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Material Safety Data Sheet (MSDS)

MSDS# AT-FUN014001

Date: 06/17/2008

Section 1 - Product Chemical and Company Identification

Product name AmTide Tebuconazole Technical Fungicide
Chemical name (RS)-1-p-chlorophenyl-4,4-dimethyl-3-(1*H*-1,2,4-triazol-1-ylmethyl)pentan-3-ol (IUPAC).
Use category Fungicide
Company AmTide, LLC.
EPA Reg.No. 83851-1
Emergency phone Chemtrec 1-800-424-9300
AmTide, LLC. 1-949-753-4723

Section 2 - Composition /Information on Ingredients

Components	CAS number	% (w/w)
Active ingredient: Tebuconazole	[107534-96-3]	≥98.0
Inert ingredients	----	≤2.0

Section 3 - Hazards Identification

Emergency Overview:

CAUTION! Harmful if swallowed, absorbed through the skin or inhaled. Cause moderate eye irritation. Avoid contact with eyes or clothing. Avoid breathing duct or spray mist.

Potential Health Effects:

Acute effects of exposure:

Based on animal toxicity testing, we would expect this product to be slightly irritating to the skin and minimally irritating to the eyes. Based on the EPA Toxicity Category criteria, this material is mildly toxic by the oral and dermal routes.

Chronic effects of exposure:

Based on animal toxicity dates of the active ingredient, tebuconazole, there may be toxic effects on the following organs: spleen, liver, adrenals, and lens of the eye.

Medical conditions aggravated by exposure:

No specific conditions are known, which may be aggravated by exposure to this product.

Section 4 - First Aid Measures

If poisoning occurs, immediately contact a doctor or Poisons Information Centre, and follow the advice given. Show this Material Safety Data Sheet to the doctor.

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 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.



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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 a 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 an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

If on skin or clothing:

- 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.

Notes to Physicians:

No specific antidote. Treat symptomatically.

Symptoms of Poisoning:

The compound does not cause any definite symptoms that would be diagnostic. Contact with the eyes may cause irritation.

Section 5 - Fire Fighting Measures

Extinguishing Media:

Water, CO₂, Dry Chemical, Foam.

Fire Fighting Instructions:

Keep out of smoke; cool exposed containers with water spray.

Fight fire from upwind position. Use self-contained breathing equipment. Contain run-off by diking to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

Section 6 - Accidental Release Measures

Safeguards (Personnel):

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Clean Up:

Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing vapors and skin contact. Wear proper protective equipment. Dike contaminated area with absorbent granules, soil, sand, etc. If large spill, material should be recovered. Small spills can be absorbed with absorbent granules, spill control pads, or any absorbent material. Carefully sweep up absorbed spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Use dry absorbent materials such as clay



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granules to absorb and collect solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers or other waterways or contact vegetation.

Section 7- Handling and Storage

Handling (Personnel):

Handle and open container in a manner as to prevent spillage. If container is leaking or material is spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed below. In spill or leak incidents, keep unauthorized people away.

Storage:

Keep product in original container. Store in a cool, dry secure place. Protect from excessive heat. Do not contaminate food or foodstuffs. Do not store or transport near food or feed.

Section 8 - Exposure Controls/Personal Protection

Engineering Controls:

When handlers use closed systems, enclosed cabs, in a manner that meets the requirements listed below.

Personal Protective Equipment:

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Chemical-resistant gloves, such as barrier laminate or butyl rubber or nitrile rubber or neoprene rubber or polyvinyl chloride.
- Shoes plus socks.

Follow the instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Additional protective measures:

- Clean water should be available for washing in case of eye or skin contamination.
- Educate and train employees in safe use of the product.
- Launder clothing after use.
- Wash thoroughly after handling.

Section 9 - Physical and Chemical Properties Appearance:

Physical State: Neutral shiny white powder

Odor: Odorless.

pH value: 5.92

Melting point: 103.7~105.2°C

Density: 1.22g/mL



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Flammability: Non combustible material.

Explosibility: Not have explosive characteristics.

These physical data are typical values based on material test but may vary from sample to sample. Typical values should not construed as a guaranteed analysis and any specific lot or as specification items.

Section 10 - Stability and Reactivity

Stability: This is a stable material.

Hazardous Polymerization: Will not occur.

Incompatibilities: None known.

Instability Conditions: None known for active ingredient:

Decomposition Products: Proposed under fire or other extreme conditions: CO₂, oxides of nitrogen.

Section 11 - Toxicological Information (Based on the active Ingredient)

Acute toxicity:

Oral LD₅₀: > 5000 mg/kg (Rat)

Dermal LD₅₀: > 5050 mg/kg (Rabbit)

Inhalation LC₅₀: 4 hours: > 2.23 mg/l air (Rat).

Eye irritation: Minimally irritant to eyes (Rabbit), toxicity category IV

Skin irritation: Slight-irritating to skin (Rabbit), toxicity category IV

Sensitization: Not a dermal sensitizer (Guinea Pig).

Subchronic Toxicity: In dermal toxicity studies using rabbits, the no-observed-effect-level (NOEL) was 1000 mg/kg. In a 3 week inhalation study with rats, the NOEL was 10.6 mg/cubic meter.

Chronic Toxicity: In chronic dog studies, tebuconazole was administered for 52 weeks at dietary concentrations of 40, 100, 150, 200 or 1000 ppm. Due to a lack of significant effects, the high dose was increased to 2000 ppm at 40 weeks for the remainder of the study. At the high dose, effects relating to liver, spleen, ocular and adrenal were observed. The overall NOEL from these studies was 100 ppm based on adrenal effects. In a 2 year study, tebuconazole was administered to rats at dietary concentrations of 100, 300 or 1000 ppm. There was a reduction in body weight gains and an increased incidence of liver and spleen effects at the high dose. The NOEL was 300 ppm.

Carcinogenicity: There was no indication of a carcinogenic effect in rats or mice when tested at dose levels up to and including the maximum tolerated dose (MTD) for each species. An increased incidence of hepatocellular neoplasms occurred in mice at a dose level approximately three fold greater than the MTD

Mutagenicity: In vitro and in vivo mutagenicity studies conducted on tebuconazole have been negative.



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Developmental Toxicity: In mice treated at dose levels ranging from 1-1000 mg/kg, the NOELs for maternal and developmental toxicity were 3 and 10 mg/kg, respectively. In rats treated at dose levels of 30, 60 or 120 mg/kg, the NOELs for maternal and developmental toxicity were 30 and 60 mg/kg, respectively. For rabbits, the NOELs for maternal and developmental toxicity were less than 10 and 30 mg/kg, respectively. In dermal teratology studies on rats and mice, tebuconazole was administered during gestation at dose levels of 100, 300 or 1000 mg/kg. In rats, there was no indication of maternal or developmental toxicity; therefore, the maternal and developmental NOEL was 1000 mg/kg. In mice, the NOELs for maternal and developmental toxicity were 100 and 300 mg/kg, respectively.

Reproduction: In a reproduction study in rats, smaller litter sizes and decreased pup weight gain was observed in conjunction with maternal toxicity at the high concentration. The maternal and reproductive NOEL was 300 ppm.

Neurotoxicity: In an acute neurotoxicity screening study, tebuconazole was administered to rats as a single oral dose at doses of 100, 500 or 1000 mg/kg for males and 100, 250 or 500 mg/kg for females. Treatment related clinical signs of toxicity and transient neurobehavioral effects were evident in both sexes. There were no treatment related microscopic lesions within the skeletal muscle or neural tissues. Based on these results the NOEL for neuropathology was 1000 mg/kg for males and 500 mg/kg for females, the highest dose tested. The overall NOEL was less than 100mg/kg for both sexes. In a subsequent study, an overall NOEL of 50 mg/kg was established for both sexes. In a 13 week neurotoxicity screening study in rats, body weight and food consumption was reduced at the high dose, functional observational battery (FOB) and automated measures of motor and locomotor activity were not affected by treatment, there were no treatment related microscopic lesions in neural tissues or skeletal muscle in any of the treated animals, and there was no evidence of neurotoxicity at any dietary concentration. The NOEL for overall toxicity was 400 ppm. In a one generation developmental neurotoxicity study, tebuconazole was administered to rats during gestation and postnatal development. Maternal toxicity observed included decreased body weight and feed consumption, mortality, prolonged gestation, and alopecia. Effects observed in the offspring included mortality, developmental delay, and decrease in number of liveborn, viability index, body weight gain, absolute brain weight and cerebellar thickness. Tebuconazole did not cause any specific neurobehavioral effects in the offspring. The NOEL for both maternal and F1 offspring toxicity was 300 ppm

Section 12 - Ecological Information (Based on the active Ingredient)

Toxicity to fish: LC₅₀ (96 h) for rainbow trout 158.40 mg/L

Toxicity to daphnia: EC₅₀ (48 h) = 142.26mg/L

Environmental hazards: This product is toxic to estuarine and marine invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirement of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to the



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discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

Section 13 - Disposal Considerations

Waste Disposal:

Do not contaminate water, food or feed by disposal.

Pesticide Disposal:

Pesticide wastes are toxic. 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 Disposal:

Completely empty container into application equipment. Then dispose of empty container in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Section 14 - Transport Information

Transportation classification: Not regulated for transportation by any mode

Freight classification: Insecticides of Fungicides, N.O.I., other than poison

15. Regulatory Information

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200

TSCA STATUS: This product is exempt from TSCA Regulation under FIFRA Section 3(2)(B)(ii) when used as a pesticide.

CERCLA Reportable Quantity: No components listed

SARA TITLE III:

Section 302 Extremely Hazardous Substances: None

Section 311/312 Hazard Categories: Immediate Health Hazard; Delayed Health Hazard

Section 313 Toxic Chemicals: None

16. Other Information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. AmTide, LLC assumes no responsibility for results obtained or for incidental or consequential damages arising from the use of these data.