

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Agri Tin® Flowable
EPA Reg. No.: 55146-84
Synonyms: Fentin Hydroxide, TPTH

Company Name: Nufarm Americas Inc. AGT Division
 150 Harvester Drive, Suite 200
 Burr Ridge, IL 60527

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
 Call CHEMTREC Day or Night: 1-800-424-9300
 For Medical Emergencies Only, Call 1-877-325-1840

Date of Issue: January 17, 2012 **Supersedes:** November 10, 2011
Sections Revised: 14

2. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance and Odor: Beige colored liquid with a mild odor.

Warning Statements: Keep out of reach of children. DANGER – POISON. Fatal if inhaled. Corrosive. Causes irreversible eye damage and skin burns. May be fatal if swallowed or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Do not breathe vapor or spray mist. The U.S. Environmental Protection Agency has determined that triphenyltin hydroxide, the active ingredient in this product, affects fetal development in laboratory animals. Exposure to this product during pregnancy should be avoided.

Potential Health Effects:

Likely Routes of Exposure: Inhalation, eye and skin contact.

Eye Contact: Contact with eyes may cause eye corrosion or ulceration; blindness may result.

Skin Contact: Contact with skin may cause severe irritation with burning, redness, swelling, pain or rash.

Ingestion: Ingestion may cause irritation of the digestive tract with stomach pain, heartburn, nausea, vomiting or diarrhea; there may be no symptoms at all.

Inhalation: Inhalation may cause irritation of nose, throat and lungs, cough, difficulty breathing or shortness of breath.

Medical Conditions Aggravated by Exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

See Section 11: TOXICOLOGICAL INFORMATION for more information.

Potential Environmental Effects:

This product is toxic to fish and wildlife.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENT | CAS NO. | % BY WEIGHT |
|---|---------|----------------|
| Triphenyltin Hydroxide | 76-87-9 | 40.0 |
| Other Ingredients Including Propylene Glycol | 57-55-6 | 60.0 < 4.0% |

4. FIRST AID MEASURES

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.

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.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

Flash Point: >392° F (>200° C)

Autoignition Temperature: Not determined

Flammability Limits: Not determined

Extinguishing Media: Use dry chemical, carbon dioxide, water fog or foam.

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): May produce diphenyltin hydroxide, monophenyltin hydroxides and metallic tin. (Technical: organic acid vapors.)

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 4 Flammability: 1 Reactivity: 0

Hazards 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: 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:**

Do not get in eyes, or on skin or on clothing. Do not breathe vapor or spray mist. 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:

Store above 32°F (0°C) and below 95°F (35°C). Store in original container in a dry secured storage area. Keep container tightly closed when not in use. Do not contaminate water, food or feed by storage or disposal.

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| 8. EXPOSURE CONTROLS / PERSONAL PROTECTION |
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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:

Some materials that are chemical-resistant to this product are butyl rubber, nitrile rubber or neoprene rubber. If you want more options, follow the instructions for Category A on the EPA chemical-resistance category selection chart.

Handlers exposed to the concentrate or diluted product: Must wear coveralls over long-sleeved shirt and long pants, chemical-resistant footwear plus socks, chemical-resistant gloves made of any waterproof material, such as butyl rubber, nitrile rubber, or neoprene rubber, protective eyewear, chemical-resistant apron for mixing and loading or equipment maintenance, chemical-resistant headgear for overhead exposure, dust/mist filtering respirator (MSHA/NIOSH approval TC-21C) or a NIOSH approved respirator with any N,R, P or HE filter.

Handlers, mixers, loaders, applicators and flaggers using engineering controls: Must wear long-sleeved shirt and long pants, shoes plus socks, chemical-resistant gloves made of any waterproof material, such as butyl rubber, nitrile rubber, or neoprene rubber, during mixing and loading.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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:

| Component | OSHA | | ACGIH | | Unit |
|----------------------------|-----------|------|-------|------|-------------------|
| | TWA | STEL | TWA | STEL | |
| Triphenyltin Hydroxide | NE | NE | NE | NE | |
| (As Organic Tin Compounds) | 0.1 | NE | 0.1 | 0.2 | mg/m ³ |
| Propylene Glycol | 10 (WEEL) | NE | NE | NE | mg/m ³ |

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Beige colored liquid with a mild odor.

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|--------------------------|--------------------|-----------------------------|----------------|
| Boiling Point: | Not determined | Solubility in Water: | Suspension |
| Density: | 10.1 pounds/gallon | Specific Gravity: | 1.207 @ 21°C |
| Evaporation Rate: | Not determined | Vapor Density: | Not determined |
| Freezing Point: | Not determined | Vapor Pressure: | Not determined |
| pH: | 7.85 (1% solution) | Viscosity: | Not determined |

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: Direct sunlight causes degradation to an inorganic tin salt.

Incompatible Materials: Acids and oxidizers.

Hazardous Decomposition Products: Under fire conditions, may produce diphenyltin hydroxide, monophenyltin hydroxides and metallic tin. (Technical: organic acid vapors.)

Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION**Toxicological Data:**

Data from laboratory studies on this product are summarized below:

Oral: Rat LD₅₀: 100 mg/kg

Dermal: Rat LD₅₀: >2,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: 0.108 mg/L

Eye Irritation: Rabbit: Severely irritating/corrosive

Skin Irritation: Rabbit: Moderately irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposures to TPTH may produce impaired immune system function with increased susceptibility to disease, altered white blood cell and lymphocyte counts, and effects on the pituitary, testes, and liver. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis. Very high dose acute exposure may result in CNS and cardiac effects.

Carcinogenicity / Chronic Health Effects: The U.S. EPA has classified TPTH as a Class B2 carcinogen (probable human carcinogen) based on pituitary and testicular tumors in rats and liver tumors in mice. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis.

Reproductive Toxicity: In a multi-generational reproduction study in rats, TPTH produced decreased litter size, liver and spleen weights at exposure levels lower than where parental toxicity was observed.

Developmental Toxicity: TPTH studies in laboratory animals show developmental effects only at exposure levels producing other toxic effects in the parental animal.

Genotoxicity: TPTH is not considered to have a mutagenicity/genetic toxicity concern. Most studies are negative for mutagenic/genetic toxicity effects. Although there are some apparent positive responses, other tests, particularly *in vivo*, conducted to verify the significance of the apparent positive studies *in vitro* were negative.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

See Section 2: HAZARDS IDENTIFICATION for more information.

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| 12. ECOLOGICAL INFORMATION |
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Ecotoxicity:

Data on TPTH Technical:

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|---|----------|---|---------------|
| 96-hour LC ₅₀ Bluegill: | 23.0 ppb | Bees LD ₅₀ : | >114.8 µg/bee |
| 96-hour LC ₅₀ Rainbow Trout: | 22.0 ppb | Bobwhite Quail Dietary LC ₅₀ : | 253 ppm |
| 48-hour EC ₅₀ Daphnia: | 10.0 ppb | Mallard Duck Oral LD ₅₀ : | 378 mg/kg |

Environmental Fate:

Data indicates that TPTH binds strongly to soil, is stable to photolysis and resistant to photo degradation and hydrolysis. Because of its soil binding qualities, TPTH is not expected to leach to groundwater. However, TPTH could reach surface water through spray drift and run-off.

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| 13. DISPOSAL CONSIDERATIONS |
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Waste Disposal Method:

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

Nonrefillable containers larger than 5 gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORTATION INFORMATION

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

DOT

UN3020, Organotin pesticides, liquid, toxic, (Triphenyltin Hydroxide), 6.1, III, Marine Pollutant

IMDG

UN3020, Organotin pesticides, liquid, toxic, (Triphenyltin Hydroxide), 6.1, III, Marine Pollutant

IATA

UN3020, Organotin pesticides, liquid, toxic, (Triphenyltin Hydroxide), 6.1, III, Marine Pollutant

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):

Triphenyltin hydroxide (CAS No. 76-87-9)- 40% by weight in product

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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