



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	Certis Biologicals 9145 Guilford Rd. Suite 175 Columbia, MD 21046 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). Chemtrec Account No.: CCN803914
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SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA HCS (29 CFR 1910.1200)	Not classified as dangerous for supply/use.
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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. Wash hands and exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. 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. 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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Other hazards Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Additional Information 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.

Most important symptoms and effects, both acute and delayed Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Indication of any immediate medical attention and special treatment needed Call a POISON CENTER or doctor/physician if you feel unwell.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

-Suitable Extinguishing Media Extinguish with carbon dioxide, dry chemical, foam or water spray.

-Unsuitable Extinguishing Media None known.

Special hazards arising from the substance or mixture None known.

Advice for fire-fighters Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

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

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

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	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.
Conditions for safe storage, including any incompatibilities	
-Storage temperature	Store at room temperature. Do not allow material to freeze.
-Incompatible materials	Strong oxidising agents.
Specific end use(s)	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.
Environmental Exposure Controls	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.
Other information	Not available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	No hazardous reactions known if used for its intended purpose.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None anticipated.
Conditions to avoid	Incompatible materials
Incompatible materials	Strong oxidising agents.
Hazardous decomposition product(s)	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 ⁹ viable CFU (rat); >5000 mg/kg-bw (female, rat) Dermal: LD50 >5000 mg/kg-bw (rat) 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	Respiratory Sensitization: Repeated inhalation of high concentrations of some microbial proteins has caused allergic sensitization. Skin sensitization: Not to be expected.								
Germ cell mutagenicity	Not to be expected.								
Carcinogenicity	Not available.								
	<table border="1"> <thead> <tr> <th>NTP</th> <th>IARC</th> <th>ACGIH</th> <th>OSHA</th> </tr> </thead> <tbody> <tr> <td>No.</td> <td>No.</td> <td>No.</td> <td>No.</td> </tr> </tbody> </table>	NTP	IARC	ACGIH	OSHA	No.	No.	No.	No.
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 ⁷ CFU/mL (<i>Oncorhynchus mykiss</i>) EC50 (48 hour): >1.0 x 10 ⁷ CFU/mL (<i>Daphnia magna</i>)
Long Term	NOEC (30 days, survival): >1.0 x 10 ⁷ CFU/mL (<i>Oncorhynchus mykiss</i>) NOEC (21 days, survival): >1.0 x 10 ⁷ 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 (U.S. DOT) *	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN number			
Proper Shipping Name			
Transport hazard class(es)			Not classified as dangerous for transport.
Packing group			
Hazard label(s)			
Environmental hazards			
Special precautions for user			

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.



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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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