1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Agri-Mycin® 17 Agricultural Streptomycin
Synonyms: Streptomycin Sulfate; O-2-deoxy-2-methylamino-alpha-L-glucopyranosyl-(1->2)-O-5-deoxy-3-C-formyl-alpha-L-lyxofuranosyl-(1->4)-N3, N3-diamidino-D-streptamine-sulfate (2:3)
EPA Reg. No.: 55146-96
Company Name: Nufarm Americas Inc. AGT Division
150 Harvester Drive, Suite 200
Burr Ridge, IL 60527
Date of Issue: March 28, 2007
Supersedes: March 29, 2004
Sections Revised: New or updated information all sections

2. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance and Odor: Tan colored powder with a fermentation-like odor.
Warning Statements: Keep out of reach of children. CAUTION. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing.

Potential Health Effects:
Likely Routes of Exposure: Inhalation, eye and skin contact.
Eye Contact: Causes moderate eye irritation. May cause pain, redness and tearing.
Skin Contact: Slightly toxic and slightly irritating based on toxicity studies. A skin sensitization (allergic) reaction may occur in some individuals.
Ingestion: Slightly toxic based on toxicity studies. May cause digestive tract irritation.
Inhalation: Low inhalation toxicity.
Medical Conditions Aggravated by Exposure: Individuals with allergic (including antibiotics) history or pre-existing dermatitis should use extra care in handling this product.

See Section 11: TOXICOLOGICAL INFORMATION for more information.

Potential Environmental Effects:
Streptomycin is practically non-toxic to birds, freshwater invertebrates and honeybees and slightly toxic to fish.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAS NO.</th>
<th>% BY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streptomycin Sulfate</td>
<td>3810-74-0</td>
<td>22.4</td>
</tr>
<tr>
<td>Other Ingredients Including:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diluent (contains)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crystalline silica as quartz</td>
<td>14808-60-7</td>
<td></td>
</tr>
<tr>
<td>Kaolin Clay</td>
<td>1332-58-7</td>
<td></td>
</tr>
<tr>
<td>Mica</td>
<td>12001-26-2</td>
<td></td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

If on Skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

If in Eyes: Hold eye 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 treatment advice.

If Swallowed: Call a 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 control center or doctor. Do not give anything by mouth to an unconscious person.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Note to Physician: Observe for anaphylactic type reaction.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable
Autoignition Temperature: Not determined  Flammability Limits: Not determined

Extinguishing Media: Dry chemical, foam or carbon dioxide.
Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.
Hazardous Decomposition Materials (Under Fire Conditions): Irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

National Fire Protection Association (NFPA) Hazard Rating:
Rating for this product: Health: 1  Flammability: 1  Reactivity: 0
Hazard Scale: 0 = Minimal  1 = Slight  2 = Moderate  3 = Serious  4 = Severe

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.
Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.
Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.
Methods for Cleanup and Disposal: If dry, sweep or scoop up material and place into container for disposal. If wet, pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.
Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Handling:
Avoid contact with eyes, skin, or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after
handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Storage:**
Keep tightly closed. Storage should be at a cool temperature when possible, and with minimum exposure to the atmosphere. Do not contaminate water, food, or feed by storage or disposal.

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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering Controls:**
Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

**Personal Protective Equipment:**
*Eye/Face Protection:* To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.
*Skin Protection:* To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves made of waterproof material. An emergency shower or water supply should be readily accessible to the work area.
*Respiratory Protection:* Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.
*General Hygiene Considerations:* Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

**Exposure Guidelines:**

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA</td>
<td>STEL</td>
</tr>
<tr>
<td>Streptomycin Sulfate</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Crystalline silica as quartz</td>
<td>10 (R)</td>
<td>NE</td>
</tr>
<tr>
<td>Kaolin Clay</td>
<td>15 (T)</td>
<td>NE</td>
</tr>
<tr>
<td></td>
<td>5 (R)</td>
<td></td>
</tr>
<tr>
<td>Mica</td>
<td>20 mppcf (&lt;1% crystalline silica)</td>
<td>NE</td>
</tr>
</tbody>
</table>

T = Total Dust
R = Respirable Fraction
NE = Not Established

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance and Odor:** Tan colored powder with a fermentation-like odor.
**Boiling Point:** Not applicable
**Solubility in Water:** Soluble
**Density:** 1.00 g/ml
**Specific Gravity:** Not applicable
**Evaporation Rate:** Not applicable
**Vapor Density:** Not applicable
**Freezing Point:** Not applicable
**Vapor Pressure:** Not applicable
**pH:** 4.67 @ 25°C
**Viscosity:** Not applicable

**Note:** Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.
10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal handling and storage conditions.
Conditions to Avoid: Moisture. Use airtight containers to protect from moisture.
Incompatible Materials: Strong acids and bases.
Hazardous Decomposition Products: Under fire conditions irritating and possibly toxic gases may be generated by thermal decomposition or combustion.
Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:
Data from laboratory studies on this product are summarized below:
- Oral: Rat LD<sub>50</sub>: >5,000 mg/kg
- Dermal: Rabbit LD<sub>50</sub>: >2,000 mg/kg
- Inhalation: Rat 4-hr LC<sub>50</sub>: >2.72 mg/l
- Eye Irritation: Rabbit: Mildly irritating
- Skin Irritation: Rabbit: Slightly irritating
- Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Other Acute Effects: Streptomycin may cause severe allergic reactions (anaphylactic) in sensitive individuals.
Subchronic (Target Organ) Effects: Clinical studies reported kidney damage and ear damage manifested by nausea, vomiting, dizziness, numbness/tingling of face. Inhalation of excessive amounts of kaolin dust may produce coughing, sneezing and nasal irritation. Chronic exposure to mica may cause persistent cough, possible difficulty in breathing.
Carcinogenicity / Chronic Health Effects: Prolonged overexposure to streptomycin may cause effects to kidneys, ears and skin. Streptomycin did not cause cancer in laboratory animals. Long-term over-exposure to kaolin dust may affect the lungs. The diluent as a whole is not listed as a carcinogen. However, it does contain crystalline silica (e.g. quartz), a naturally occurring component. Inhalation of crystalline silica may cause pulmonary fibrosis (silicosis). Crystalline silica has been classified by IARC as carcinogenic to humans (Group 1), by the U.S. National Toxicology Program as a known human carcinogen and by ACGIH as a suspected human carcinogen (A2).
Reproductive Toxicity: Streptomycin may cause auditory nerve damage in the developing fetus.
Developmental Toxicity: None observed.
Genotoxicity: None observed.

Assessment Carcinogenicity:
This product contains substances that are considered to be probable or suspected human carcinogens as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulatory Agency Listing As Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACGIH</td>
</tr>
<tr>
<td>Crystalline Silica, Quartz</td>
<td>A2</td>
</tr>
</tbody>
</table>

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Data on Streptomycin:
- 96-hour LC<sub>50</sub> Bluegill: > 180 ppm
- 96-hour LC<sub>50</sub> Rainbow Trout: > 180 ppm
- Bobwhite Quail Acute Oral LC<sub>50</sub>: >2,000 mg/kg
- Bobwhite Quail 8-day Dietary LC<sub>50</sub>: >5,620 ppm
- Mallard Duck 8-day Dietary LC<sub>50</sub>: 4,640 ppm
13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:**
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Handling and Disposal:**
Completely empty bag into application equipment. Then dispose of bag in a sanitary landfill, by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

**DOT**
Non Regulated – See 49 CFR 173.132(b)(3)

**IMDG**
Non Regulated – See IMDG 2.6.2.1.3

**IATA**
Non Regulated – See IATA 3.6.1.5.3

15. REGULATORY INFORMATION

**U.S. Federal Regulations:**

**TSCA Inventory:** This product is exempted from TSCA because it is solely for FIFRA regulated use.

**SARA Hazard Notification/Reporting:**
Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): Immediate, Delayed

**Section 313 Toxic Chemical(s):** None

**Reportable Quantity (RQ) under U.S. CERCLA:** None

**RCRA Waste Code:** None

**State Information:**
Other state regulations may apply. Check individual state requirements.

**California Proposition 65:** WARNING. This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS 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-accepted label.

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