

<p style="text-align: center;">MONSANTO COMPANY Safety Data Sheet Commercial Product</p>

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product identifier

Actinovate® SP Biological Fungicide

1.1.1. Chemical name

Not applicable.

1.1.2. Synonyms

Actinovate Soluble

1.1.3. EPA Reg. No.

524-641

1.2. Product use

Fungicide

1.3. Company

MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167

Telephone: 800-332-3111, **Fax:** 314-694-5557

E-mail: safety.datasheet@monsanto.com

1.4. Emergency numbers

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).
FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

2. HAZARDS IDENTIFICATION

2.1. Classification

Classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200 (2012)
Combustible dust

2.2. Label elements

2.2.1. Signal word

WARNING!

2.2.2. Hazard pictogram/pictograms

Not applicable.

2.2.3. Hazard statement/statements

May form combustible dust concentrations in air.

2.2.4. Precautionary statement/statements

Not applicable.

2.3. Other hazards

Not applicable.

2.4. Appearance and odour (colour/form/odour)

White /Powder / Musty

Refer to section 11 for toxicological and section 12 for environmental information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

; {Streptomyces lydicus WYEC 108}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Streptomyces lydicus WYEC 108		0.037
Other ingredients		99.963

The specific chemical identity and/or concentration range is being withheld because it is trade secret information of Monsanto Company.

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

4.1. Description of first aid measures

- 4.1.1. Eye contact:** If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.
- 4.1.2. 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 treatment advice.
- 4.1.3. Inhalation:** If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
- 4.1.4. Ingestion:** Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison center or doctor. Do not give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

- 4.2.1. Eye contact, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed. Dust particles may cause slight eye irritation.
- 4.2.2. Skin contact, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.
- 4.2.3. Inhalation, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.
- 4.2.4. Single ingestion:** Not expected to produce significant adverse effects when recommended use instructions are followed.

4.3. Indication of any immediate medical attention and special treatment needed

- 4.3.1. Medical conditions aggravated by exposure:** Contains microorganisms which may have the potential to provoke sensitising reactions. Opportunistic infections may occur in patients with compromised immune functions.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- 5.1.1. Recommended:** Water, Dry chemical, Foam, Carbon dioxide (CO₂)
- 5.1.2. NOT recommended:** Water jet, Avoid high pressure media that could cause the formation of a potentially explosible dust-air mixture.

5.2. Special hazards

- 5.2.1. Unusual fire and explosion hazards**

This material as normally packaged and handled can contain sufficient fines to form an explosive mixture if dispersed in a sufficient quantity of air.

Environmental precautions: see section 6.

5.2.2. Hazardous products of combustion

Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x)

5.3. Fire fighting equipment: Self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

5.4. Flash point

Not applicable.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

Do not breathe dust.

6.2. Environmental precautions

Keep out of drains, sewers, ditches and water ways.

Do NOT contaminate water when disposing of rinse waters.

6.3. Methods for cleaning up

Collect in containers for reclamation or disposal.

Use vacuum equipment designed specifically for combustible dust.

Wash spill area with detergent and water.

Refer to section 13 for disposal of spilled material.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

7.1. Precautions for safe handling

Do NOT taste or swallow. Avoid contact with eyes, skin and clothing. Avoid breathing dust. When using do not eat, drink or smoke. Wash hands thoroughly after handling or contact. Wash contaminated clothing before re-use. Thoroughly clean equipment after use. Do not contaminate drains, sewers and water ways when disposing of equipment rinse water. Refer to section 13 of the safety data sheet for disposal of rinse water.

7.2. Conditions for safe storage

Incompatible materials for storage: Acids, bases, oxidizers, reducers, disinfectants, fungicides, and/or biocides may inactivate this product.

Read label for specific storage conditions. Keep material dry. Keep away from direct sunlight. Avoid extremely high or low temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Airborne exposure limits

Components	Exposure Guidelines
Streptomyces lydicus WYEC 108	No specific occupational exposure limit has been established.
Other ingredients	No specific occupational exposure limit has been established.

8.2. Recommendations for personal protective equipment

8.2.1. Eye protection:

If there is potential for contact: Wear dust goggles.

8.2.2. Skin protection:

Applicators and other handlers must wear: Wear long sleeved shirt, long pants and shoes with socks.

8.2.3. Respiratory protection:

Wear respirator with filtering elements to protect against: particulates. Use NIOSH approved respiratory protection equipment. Repeated or prolonged inhalation may cause allergic reactions in some people.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	White
Odour:	Musty
Form:	Powder
Physical form changes (melting, boiling, etc.):	
Melting point:	No data.
Boiling point:	Not applicable.
Flash point:	Not applicable.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Self-accelerating decomposition temperature (SADT):	No data.
Oxidizing properties:	No data.
Specific gravity:	Not applicable.
Vapour pressure:	No significant volatility.
Vapour density:	Not applicable.
Evaporation rate:	Not applicable.
Dynamic viscosity:	Not applicable.
Kinematic viscosity:	Not applicable.
Density:	5.5 g/cm ³
Solubility:	Soluble
pH:	6.6
Partition coefficient:	No data.

10. STABILITY AND REACTIVITY

10.1. Stability

Stable under normal conditions of handling and storage.

10.2. Incompatible materials

Acids, bases, oxidizers, reducers, disinfectants, fungicides, and/or biocides may inactivate this product.
Compatible materials for storage: see section 7.2.

10.3. Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Likely routes of exposure: Skin contact, eye contact, inhalation

Most important symptoms and effects, both acute and delayed

Eye contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed. Dust particles may cause slight eye irritation.

Skin contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

Single ingestion: Not expected to produce significant adverse effects when recommended use instructions are followed.

Indication of any immediate medical attention and special treatment needed

Medical conditions aggravated by exposure: Contains microorganisms which may have the potential to provoke sensitising reactions. Opportunistic infections may occur in patients with compromised immune functions.

Monsanto has not conducted toxicity studies on this product. Contains microorganisms which may have the potential to provoke sensitising reactions. Opportunistic infections may occur in patients with compromised immune functions.

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Monsanto has not conducted environmental studies on this product.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product

Keep out of drains, sewers, ditches and water ways. Render material inactive or innocuous by a validated method and dispose of in accordance with all local/regional/national/international regulations.

13.1.2. Container

Emptied packages retain product residue and dust. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Empty packaging completely. Ensure packaging cannot be reused. Do NOT re-use containers. Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

14.1. US Dept. of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 105-180)

Proper Shipping Name	Not regulated for domestic ground transportation. ()
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(Technical Name if required):	
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14.2. IMDG Code

Proper Shipping Name (Technical Name if required):	Not regulated for transport under IMO Regulations. ()
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14.3. IATA/ICAO

Proper Shipping Name (Technical Name if required):	Not regulated for transport under IATA/ICAO Regulations. ()
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15. REGULATORY INFORMATION

15.1. Environmental Protection Agency

15.1.1. TSCA Inventory

Exempt

15.1.2. SARA Title III Rules

Section 311/312 Hazard Categories:

See OSHA Hazard Communication Standard Categories in Section 2.1

Section 302 Extremely Hazardous Substances: Not applicable.

Section 313 Toxic Chemical(s): Not applicable.

15.1.3. CERCLA Reportable quantity

Not applicable.

15.1.4. Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)

This chemical is a pesticide product regulated 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 for use.

CAUTION!

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.

Follow all local/regional/national/international regulations.

Please consult supplier if further information is needed.

In this document the British spelling was applied.

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), STOT SE (Specific Target

Organ Toxicity, Single Exposure), STOT RE (Specific Target Organ Toxicity, Repeated Exposure), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (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, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

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