do not flush to sewer.

6.3 Methods and Materials for Containment and Cleaning Up
Wear appropriate personal protective equipment. Soak up product with inert absorbent material (earth, sand, vermiculite). Sweep up and shovel into suitable containers 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
Avoid contact with eyes and clothing. Wash thoroughly after handling. Do not eat, drink or smoke while working with product, obey reasonable safety precautions and practice good housekeeping.

7.2 Conditions for Safe Storage, Including Incompatibilities
Store in a cool, dry place.

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
None

Derived No Effect Levels (DNELs)
No DNELs available

Predicted No Effect Concentrations (PNECs)
No PNECs available

8.2 Exposure Controls

Appropriate Engineering Controls
Provide general ventilation.

SKIN PROTECTION:
Wear impervious protective clothing, including boots and gloves. Wear gloves made of 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.

RESPIRATORY PROTECTION:
Where respiratory protection is warranted, use dust/mist filtering respirator (MSHA/NIOSH approved number prefix TC-21C or a NIOSH approved respirator with any N, P, R or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear, slightly viscous liquid</td>
</tr>
<tr>
<td>pH</td>
<td>3.88 (1% dilution)</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Auto Ignition Temperature</td>
<td>741 °F (394 °C)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>226 °F (108 °C)</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Acidity</td>
<td>0.593% (as H₂SO₄)</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>68.4 cS (at 20 °C) 22.1 cS (at 40 °C)</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Solubility (H₂O)</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Relative Density</td>
<td>1.05</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Does not possess oxidizing properties</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Does not possess explosive properties</td>
</tr>
<tr>
<td>Persistent foaming</td>
<td>No foam at 0 &amp; 10 min.</td>
</tr>
<tr>
<td>Surface tension</td>
<td>68.2 mN/m at 21 °C (1 g/L)</td>
</tr>
</tbody>
</table>
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. Spontaneous reaction not possible.

10.3 Possibility of Hazardous Reactions
Does not undergo hazardous polymerization

10.4 Conditions to Avoid
None known

10.5 Incompatible Materials
None known

10.6 Hazardous Decomposition Products
Carbon oxides and unidentified organic compounds.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects of the Final Formulation:

LIKELY ROUTES OF EXPOSURE
   Eye Contact: Yes
   Skin Contact: Yes
   Inhalation: Yes
   Ingestion: No

ACUTE EFFECTS  Product Toxicology Studies
   ORAL TOXICITY: LD$_{50}$ >5,050 mg/kg bw (rat)
   DERMAL TOXICITY: LD$_{50}$ > 5,050 mg/kg bw (rabbit)
   INHALATION TOXICITY: LC$_{50}$ > 6.0 mg/L (rat, 4-hrs)
   CORROSIVENESS: Not corrosive
   DERMAL IRRITATION: Mildly irritating (PII: 0.2)
   OCULAR IRRITATION: Mildly irritating (rabbit)
   DERMAL SENSITIZATION: Not a sensitizer (Guinea pig, Maximization test)

MUTAGENICITY INFORMATION: Components of this product are not listed as mutagens.
CARCINOGENICITY INFORMATION: Components of this product are not listed as carcinogenic by NTP, IARC or OSHA.
Promalin® Plant Growth Regulator Solution

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Issued 2/22/16

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DEVELOPMENTAL/REPRODUCTIVE TOXICITY: Components of this product are not listed as pathogens.
SPECIAL TARGET ORGAN EFFECTS: Not applicable
ASPIRATION HAZARD: Not Applicable
REPEAT DOSE STUDIES: Not Applicable

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity (Data for the Final formulation)
- Fish: LC₅₀ (96-hr) >1,000 mg/L (Zebra Fish)
- Bird: LC₅₀ >2,000 mg/kg bw (Japanese Quail)
- Bees (Insects): LD₅₀ (48-hr) >100 mg/bee (contact, Honey bee)
- Algae: E₅₀ (96-hr) 123 mg/L (area under growth curve, Pseudokirchneriella subcapitata)
- E₅₀ (96-hr) 123 mg/L (growth rate, Pseudokirchneriella subcapitata)
- Ey₅₀ (96-hr) 123 mg/L (yield, Pseudokirchneriella subcapitata)
- Aquatic Invertebrates: EC₅₀ (48-hr) >512 mg/L (Daphnia magna)
- Aquatic Plants: EC₅₀ (7-d) 42 mg/L (frond yield, Lemna gibba)
- EC₅₀ (7-d) 140 mg/L (frond number growth rate, Lemna gibba)
- EC₅₀ (7-d) 73 mg/L (biomass yield, Lemna gibba)
- EC₅₀ (7-d) 198 mg/L (biomass growth rate, Lemna gibba)

12.2 Persistence and Degradability
No data available

12.3 Bioaccumulation potential
No data available

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: Not regulated
UN PROPER SHIPPING NAME: N/A
REMARKS: N/A

**IATA/ICA0**
STATUS: Not Regulated
PROPER SHIPPING NAME: N/A
REMARKS: N/A

**IMDG**
STATUS: Not Regulated
PROPER SHIPPING NAME: N/A
REMARKS: N/A

15. REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations / Specific Legislation
TSCA STATUS: Exempt
CERCLA STATUS: Not regulated as hazardous
SARA STATUS: Acute: No  Chronic: No  Fire: No  CDT: No
RCRA STATUS: Not regulated as hazardous
State Right-To-Know: Not Listed
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 73049-41
EPA Pesticide Label signal word: CAUTION

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

CAUTION

PRECAUTIONARY STATEMENTS
HAZARD TO HUMANS & DOMESTIC ANIMALS
CAUTION

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

ENVIRONMENTAL HAZARDS
For terrestrial uses: 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 when disposing of equipment washwaters or rinsate.

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 agency responsible for pesticide regulation.

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

Pesticide Storage: Store below 75°F (24°C). Keep containers tightly closed when not in use.
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: Nonrefillable 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 14 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. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact Ag Container Recycling Council at 202-861-3144 or www.acrecvcle.org. If recycling is not available puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.
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**16. OTHER INFORMATION**

<table>
<thead>
<tr>
<th>NFPA Hazard Ratings</th>
<th>HMIS Hazard Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health: 0</td>
<td>Health: 0</td>
</tr>
<tr>
<td>Flammability: 0</td>
<td>Flammability: 0</td>
</tr>
<tr>
<td>Instability: 0</td>
<td>Instability: 0</td>
</tr>
</tbody>
</table>

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Extreme

**REASON FOR ISSUE:** Additional List number added
**APPROVAL DATE:** 2/22/16
**SUPERSEDES DATE:** 2/03/16

**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 Corp.
- (TM) = Registered Trademark of Valent BioSciences Corp.

The information provided in this Safety Data Sheet (SDS) is provided in good faith and believed to be accurate at the time of preparation of the SDS. However, to the extent consistent with applicable law, Valent BioSciences Corporation and its subsidiaries or affiliates extend no warranties, make no representations, and assume no responsibility as to the accuracy, suitability, or completeness of such information. Additionally, to the extent consistent with applicable law, neither Valent BioSciences Corporation nor any of its subsidiaries or affiliates represents or guarantees that this information or product may be used without infringing the intellectual property rights of others. Except to the extent a particular use and particular information are expressly stated on the product label, it is the users’ own responsibility to determine the suitability of this information for their own particular use of this product. If necessary, contact Valent BioSciences Corporation to confirm that you have the most current product label and SDS.

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.