

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Agri Tin®
EPA Reg. No.: 55146-72
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

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Sections Revised: 13

2. HAZARDS IDENTIFICATION**Emergency Overview:**

Appearance and Odor: Beige colored powder with slight 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 dust, 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	80.00
Other Ingredients		20.00

4. FIRST AID MEASURES

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 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, preferably an ophthalmologist.

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 Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip two to three glasses 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.

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

5. FIRE FIGHTING MEASURES

Flash Point: Not determined

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: Sweep up and place in suitable (fiberboard) containers for later disposal. 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 dust, 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 14°F (-10°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.

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:

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 apron, 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

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Beige colored powder with slight odor.

Boiling Point:	Not applicable	Solubility in Water:	Wettable dispersion
Density:	1.57 g/cm ³	Specific Gravity:	Not applicable
Evaporation Rate:	Not applicable	Vapor Density:	Not applicable
Freezing Point:	Not applicable	Vapor Pressure:	Not applicable
pH:	8.17	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: 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 conducted on a similar, but not identical, formulation:

Oral: Rat LD₅₀: 160 mg/kg

Dermal: Rabbit LD₅₀: 500 mg/kg

Inhalation: Rat 4-hr LC₅₀: 0.039 mg/L

Eye Irritation: Rabbit: Corrosive (technical TPTH)

Skin Irritation: Rabbit: Severely 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.

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.

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.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on TPTH Technical:

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.

13. DISPOSAL CONSIDERATIONS**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:

Water Soluble Packaging: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or dispose of empty outer foil pouch in the trash as long as WSP is unbroken.

Nonrefillable Containers 50 lbs or less: Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Empty the remaining contents into application equipment or a mix tank and drain after 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. The 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 50 lbs: 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. 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. 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.

For Fiber Drums with Liners: Nonrefillable container. Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment or a mix tank. Then offer for recycling, if available, or dispose of liner in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner.

Refillable containers larger than 5 gallons: 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. 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

UN2786, Organotin pesticides, solid, toxic, (Triphenyltin Hydroxide), 6.1, III, Marine Pollutant

IMDG

UN2786, Organotin pesticides, solid, toxic, (Triphenyltin Hydroxide), 6.1, III

IATA

UN2786, Organotin pesticides, solid, 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)- 80% 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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