

ReTain® Plant Growth Regulator

MSDS# BIO-0020 Rev. 3

ISSUED 04/06/07

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL NAME: ReTain® Plant Growth Regulator

EPA REG. NO.: 73049-45

Code Number: 54870

List Number: 12017

MANUFACTURER: Valent BioSciences Corporation

870 Technology Way, Suite 100

Libertyville, Illinois 60048

EMERGENCY TELEPHONE NUMBERS

Emergency Health or Spill:

Outside the United States: 651-632-6184

Within the United States: 877-315-9819

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME: Avglycine HCl (AVG)

CONCENTRATION: 15.00 %

CAS NUMBER: 55720-26-8

OSHA-PEL 8HR TWA: N/L

STEL: N/L

CEILING: N/L

ACGIH-TLV 8HR TWA: N/L

STEL: N/L

CEILING: N/L

OTHER 8HR TWA: N/A

LIMITS STEL: N/A

CEILING: N/A

INGREDIENT NAME: Inert Ingredients: identity withheld as Trade Secret

CONCENTRATION: 85.00 %

CAS NUMBER: N/A

OSHA-PEL 8HR TWA: N/L

STEL: N/L

CEILING: N/L

ACGIH-TLV 8HR TWA: N/L

STEL: N/L

CEILING: N/L

OTHER 8HR TWA: N/A

LIMITS STEL: N/A

CEILING: N/A

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2. COMPOSITION/INFORMATION ON INGREDIENTS, continued

EEC (European Community): N/A
Symbol Designation: N/A
Risk Phrases: N/A
Safety Phrases: N/A

3. HAZARDS INFORMATION

EMERGENCY OVERVIEW: This material is considered to be non-toxic by ingestion, skin contact, or inhalation, and is not considered to be a skin or eye irritant. This material may be toxic to aquatic plants.

ROUTE(S) OF ENTRY: Skin: No
Inhalation: Possible, but unlikely
Ingestion: No

SKIN CONTACT: Non-irritant

SKIN SENSITIZATION: Non-sensitizer

EYE CONTACT: Non-irritant

TARGET ORGANS: Liver, kidney, testes

CARCINOGENICITY RATING: NTP: N/L IARC: N/L OSHA: N/L ACGIH: N/L
None

SIGNS AND SYMPTOMS: N/D.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: N/D.

4. FIRST AID MEASURES

EYES: Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

SKIN: Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

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4. FIRST AID MEASURES, continued

INGESTION: Remove from source of exposure. 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.

5. FIRE FIGHTING PROCEDURES

FLASH POINT: N/A
FLASH POINT METHOD: N/A
LOWER EXPLOSIVE LIMIT(%): N/A
UPPER EXPLOSIVE LIMIT(%): N/A
AUTOIGNITION TEMPERATURE: >400°C

FIRE & EXPLOSION HAZARDS: Non-flammable and no explosive properties.

EXTINGUISHING MEDIA: Use appropriate medium for underlying cause of fire.

FIRE FIGHTING INSTRUCTIONS: Wear protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

SPILL OR RELEASE PROCEDURES: Recover product, place into appropriate container for disposal. Avoid dust. Ventilate and wash spill area. Bleach can be used to decompose product. Avoid washing residues into drains or other waterways.

7. HANDLING AND STORAGE

HANDLING: Reasonable precautions for handling chemicals should be observed.

STORAGE: Store product in closed container in a cool and dry place.
Store at $\leq 25^{\circ}\text{C}$ (77°F) for optimum shelf life.

SPECIAL PRECAUTIONS: Wash thoroughly with soap and water after handling.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use local exhaust.

RESPIRATORY PROTECTION: Not usually required. If necessary, use a MSHA/NIOSH approved (or equivalent) respirator with high efficiency particulate filter (P100).

SKIN PROTECTION: Impervious gloves, clothing to minimize skin contact.

EYE PROTECTION: Safety glasses or goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Off-white to pale yellow fine powder

ODOR: Odorless

BOILING POINT: N/D

MELTING/FREEZING POINT: N/D

VAPOR PRESSURE (mm Hg): N/D

VAPOR DENSITY (Air=1): N/D

EVAPORATION RATE: N/D

BULK DENSITY: 0.78 g/cm³

SPECIFIC GRAVITY: N/D

SOLUBILITY: Readily soluble in water

pH: 5.6 (in a 10% aqueous solution)

VISCOSITY: N/D

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

INCOMPATIBILITIES: N/D.

HAZARDOUS DECOMPOSITION PRODUCTS: N/D.

HAZARDOUS POLYMERIZATION: Will not occur.

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11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

ORAL LD50 (rat): > 7,000 mg/kg

DERMAL LD50 (rabbit): > 5,000 mg/kg

INHALATION LC50 (rat): > 5.16 mg/l (4 hr). Nose only exposure at maximum attainable concentration.

CORROSIVENESS: N/D

DERMAL IRRITATION: Produced slight redness in several animals at site of application. Effects disappeared within 24 hours after treatment. Not classified as a skin irritant.

OCULAR IRRITATION: Slight, transient conjunctival irritation was observed in all rabbits. All effects disappeared by 72 hours after treatment. Not classified as an eye irritant.

DERMAL SENSITIZATION: Product is not classified as a skin sensitizer in guinea pigs.

SPECIAL TARGET ORGAN EFFECTS: N/D. In repeat dose oral studies with AVG, transient liver, kidney, and immunosuppression effects were observed. These reversible effects were only observed at high doses that produced general toxicity in the animals. In long-term studies, decreased weight and histopathological changes in the testes were observed in rats.

CARCINOGENICITY INFORMATION: N/D. In long-term studies with AVG, no evidence of carcinogenicity (oncogenic response) was found in rats. No evidence of genotoxic potential indicated following a battery of in vivo and in vitro mutagenicity tests.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: N/D

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS: Dispose of product in accordance with federal, state, and local regulations.

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14. TRANSPORTATION INFORMATION

DOT STATUS: Not Regulated
 PROPER SHIPPING NAME: N/D
 HAZARD CLASS: N/D
 UN NUMBER: N/D
 PACKING GROUP: N/D
 REPORTABLE QUANTITY: N/D

IATA/ICAO STATUS: Not Regulated
 PROPER SHIPPING NAME: N/D
 HAZARD CLASS: N/D
 UN NUMBER: N/D
 PACKING GROUP: N/D
 REPORTABLE QUANTITY: N/D

IMO STATUS: Not Regulated
 PROPER SHIPPING NAME: N/D
 HAZARD CLASS: N/D
 UN NUMBER: N/D
 PACKING GROUP: N/D
 REPORTABLE QUANTITY: N/D
 FLASH POINT: N/D

15. REGULATORY INFORMATION

TSCA STATUS: EXEMPT RCRA STATUS: N/D
 CERCLA STATUS: N/D PROP 65 (CA): N/D
 SARA STATUS: N/D

16. OTHER INFORMATION

REASON FOR ISSUE	Review & Update of information. No substantive changes.
APPROVAL DATE	04/06/07
SUPERSEDES DATE	01/16/04

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16. OTHER INFORMATION, continued

LEGEND: N/A = Not Applicable

N/D = Not Determined

N/L = Not Listed

L = Listed

C = Ceiling

S = Short-term

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