

## HOWLER® EVO Fungicide

### SAFETY DATA SHEET

OSHA HCS (29 CFR 1910.1200)

#### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product identifier**

|                           |   |
|---------------------------|---|
| Chemical Name             | <i>Pseudomonas chlororaphis</i> strain AFS009 |
| Trade Names               | HOWLER® EVO                                   |
| CAS No.                   | None assigned                                 |
| Product code              | BF009-01                                      |
| EPA Identification Number | EPA Reg. No. 91197-3-92488                    |

**Relevant identified uses of the substance or mixture and uses advised against**

|                      |  |
|----------------------|--|
| Identified Use(s)    | Fungicide.   |
| Uses Advised Against | It is a violation of Federal law to use this product in a manner inconsistent with its labeling. |

**Details of the supplier of the safety data sheet**

|                        |  |
|------------------------|--|
| Company Identification | AgBiome Innovations, Inc<br>104 TW Alexander Drive<br>Research Triangle Park, NC 27709<br>United States of America |
| Telephone              | (919) 228-8196   |

**Emergency telephone number**

|                     |  |
|---------------------|--|
| Emergency Phone No. | CHEMTREC 24 hr. 1-800-424-9300 / 1 (703) 527-3887 (Collect calls accepted).<br>Chemtrec Account No.: CCN803914 |
|---------------------|--|

#### SECTION 2: HAZARDS IDENTIFICATION

**Classification of the substance or mixture**

|                             |   |
|-----------------------------|---|
| OSHA HCS (29 CFR 1910.1200) | Not classified as dangerous for supply/use. |
|-----------------------------|---|

**Label elements**

This is a pesticide product registered with 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 labeling information below applies to non-pesticide workplace labels. For pesticide label information, refer to Section 15.

|                            |  |
|----------------------------|--|
| Hazard Symbol(s)           | None   |
| Signal Word(s)             | None   |
| Hazard Statement(s)        | None   |
| Precautionary Statement(s) | Avoid breathing dust.<br>Wash hands and exposed skin thoroughly after handling.<br>Wear protective gloves/protective clothing/eye protection/face protection.<br>IF ON SKIN: Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. If irritation (redness, rash, blistering) develops, get medical attention. Treat symptomatically. Contaminated clothing should be laundered before reuse.<br>Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice. Observe directions on label and instructions for use. See Also Section 15. |

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|                               |  |
|-------------------------------|--|
| <b>Other hazards</b>          | Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization. |
| <b>Additional Information</b> | None   |

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Composition/information on ingredients        | %W/W | CAS No.       |
|---|------|---------------|
| <i>Pseudomonas chlororaphis</i> strain AFS009 | 50   | None assigned |
| Other proprietary ingredients                 | 50   | Trade Secret  |

**Additional Information** – The exact composition is being withheld as Trade Secret in accordance with OSHA 29 CFR 1910.1200.

### SECTION 4: FIRST AID MEASURES



**Description of first aid measures**

|   |  |
|---|--|
| Inhalation  | Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing is labored, administer oxygen. Treat symptomatically.   |
| Skin Contact  | Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. If irritation (redness, rash, blistering) develops, get medical attention. Treat symptomatically. Contaminated clothing should be laundered before reuse. |
| Eye Contact   | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention.   |
| Ingestion   | Do not give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell. Rinse mouth.  |
| <b>Most important symptoms and effects, both acute and delayed</b>                | Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.   |
| <b>Indication of any immediate medical attention and special treatment needed</b> | Call a POISON CENTER or doctor/physician if you feel unwell.   |

### SECTION 5: FIRE-FIGHTING MEASURES

|  |  |
|--|--|
| <b>Extinguishing Media</b>                                   |  |
| -Suitable Extinguishing Media                                | Extinguish with carbon dioxide, dry chemical, foam or water spray.                                   |
| -Unsuitable Extinguishing Media                              | None known.  |
| <b>Special hazards arising from the substance or mixture</b> | None known.  |
| <b>Advice for fire-fighters</b>                              | Fire fighters should wear complete protective clothing including self-contained breathing apparatus. |

### SECTION 6: ACCIDENTAL RELEASE MEASURES

|  |  |
|--|--|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Avoid breathing dust. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Wear |
|--|--|

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|   |   |
|---|---|
| <b>Environmental precautions</b>                            | protective gloves/protective clothing/eye protection/face protection. Observe directions on label and instructions for use. See Also Section 15.                              |
| <b>Methods and material for containment and cleaning up</b> | Avoid run off to waterways and sewers.<br>Sweep or shovel-up spillage and remove to a safe place. Transfer to a container for disposal or recovery. Avoid generation of dust. |
| <b>Reference to other sections</b>                          | None  |
| <b>Additional Information</b>                               | None  |

### SECTION 7: HANDLING AND STORAGE

|   |  |
|---|--|
| <b>Precautions for safe handling</b>                                | Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Wash hands and exposed skin thoroughly after handling. Observe directions on label and instructions for use. See Also Section 15. |
| <b>Conditions for safe storage, including any incompatibilities</b> |  |
| -Storage temperature  | Store at room temperature. Do not allow material to freeze.  |
| -Incompatible materials   | Strong oxidising agents.   |
| <b>Specific end use(s)</b>  | Fungicide  |

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Occupational Exposure Limits**

| SUBSTANCE.  | CAS No. | (8hr TWA)  |             | (STEL)     |             | Note: |
|-------------|---------|------------|-------------|------------|-------------|-------|
|             |         | PEL (OSHA) | TLV (ACGIH) | PEL (OSHA) | TLV (ACGIH) |       |
| None known. | ----    | ----       | ----        | ----       | ----        | ----  |

**Exposure controls**

**Appropriate engineering controls** Observe directions on label and instructions for use. See Also Section 15.

**Personal protection equipment**

Eye/face protection



Wear protective eyewear (goggles, face shield, or safety glasses). Observe directions on label and instructions for use. See Also Section 15.

Skin protection (Hand protection/ Other)



Impervious gloves. Observe directions on label and instructions for use. See Also Section 15.

Respiratory protection



Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Observe directions on label and instructions for use. See Also Section 15.

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|  |  |
|--|--|
| Thermal hazards                        | Not normally required.   |
| Additional Information                 | Observe directions on label and instructions for use. See Also Section 15. |
| <b>Environmental Exposure Controls</b> | Avoid run off to waterways and sewers.                                     |

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

|  |                    |
|--|--------------------|
| Appearance                               | Solid / Powder     |
| Color                                    | tan                |
| Odor                                     | Not available.     |
| Odor Threshold (ppm)                     | Not available.     |
| pH (Value)                               | Not applicable.    |
| Melting Point (°C) / Freezing Point (°C) | Not available.     |
| Boiling point/boiling range (°C):        | Not available.     |
| Flash Point (°C)                         | Not applicable.    |
| Evaporation rate                         | Not applicable.    |
| Flammability (solid, gas)                | Combustible solid. |
| Explosive Limit Ranges                   | Not applicable.    |
| Vapor pressure (Pascal)                  | Not applicable.    |
| Vapor Density (Air=1)                    | Not applicable.    |
| Density (g/ml)                           | 0.43 – 0.52        |
| Solubility (Water)                       | Not available.     |
| Solubility (Other)                       | Not available.     |
| Partition Coefficient (n-Octanol/water)  | Not available.     |
| Auto Ignition Point (°C)                 | Not available.     |
| Decomposition Temperature (°C)           | Not available.     |
| Kinematic Viscosity (cSt)                | Not available.     |
| Explosive properties                     | Not explosive.     |
| Oxidising properties                     | Not oxidising.     |
| <b>Other information</b>                 | Not available.     |

### SECTION 10: STABILITY AND REACTIVITY

|   |  |
|---|--|
| <b>Reactivity</b>                         | No hazardous reactions known if used for its intended purpose. |
| <b>Chemical stability</b>                 | Stable under normal conditions.                                |
| <b>Possibility of hazardous reactions</b> | None anticipated.  |
| <b>Conditions to avoid</b>                | Incompatible materials   |
| <b>Incompatible materials</b>             | Strong oxidising agents.                                       |
| <b>Hazardous decomposition product(s)</b> | None known.  |

### SECTION 11: TOXICOLOGICAL INFORMATION

**Exposure routes:** Inhalation, Skin Contact, Eye Contact

#### Information on toxicological effects

##### Substances

|                           |   |
|---------------------------|---|
| Acute toxicity            | Oral: LD50 >3.73 x 10 <sup>9</sup> viable CFU (rat); >5000 mg/kg-bw (female, rat)<br>Dermal: LD50 >5000 mg/kg-bw (rat)<br>Inhalation: LC50 >5.04 mg/L (rat) |
| Skin corrosion/irritation | Unlikely to cause skin irritation.  |

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|                                   |  |
|-----------------------------------|--|
| Serious eye damage/irritation     | Unlikely to cause eye irritation.  |
| Respiratory or skin sensitization | <b>Respiratory Sensitization:</b> Repeated inhalation of high concentrations of some microbial proteins has caused allergic sensitization.<br><b>Skin sensitization:</b> Not to be expected. |
| Germ cell mutagenicity            | Not to be expected.  |
| Carcinogenicity                   | Not available.   |

| NTP | IARC | ACGIH | OSHA |
|-----|------|-------|------|
| No. | No.  | No.   | No.  |

|                          |                     |
|--------------------------|---------------------|
| Reproductive toxicity    | Not to be expected. |
| STOT - single exposure   | Not to be expected. |
| STOT - repeated exposure | Not to be expected. |
| Aspiration hazard        | Not available.      |

### SECTION 12: ECOLOGICAL INFORMATION

#### Ecotoxicity

|            |  |
|------------|--|
| Short term | EC50 (96 hour): >1.0 x 10 <sup>7</sup> CFU/mL ( <i>Oncorhynchus mykiss</i> )<br>EC50 (48 hour): >1.0 x 10 <sup>7</sup> CFU/mL ( <i>Daphnia magna</i> )                     |
| Long Term  | NOEC (30 days, survival): >1.0 x 10 <sup>7</sup> CFU/mL ( <i>Oncorhynchus mykiss</i> )<br>NOEC (21 days, survival): >1.0 x 10 <sup>7</sup> CFU/mL ( <i>Daphnia magna</i> ) |

#### Persistence and degradability

Not persistent.

#### Bioaccumulative potential

The product has no potential for bioaccumulation.

#### Mobility in soil

The product is predicted to have low mobility in soil.

#### Results of PBT and vPvB assessment

Not classified as PBT.

#### Other adverse effects

None known.

### SECTION 13: DISPOSAL CONSIDERATIONS

#### Waste treatment methods

Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice. Observe directions on label and instructions for use. See Also Section 15.

#### Additional Information

None known.

### SECTION 14: TRANSPORT INFORMATION

|                              | Land transport<br><u>(U.S. DOT)</u> * | Sea transport<br><u>(IMDG)</u> | Air transport<br><u>(ICAO/IATA)</u> |
|------------------------------|---------------------------------------|--------------------------------|-------------------------------------|
| UN number                    |                                       |                                |                                     |
| Proper Shipping Name         |                                       |                                |                                     |
| Transport hazard class(es)   |                                       |                                |                                     |
| Packing group                |                                       |                                |                                     |
| Hazard label(s)              |                                       |                                |                                     |
| Environmental hazards        |                                       |                                |                                     |
| Special precautions for user |                                       |                                |                                     |

Not classified as dangerous for transport.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable

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### SECTION 15: REGULATORY INFORMATION

#### Safety, health and environmental regulations/legislation specific for the substance or mixture:

**TSCA (Toxic Substance Control Act)** - Inventory Status: All components listed and active, or exempt. This is a registered pesticide product regulated under Federal Insecticide, Fungicide, and Rodenticide Act.

#### EPA FIFRA Information for SDS Section 15 (Regulatory Information):

This is a pesticide product registered with 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:

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if inhaled, absorbed through skin, or swallowed. Causes moderate eye irritation. Avoid breathing dust or spray mist. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

##### Applicators and other handlers must wear:

- Shoes plus socks
- Long pants and long-sleeved shirt
- Waterproof gloves

Wear a minimum of NIOSH-approved particulate filtering facepiece respiratory with an R or P filter, OR a NIOSH-approved elastomeric particulate respirator with any R, or P filter; OR a NIOSH-approved powered air purifying respirator with an HE filter. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

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

#### ENGINEERING CONTROLS

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [(40 CFR 170.607 (d) and (e)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

#### USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean highwater mark. Do not contaminate water when disposing of equipment washwater or rinsate.

The pesticide label also includes other important information, including directions for use.

## HOWLER® EVO Fungicide

**Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4):**

| Chemical Name | CAS No. | Typical %wt. | RQ (Pounds) |
|---------------|---------|--------------|-------------|
| None          | ----    | -----        | -----       |

**SARA 311/312 - Hazard Categories:** See SECTION 2 - HAZARDS IDENTIFICATION

**SARA 313 - Toxic Chemicals (40 CFR 372):**

| Chemical Name | CAS No. | Typical %wt. |
|---------------|---------|--------------|
| None          | ----    | -----        |

**SARA 302 - Extremely Hazardous Substances(40 CFR 355):**

| Chemical Name | CAS No. | Typical %wt. | RQ (Pounds) | TPQ (Pounds) |
|---------------|---------|--------------|-------------|--------------|
| None          | ----    | -----        | -----       | -----        |

**Proposition 65 (California):**

| Chemical Name | CAS No. | Typical %wt. | Hazards |
|---------------|---------|--------------|---------|
| None          | ----    | -----        | -----   |

### SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16

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