



**Material Safety Data Sheet**

**TARTAN™ FUNGICIDE**

MSDS Number: 102000013748

MSDS Version 1.0

Revision Date: 02/09/2006

**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product Name** TARTAN™ FUNGICIDE  
**MSDS Number** 102000013748  
**EPA Registration No.** 432-1446  
**Product Use** Fungicide for control of certain foliar, stem and root diseases of turfgrass including golf courses, sod farms and sports fields.

Bayer Environmental Science  
 2 T.W. Alexander Drive  
 Research Triangle PK, NC 27709  
 USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)  
 For Product Information call: 1-800-331-2867

**SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Triadimefon	43121-43-3	20.86
Trifloxystrobin	141517-21-7	4.17

**SECTION 3. HAZARDS IDENTIFICATION**

*NOTE: Please refer to Section 11 for detailed toxicological information.*

**Emergency Overview** Caution! Harmful if swallowed. Moderate eye irritation. Avoid contact with skin, eyes and clothing.

**Physical State** liquid viscous  
**Appearance** green  
**Routes of Exposure** Ingestion, Eye contact, Skin contact  
**Immediate Effects**  
**Eye** Moderate eye irritation. Do not get in eyes.  
**Ingestion** Harmful if swallowed. Do not take internally.  
**Inhalation** Avoid breathing spray mist.



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**Chronic or Delayed  
Long-Term**

This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic). This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.

**SECTION 4. FIRST AID MEASURES**

<b>General</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Eye</b>	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.
<b>Skin</b>	Take off all contaminated clothing immediately. Rinse immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse out mouth and give water in small gulps to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
<b>Inhalation</b>	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
<b>Notes to Physician Treatment</b>	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

**SECTION 5. FIRE FIGHTING MEASURES**

<b>Flash Point</b>	> 93.3 °C / 199.9 °F
<b>Suitable Extinguishing Media</b>	carbon dioxide (CO2), dry chemical, foam, water spray
<b>Fire Fighting Instructions</b>	Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Dike area to prevent runoff and contamination of water sources. Do not allow run-off from fire fighting to enter drains or water courses. Equipment or materials involved in pesticide fires may become contaminated.  Wear self-contained breathing apparatus and protective suit.



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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal Precautions**      Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
- Methods for Cleaning Up**      Take up with absorbent material (e.g. sand, diatomaceous earth or a proprietary absorbent material). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.
- Additional Advice**      Use personal protective equipment. Do not allow product to enter streams, sewers or other waterways.

**SECTION 7. HANDLING AND STORAGE**

- Handling Procedures**      Handle and open container in a manner as to prevent spillage.
- Storing Procedures**      Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.  
  
Do not use, pour or store near heat or open flame. Do not contaminate water, food, or feed by storage or disposal.
- Work/Hygienic Procedures**      Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.  
  
Remove and wash contaminated clothing before re-use. As soon as practical, wash thoroughly and change into clean clothing.

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

- General Protection**      Follow all label instructions. Train employees in safe use of the product.  
  
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.
- Engineering Controls**      Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.
- Eye/Face Protection**      protective eyewear
- Hand Protection**      Chemical resistant nitrile rubber gloves
- Body Protection**      Wear long-sleeved shirt and long pants and shoes plus socks.



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**Respiratory Protection** When respiratory protection is necessary under the conditions of use, wear a respirator approved by the National Institute for Occupational Safety and Health (NIOSH).

**Exposure Limits** This product contains material which are Trade Secret and may have Occupational Exposure Limits. If more information is required, call the product information number listed in Section 1.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	green
<b>Physical State</b>	liquid viscous
<b>pH</b>	6.5 - 7.5 (10 %) at 25 °C aqueous suspension
<b>Density</b>	ca. 1.15 g/cm <sup>3</sup> at 20 °C
<b>Viscosity</b>	600 - 950 mPa.s

**SECTION 10. STABILITY AND REACTIVITY**

**Chemical Stability** Stable under normal conditions.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredients, triadimefon and trifloxystrobin.

<b>Acute Oral Toxicity</b>	female rat: LD50: 3,129 mg/kg
<b>Acute Dermal Toxicity</b>	male/female rat: LD50: > 5,000 mg/kg
<b>Acute Inhalation Toxicity</b>	male/female rat: LC50: > 2.1 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. No deaths
	male/female rat: LC50: > 8.4 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
<b>Skin Irritation</b>	rabbit: No skin irritation.



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- Eye Irritation** rabbit: Mild eye irritation.
- Sensitization** guinea pig: Non-sensitizing.
- Chronic Toxicity** Triadimefon affected the liver and/or thyroid (secondary effects) in chronic studies in rats and dogs.  
  
Trifloxystrobin caused liver effects in chronic studies in mice and dogs.

**Assessment Carcinogenicity**

Triadimefon has been classified by EPA as a Group C (possible human carcinogen) based on borderline statistically significant increases in thyroid adenomas in male rats, and increases in liver adenomas in both sexes in mice. The Agency used a non-linear methodology approach for determining the Margin of Exposure (MOE) for the estimation of human cancer risk because the tumors were benign, and there were no apparent genotoxicity concerns. Therefore, EPA has a reasonable certainty that no harm will result from exposure to residues of triadimefon.

Trifloxystrobin is not carcinogenic based on oncogenicity studies in rats and mice.

- ACGIH**  
None.
- NTP**  
None.
- IARC**  
None.
- OSHA**  
None.

**Reproductive & Developmental Toxicity** **REPRODUCTION**  
Triadimefon caused reproductive effects (e.g., smaller litter sizes) in conjunction with parental toxicity at the highest dose tested in reproduction studies in rats.

Trifloxystrobin is not considered a primary reproductive toxicant in rats.

**DEVELOPMENTAL TOXICITY**  
Triadimefon and trifloxystrobin are not considered primary developmental toxicants in laboratory animals. Developmental effects were observed only at doses that caused maternal toxicity.

**Neurotoxicity** Triadimefon caused prominent hyperactivity-related neurobehavioral changes in acute (oral gavage) and subchronic (diet) neurotoxicity screening studies in rats. There were no neuropathologic alterations in the skeletal muscle or neural tissues in either study.

Trifloxystrobin is not a primary neurotoxicant based on an acute (oral gavage) neurotoxicity screening study in rats.

**Mutagenicity** Triadimefon and trifloxystrobin are not considered genotoxic based on in vitro and in vivo tests.



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**SECTION 12. ECOLOGICAL INFORMATION**

**Environmental Precautions** Toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to fish/aquatic organisms in adjacent sites. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Apply this product only as specified on the label.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**General Disposal Guidance** Pesticide wastes may be 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** Triple rinse containers. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or 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 shipment by any mode of transportation

**FREIGHT TRANSPORTATION:**  
Compounds, Tree or Weedkilling, N.O.I. other than poison, Having a density of greater than 20 LBS. per cubic foot

**SECTION 15. REGULATORY INFORMATION**

**EPA Registration No.** 432-1446

**US Federal Regulations**

**TSCA list**

None.

**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

None.

**SARA Title III - Section 302 - Notification and Information**

None.

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

Triadimefon 43121-43-3

1.0%

**US States Regulatory Reporting**



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**CA Prop65**

This product does not contain any substances known to the State of California to cause cancer.

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Triadimefon	43121-43-3	Developmental toxin.
Triadimefon	43121-43-3	Female reproductive toxin.
Triadimefon	43121-43-3	Male reproductive toxin.

**US State Right-To-Know Ingredients**

Triadimefon	43121-43-3	NJ
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**Canadian Regulations**

**Canadian Domestic Substance List**

None.

**Environmental**

**CERCLA**

None.

**Clean Water Section 307 Priority Pollutants**

None.

**Safe Drinking Water Act Maximum Contaminant Levels**

None.

**International Regulations**

**European Inventory of Existing Commercial Substances (EINECS)**

Triadimefon	43121-43-3
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**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

Health - 2      Flammability - 1      Reactivity - 0      Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: New Material Safety Data Sheet.

Revision Date: 02/09/2006

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