

MIMIC 2LV INSECTICIDE

SDS# VBC-0127 Revision 0

ISSUED 1/21/16

[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:** MIMIC 2LV INSECTICIDE**Synonyms:** None**EPA Reg No.:** 8033-113-73049**Code Number:** None**List Number:** 60160**Substance Registration Number(s)[REACH]:** N/A**1.2 Relevant Identified Uses and Uses Advised Against****Identified Uses:** Insecticide for forestry**Uses Advised Against:** It is a violation of Federal law to use this product in a manner inconsistent with its FIFRA 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**

Specific Target Organ Toxicity (Repeated Exposure): Category 2

Hazardous to the Aquatic Environment-Long-Term Hazard: Category 1

2.2 Labeling Elements**Symbol(s)****Signal Word**

WARNING

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Hazard Statement(s)

May cause damage to organs (Blood system, liver, kidney) through prolonged or repeated exposure
 Very toxic to aquatic life with long lasting effects

2.3 Precautionary Statement:

Prevention

Do not breathe mist/vapors/spray.
 Wash hands and face thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Avoid release to the environment.

Response

IF exposed or concerned: Call a POISON CENTER/doctor.
 Collect spillage.

Storage

Store locked up.

Disposal

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

2.4 Other Hazards

None identified.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Component Name	Percent
112410-23-8	<u>Active Ingredient</u> 3,5-dimethylbenzoic acid 1-(1,1-dimethylethyl)-2-(4-ethylbenzoyl)hydrazide ISO name ; Tebufenozide	24.3
9036-19-5	Polyethylene glycol octylphenyl ether	7.0
56-81-5	Glycerine	6.0
Trade Secret	Others	62.7

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

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

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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.

SKIN: Remove contaminated clothing and shoes. Wash with soap and plenty of water. If skin irritation occurs: Get medical advice/attention.

INGESTION: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor if you feel unwell.

INHALATION: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

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

Not available.

Delayed

Not available.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Administer 100% oxygen to relieve headache and a general sense of weakness. Determine methemoglobin concentration of blood every 3 to 6 hours for first 24 hours. It should return to normal within 24 hours. The treatment of toxic methemoglobinemia may include the intravenous administration of methylene blue. If methemoglobin is >10-20% consider methylene blue 1-2 mg/kg body weight as 1% solution IV over 5 minutes followed by 15-30 cc flush (Price D, Methemoglobinemia, Goldfrank Toxicologic Emergencies, 5th ed., 1994). Also provide 100% oxygen. Methemoglobinemia may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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

Dry chemicals, carbon dioxide, alcohol foam or water spray.

Unsuitable Extinguisher Media

None known

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

Thermal decomposition may produce harmful and irritant gas/fume such as carbon dioxide, carbon monoxide, nitrogen oxides, isobutylene and organic compounds.

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5.3 Advice to Firefighters**Protective Equipment and precautions for firefighters**

Wear self-contained breathing apparatus and complete personal protective equipment.

Move containers away from fire areas if it can be done without risk. If impossible to remove containers from fire zone, cool them with water spray.

Collect separately contaminated extinguishing water, do not allow to reach sewage or effluent system. Dispose of fire debris and contaminated extinguishing water in according with official regulations.

Fire & Explosive hazard

This product is non-combustible.

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

Refer to Section 8 for personal protective equipment.

Avoid contact with skin, eyes and clothing.

Avoid breathing the mist or vapor.

6.2 Environmental Precautions

Refer to Section 8 for personal protective equipment.

Avoid contact with skin, eyes and clothing.

Very toxic to aquatic life with long lasting effects, avoid release to the environment.

6.3 Methods and Materials for Containment and Cleaning Up

Bank up soil or sand around spill to prevent it from flowing out to environment. Scoop up spill with tool such as shovel, and place in closable containers. Use inert absorbent (e.g. sand or vermiculite) to complete pick-up. Use vacuum truck if spill is large. Wash spill site with soap and plenty of water after material pick-up is complete. Obey Federal, State or local regulations for health & safety and environmental protection when accidental spills are treated.

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

Refer to Section 8 for personal protective equipment. Keep out of the reach of children.

Avoid contact with skin, eyes and clothing. Do not breathe mist/vapors/spray.

Wash hands and face thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only in a well-ventilated areas, or chemical fume hood.

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7.2 Conditions for Safe Storage, Including Incompatibilities

Keep container tightly closed. Store in a cool, dry, well-ventilated place.
 Keep away from direct sunlight, oxidizing agents, foods, drink and animal feeding stuffs.
 Store locked up.

Incompatibilities

None Known

7.3 Specific End Use(s)

Forestry insecticide

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Glycerine: ACGIH TLV 10mg/m³
 OSHA (mist) Total dust 15mg/m³, Respirable fraction 5 mg/m³

8.2 Exposure Controls

Appropriate Engineering Controls

Use general and/or local exhaust ventilation to control vapor/mist.
 Provide safety showers and eyewashes.

RESPIRATORY PROTECTION:

Suitable respirator for organic vapor.

EYE/FACE PROTECTION:

Safety goggles.

CLOTHING:

Working clothes with long sleeves and long pants. Gloves such as rubber or polyvinyl chloride. Working shoes with socks.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Off-white, cream clear liquid	Odor	Mild odor
Specific Gravity(water=1)	1.0		
Melting Point	-9 °C	Boiling Point	100°C (Water)
Vapor Density (air=1)	< 1 (water)	Vapor Pressure	≤1.56×10 ⁻⁷ Pa @ 25°C(as Al)
Evaporation Rate (Ethyl acetate=1)	< 1 (water)	pH	6.5 to 7.5
Solubility in water	Dispersible	Solubility in solvent	Not available.

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Log P _{ow}	4.25 (25°C) (as AI)	Viscosity	1000 - 1500 CPS
Flash Point	Non-combustible	Auto ignition Temp.	Not-combustible
Explosion limit	Lower limit: Not applicable Upper limit: Not applicable		

10. CHEMICAL STABILITY AND REACTIVITY

10.1 Reactivity

This product is stable in normal handling and storing condition.

10.2 Chemical Stability

This product is stable in normal handling and storing condition.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization does not occur.

10.4 Conditions to Avoid

Hazardous polymerization does not occur.

10.5 Incompatible Materials

Strong oxidizing agents.

10.6 Hazardous Decomposition Products

Thermal decomposition or combustion may produce toxic and irritant gas or fume such as carbon dioxide, carbon monoxide, nitrogen oxides and isobutylene.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute Toxicity

Oral	LD ₅₀ (rat) :	> 5000mg/kg
Dermal	LD ₅₀ (rat) :	> 2000 mg/kg
Inhalation	LC ₅₀ (rat) :	> 1.33 mg/L (4hr) (maximum practicable concentration)

Skin corrosion/irritation

Dermal (rabbit): Slight irritant

Serious eye damage/irritation

Eyes (rabbit): Moderate

Respiratory or skin sensitization

Respiratory: Not available

Dermal (guinea pig): Negative

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Germ cell mutagenicity

Active ingredient

Ames test: Negative

Chromosomal aberration test

in vitro: Negative

in vivo (rat): Negative

Glycerine in vitro genetic toxicity studies were negative.

Carcinogenicity - Active ingredient

Negative (rat)

Negative (mouse)

NTP: not listed

IARC Monograph: not listed

ACGIH Regulated: not listed

Tebufenozide and glycerine did not cause cancer in laboratory animals.

Reproductive toxicity

Active ingredient: Negative (rat)

Glycerine: Reproductive effects seen in female animals are believed to be due to altered nutritional states resulting from extremely high doses of glycerine given in the diet.

Similar effects have been seen in animals fed synthetic diets.

Teratogenicity

Active ingredient: Negative (rat)

Negative (rabbit)

Glycerine did not cause birth defects or any other fetal effects in laboratory animals.

STOT-single exposure: Not available

STOT-repeated exposure: May cause damage to organs (Blood system, liver, kidney) through prolonged or repeated exposure.

Active ingredient: In animals, effects have been reported on the following organs: blood, blood-forming organs (bone marrow & spleen), kidney, & liver. May cause methemoglobinemia, thereby impairing the blood's ability to transport oxygen.

Chronic toxicity

NOAEL (rat): 5 mg/kg/day(male), 6 mg/kg/day (female) (2years)

NOAEL (mouse): 8 mg/kg/day(male), 9 mg/kg/day (female) (1.5 years)

Aspiration hazard: Not applicable

Others: Not available

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12. ECOLOGICAL INFORMATION**12.1 Ecotoxicity (The data for this preparation is not available. The data is provided for each component)****Tebfenozide**

Acute Toxicity for Fish

Carp: LC₅₀ > 12.9 mg/L (96hr)Rainbow trout (*Oncorhynchus mykiss*): LC₅₀ 5.7 mg/L (96hr)Bluegill sunfish LC₅₀ 3.0 mg/L (96hr)

Acute Toxicity for Invertebrate

Daphnia magna: EC₅₀ 3.8 mg/L (48hr)

Acute Toxicity for Algae

Pseudokirchneriella subcapitata) ErC₅₀ > 0.64 mg/L (72hr)

Chronic Toxicity

Fathead minnow: NOEC 0.71 mg/L

Daphnia magna: NOEC 0.029 mg/L (21d)

Algae (*Scenedesmus subspicatus*): NOEC 0.046 mg/L (96hr)**Polyethylene glycol octylphenyl ether**¹⁾

Acute Toxicity for Fish

Bluegill: LC₅₀ 2.8 mg/L (96hr)

Acute Toxicity for Invertebrate

Americamysis bahia: EC₅₀ 1.83 mg/L (48hr)Acute Toxicity for Algae: EC₅₀ 0.21 mg/L (96hr)

Avian Toxicity

Tebufenozide is practically non-toxic to birds on a dietary basis (LC₅₀ > 5000 ppm) and on an acute basis (LD₅₀ > 2150 mg/kg).

Additional Information

Active ingredient

Earthworm: LC₅₀ > 1000 mg/kg (14 d)Bees: LD₅₀ > 234 µg/bee**12.2 Persistence and Degradability**

Tebufenozide

OECD Biodegradation Tests: Not readily biodegradable

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Biodegradation	Exposure Time	Method
1 %	28 d	OECD 301C Test

Stability in Water (1/2-life)

pH 5: 568 d at 20 °C (1st order)

pH 7: 1034 d at 20 °C (1st order)

pH 9: 517 d at 20 °C (1st order)

Polyethylene glycol octylphenyl ether

Not readily biodegradable ²⁾

12.3 Bioaccumulation potential

Tebufenozide

BCF(Bluegill sunfish): 70 at 50µg/L

Polyethylene glycol octylphenyl ether

BCF (Carp): <31 ²⁾

12.4 Mobility in Soil

Tebufenozide

Partition coefficient, soil organic carbon/water (K_{oc}): 572 mg/L

12.5 Other adverse effects

Not available

13. DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Methods

- 1) Burn it in a chemical incinerator equipped with an afterburner and an alkaline scrubber by absorbing with sawdust or dissolving in combustible solvent, in accordance with Federal, State or local regulation.
- 2) Do not discharge into waterway or sewer systems unless permission has been obtained by the local authority and suitable dilution has been established.
- 3) Contaminated empty containers must be disposed of as chemical waste.
- 4) Dispose of contents/container in accordance with local/national/international regulations.

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14. TRANSPORTATION INFORMATIONDOT Regulations

Proper Shipping Name: Environmentally Hazardous Substance, liquid, n. o. s. (Tebufenozide mixture)

Hazard Class: 9

Identification No.: UN 3082

Packing Group: III

Marin pollutant: Applicable

Emergency Response Guide No. 171

International marine transportation(IMDG)

UN No.: 3082

Class: 9

Proper shipping name: Environmentally Hazardous Substance, liquid, n. o. s. (Tebufenozide mixture)

Packing Group: III

Marin pollutant: Applicable

ICAO/IATA Dangerous Goods Regulations

UN No.: 3082

Class: 9

Proper shipping name: Environmentally Hazardous Substance, liquid, n. o. s. (Tebufenozide mixture)

Packing Group: III

Environmentally hazardous: Applicable

15. REGULATORY INFORMATION**15.1 Safety, Health and Environmental Regulations / Specific Legislation**

TSCA STATUS: All ingredients are on the TSAC inventory or are not required to be listed on the TSCA inventory.

OSHA: All ingredients are not listed.

CERCLA STATUS: All ingredients are not listed.

SARA STATUS: All ingredients are not listed.

Others: None

15.2 EPA Pesticide Regulations

EPA Registration Number: 8033-113-73049

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

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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**

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

Harmful if swallowed, inhaled, or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Keep and wash PPE separately from other laundry.

User Safety Requirements

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Under some conditions, this chemical may also have a high potential for runoff into surface water for several weeks or months after application. Do not cultivate within 10 feet of aquatic areas so as to allow growth of a vegetative filter strip.

Drift from applications of this pesticide is likely to result in damage to sensitive aquatic invertebrates in water bodies adjacent to treatment area.

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, except under forest canopy when aerially applied to control forest pests. Do not contaminate water when disposing of equipment wash-waters and rinsate. Do not apply when weather conditions favor drift or runoff from areas treated.

Ground Water Advisory:

Confirm 2F has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

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STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store this product in its original container in a cool (temperature no less than 32°F), dry, well-ventilated area that is inaccessible (preferably locked) to children and pets.

PESTICIDE DISPOSAL: Pesticide wastes may be hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to the label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Non-refillable containers 5 gallons or less: Non-refillable container. Do not reuse or refill this container. Triple rinse or pressure 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 1/4 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. Then offer for recycling if available, or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

16. OTHER INFORMATION

Regulatory Information in other areas:

Substance	Tebufenozide	Polyethylene glycol octylphenyl ether	Glycerine
ENCS(JAPAN)	Not listed (not applicable for pesticide)	Listed (7-172)	Listed (2-242)
EINECS(EU)	Listed (412-850-3)	Not listed (polymer)	Listed (200-289-5)
DSL(Canada)	Not listed	Listed	Listed
IECSC(China)	Not listed	Listed (KE-33567)	Listed (KE-29297)
South Korea (ECL)	Not listed	Listed	Listed

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NFPA Hazard RatingsHealth: 1
Flammability: 0
Instability: 0**HMIS Hazard Ratings**Health: 1
Flammability: 0
Instability: 00 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Extreme

REASON FOR ISSUE: New GHS Format.

APPROVAL DATE: 01/21/16

SUPERSEDES DATE: --/--/--

References

- 1) Hazardous assessment report (CERI/NITE, 2006)
- 2) Japanese safety assessment data for existing chemical substance

LEGEND: N/A = Not Applicable

N/L = Not Listed

C = Ceiling

(R) = Registered Trademark of Valent BioSciences Corp.

(TM) = Registered Trademark of Valent BioSciences Corp.

N/D = Not Determined

L = Listed

S = Short-term

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

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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.

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