

**LEAP® ES Bacterial Disease Management, Biological Insecticide, Emulsifiable Suspension****SDS# VBC-0108 Revision 3****ISSUED 2/16/17**

[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:** LEAP® ES Bacterial Disease Management Biological Insecticide Emulsifiable Suspension**Synonyms:** VBC-60347**EPA Reg No.:** 73049-500**Code Number:** N/A**List Number:** N/A**Chemical Family:** None**1.2 Relevant Identified Uses and Uses Advised Against****Identified Uses:** Insecticide**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**

Hazardous to the Aquatic Environment – Acute Category 3

2.2 Labeling Elements**Symbol(s)**

None

Signal Word

WARNING

Hazard Statement(s)

Harmful to aquatic life (Btk – Daphnia; MeSA – Fish/Daphnia)

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Precautionary Statement:**Prevention**

Avoid release to the environment

Wash hands and face thoroughly after handling

Response

If on skin: Wash with plenty of water

Disposal

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

2.3 Other Hazards

None identified.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Component Name	Percent
68038-71-1	Btk Strain ABTS-351 technical powder	25.5
119-36-8	Methyl Salicylate	5.9
Trade Secret	Other ingredients	68.6
		Total: 100

4. FIRST AID MEASURES**4.1 Description of First Aid Measures****GENERAL:** In all cases of doubt, seek medical attention.**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.**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.**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.

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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.

4.2 Most important Symptoms and Effects, both Acute and Delayed**Acute**

May irritate the skin and eyes

Delayed

None known

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

Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Specific Hazards Arising from the Chemical**Thermal decomposition products**

Hydrochloric acid (HCl), Carbon oxides, and 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.

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

Use outdoors or in a well-ventilated area. For respiratory protection wear a dust mask. Wear

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eye protection appropriate to handling activities. Wear impervious gloves. See personal protection as recommended in Section 8.

6.2 Environmental Precautions

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. Absorb spillage with suitable absorbent material and 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**

Use outdoors or in a well-ventilated area. For respiratory protection wear a dust mask. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling. Do not eat, drink, chew gum or smoke while working with product, obey reasonable safety precautions and practice good housekeeping.

7.2 Conditions for Safe Storage, Including and Incompatibilities

Store in a well-ventilated location

Incompatibilities

None Known

7.3 Specific End Use(s)

Bacterial disease management and Biological Insecticide

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

None

Derived No Effect Levels (DNELs)

No DNELs available

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Predicted No Effect Concentrations (PNECs)

No PNECs available

8.2 Exposure Controls
Appropriate Engineering Controls

Provide general ventilation. Where adequate general ventilation is unavailable use local exhaust ventilation, or other engineering controls.

SKIN PROTECTION:

Wear impervious protective clothing, including boots and gloves. Wear a dust mask. Wear gloves made of impervious material. 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:

When 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

Appearance:	Brown liquid	Odor:	Not Determined
pH:	4.9	Boiling Point:	Not Determined
Melting Point:	Not Determined	Solubility (H ₂ O):	Not Determined
Specific Gravity:	Not Determined	Relative Density:	0.98
Octanol/H ₂ O Coeff:	Not Determined	Evaporation Rate:	Not Determined
Molecular Weight:	Not Applicable	Decomposition Temp.:	Not Determined
Auto Ignition:	Not Determined	LFL:	Not Determined
Flash Point:	None detected	UFL:	Not Determined
Vapor Density:	Not Determined	Vapor Pressure:	Not Determined
Viscosity:	Shows pseudoplastic behavior	Flammability Class:	Not 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. Spontaneous reaction not possible.

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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

Hydrochloric acid (HCl), carbon oxides and unidentified organic compounds.

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

Ingestion: Yes

Eye Contact: Yes

Skin Contact: Yes

Inhalation: Yes

ACUTE EFFECTS Product Toxicology StudiesOral Toxicity: LD₅₀ > 5,000 mg/kgDermal Toxicity: LD₅₀ > 5,000 mg/kgInhalation Toxicity: LC₅₀ > 5.15 mg/L

Corrosiveness: Not corrosive

Dermal Irritation: slightly-irritating, (not categorized)

Ocular Irritation: Mildly irritating, (not categorized)

Dermal Sensitization: Not a skin sensitizer

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.

Developmental/Reproductive Toxicity: A component within the formulation; MeSA:

Rat - Oral

NOEL teratogenicity: 50 mg/kg

NOEL maternal: 50 mg/kg

Rabbit - Oral

NOEL teratogenicity: 250 mg/kg

NOEL maternal: 125 mg/kg

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Special Target Organ: Not applicable

Repeat Dose Studies: Not applicable

Aspiration Hazard: Not applicable

12. ECOLOGICAL INFORMATION**12.1 Ecotoxicity****Btk Technical**Fish: $LC_{50} > 2.87 \times 10^7$ cfu/L (96-H, Rainbow Trout)Bird: $LC_{50} > 2857$ mg/kg (5.7 x 10¹⁰ spores/kg) each day for 5 days (total <14,285 mg/test) (Dietary - Bobwhite Quail)Invertebrates: $EC_{50} > 13$ mg/L (Daphnia magna); 21-day NOEC 2.5 mg/L EC_{50} (48hr (Daphnia magna)): > 50 mg/L. No mortality level 50 mg a.i./L

Bees: Essentially non-toxic to honey bees

MeSA TechnicalFish: $LC_{50} > 35$ mg/L; NOEC: 9.1 mg/L (96-H, Rainbow Trout) $LC_{50} > 26$ mg/L; NOEC: 16 mg/L (96-H, Bluegill)Bird: $LC_{50} > 1206$ mg a.i./kg (Acute Oral - Bobwhite Quail)**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.

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14. TRANSPORTATION INFORMATION

DOT STATUS: Not regulated for domestic ground transport by US DOT
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: N/D
SARA STATUS: Acute: No Chronic: No Fire: No CDT: No
RCRA STATUS: N/D
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 FIFRA – Pesticide Labeling

EPA registration Number 73049-500

EPA Pesticide Label signal word: CAUTION

Product must have EPA Approved Pesticide Label attached 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.

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KEEP OUT OF REACH OF CHILDREN
CAUTION
PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

Environmental Hazards

Do not apply directly to water, or to where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. This product must not be applied aerially within ¼ mile of any habitats of endangered species or threatened Lepidoptera. No manual application can be made within 300 feet of any threatened or endangered Lepidoptera.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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.

Storage: Keep containers tightly closed when not in use. Do not store at temperatures greater than 100° F. Roll or shake the container before dispensing.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water when disposing of equipment washwaters.

Container Disposal: Nonrefillable container. Do not reuse 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

16. OTHER INFORMATION**NFPA Hazard Ratings**

Health: N/D
Flammability: N/D
Instability: N/D

HMIS Hazard Ratings

Health: N/D
Flammability: N/D
Instability: N/D

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

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REASON FOR ISSUE: Updated classification based on new supplier SDS

APPROVAL DATE: 02/16/17

SUPERSEDES DATE: 12/14/16

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

(TM) = Registered Trademark of Valent BioSciences

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.