

SAFETY DATA SHEET
AVODIGEN™ Biological Fungicide/Nematicide

SDS # : FO004113-A
Revision date: 2019-08-30
Format: NA
Version 1



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name AVODIGEN™ Biological Fungicide/Nematicide

Other means of identification

Product Code(s) FO004113-A

Legacy Product Code F4018-4

Active Ingredient(s) Bacillus licheniformis, strain FMCH001
Bacillus subtilis, strain FMCH002

PCP # 33311

Recommended use of the chemical and restrictions on use

Recommended Use: Biological fungicide/nematicide seed treatment

Restrictions on Use: Use as recommended by the label.

Supplier Address

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
msdsinfo@fmc.com (E-Mail General Information)

Emergency telephone number

Medical Emergencies :
1 800 / 331-3148 (U.S.A. & Canada)
1 651 / 632-6793 (All Other Countries - Collect)

For leak, fire, spill or accident emergencies, call:
1 800 / 424-9300 (CHEMTREC - U.S.A.)
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

None, Not classified

Hazard Statements
 None

Precautionary Statements - Prevention

No serious hazards to health are expected. However, the product should always be treated with the usual care of handling chemicals.

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight %
Glycerin	56-81-5	30-40
Sodium bisulfate	7681-38-1	1-5
Sodium tripolyphosphate	7758-29-4	1-5

The product contains Bacillus subtilis (FMCH002), 4%, and Bacillus licheniformis (FMCH001), 3.5%, which are biologically active materials.

4. FIRST AID MEASURES

Eye Contact	Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Ingestion	Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting unless told to do so by a poison control center or doctor. Have person sip a glass of water if able to swallow. If vomiting does occur, rinse mouth and drink fluids again. Do not give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Most important symptoms and effects, both acute and delayed	None known.
Indication of immediate medical attention and special treatment needed, if necessary	Immediate medical attention is required in cases of ingestion. Notes to physician: A specific antidote for exposure to this material is not known. Gastric lavage and/or the administration of activated charcoal can be considered. After decontamination, treatment should be directed at the control of symptoms and the clinical condition.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the

surrounding environment.

Small Fire Dry chemical, Carbon dioxide (CO₂).

Large Fire Water spray, Foam.

Unsuitable extinguishing media Avoid heavy hose streams.

Specific Hazards Arising from the Chemical The essential breakdown products are carbon monoxide, carbon dioxide, phosphorus pentoxide and nitrogen oxides.

Explosion data

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

Protective equipment and precautions for firefighters As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Observe all safety precautions when cleaning up spills. Use personal protective equipment.

Other For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

Environmental Precautions Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways.

Methods for Containment If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with detergent and much water. Absorb wash liquid onto inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Handling Handle in accordance with good industrial hygiene and safety practice. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal. Wash hands before eating, drinking, chewing gum, using tobacco, or using toilet. Remove and wash contaminated clothing before re-use.

Storage Store at temperatures ≤4°C for up to 6 months from the date of manufacture.

Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

Incompatible products No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Glycerin	-	TWA: 15 mg/m ³	-	Mexico: TWA 10 mg/m ³

(56-81-5)		TWA: 5 mg/m ³		
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Glycerin (56-81-5)	TWA: 10 mg/m ³ TWA: 3 mg/m ³	TWA: 10 mg/m ³	-	TWA: 10 mg/m ³

Appropriate engineering controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection For dust, splash, mist or spray exposure, wear chemical protective goggles.

Skin and Body Protection Wear long-sleeved shirt, long pants, socks, and shoes.

Hand Protection Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.

Respiratory Protection Applicators and other handlers must wear a NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.).

Hygiene measures Clean water should be available for washing in case of eye or skin contamination. Remove and wash contaminated clothing before re-use. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Launder work clothing separately from regular household laundry.

General information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquid
Physical State	Liquid
Color	No information available
Odor	No information available
Odor threshold	No information available
pH	4
Melting point/freezing point	Not applicable
Boiling Point/Range	No information available
Flash point	> 150 °C
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	1.18 @ 20°C
Specific gravity	No information available
Water solubility	Dispersible in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	Not explosive
Oxidizing properties	Non-oxidizing

Molecular weight No information available
 Bulk density No information available

10. STABILITY AND REACTIVITY

Reactivity To our knowledge, the product has no special reactivities.
 Chemical Stability Stable under recommended storage conditions.
 Possibility of Hazardous Reactions None under normal processing.
 Hazardous polymerization Hazardous polymerization does not occur.
 Conditions to avoid Heating of the product will produce harmful and irritant vapors.
 Incompatible materials No information available.
 Hazardous Decomposition Products See Section 5 for more information.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral Minimally toxic
 LD50 Dermal Minimally toxic
 LC50 Inhalation Minimally toxic
 Serious eye damage/eye irritation Minimally irritating (rabbit).
 Skin corrosion/irritation Slightly irritating (rabbit).
 Sensitization Potential sensitizer

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glycerin (56-81-5)	= 12600 mg/kg (Rat)	> 10 g/kg (Rabbit)	> 570 mg/m ³ (Rat) 1 h
Sodium bisulfate (7681-38-1)	= 2490 mg/kg (Rat)		
Sodium tripolyphosphate (7758-29-4)	= 3120 mg/kg (Rat)	> 7940 mg/kg (Rabbit)	

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Mutagenicity The product contains no ingredients known to be mutagenic
 Carcinogenicity There are no known carcinogenic chemicals in this product
 Neurological effects None known
 Reproductive toxicity This product does not contain any known or suspected reproductive hazards.
 Developmental toxicity Contains no known teratogenic components.
 STOT - single exposure No specific effects after single exposure have been observed.
 STOT - repeated exposure No toxicologically significant effects were found.
 Neurological effects None known
 Aspiration hazard The product does not present an aspiration pneumonia hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No significant environmental effects are expected. Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Persistence and degradability	Readily biodegradable.
Bioaccumulation	Bioaccumulation is not expected.
Mobility	The product is not expected to be mobile in the soil.
Other Adverse Effects	None known.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods	Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.
Contaminated Packaging	Containers must be disposed of in accordance with local regulations. Refer to the product label for container disposal instructions.

14. TRANSPORT INFORMATION

<u>DOT</u>	NOT REGULATED
<u>TDG</u>	NOT REGULATED
<u>ICAO/IATA</u>	NOT REGULATED
<u>IMDG/IMO</u>	NOT REGULATED

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

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This chemical is a pesticide product registered by the 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, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

NO SIGNAL WORD REQUIRED

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Glycerin 56-81-5	X	X	X
Sodium tripolyphosphate 7758-29-4		X	X

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Glycerin 56-81-5	X	X	X	X	X	X	X	X
Sodium bisulfate 7681-38-1	X	X	X	X	X	X	X	X
Sodium tripolyphosphate 7758-29-4	X	X	X	X	X	X	X	X

Chemical name	Carcinogen Status	Mexico
Glycerin		Mexico: TWA 10 mg/m ³

CANADA**WHMIS Statement**

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

WHMIS Hazard Class Non-controlled

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Special Hazards -
HMIS	Health Hazards 1*	Flammability 0	Physical hazard 0	Personal Protection X

*Indicates a chronic health hazard.

NFPA/HMIS Ratings Legend Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2019-08-30

Reason for revision: Initial Release

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Prepared By:

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End of Safety Data Sheet