



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

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M0000618 "DuPont" "UPPERCUT" FUNGICIDE
Revised 11-APR-2008

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"UPPERCUT" is a registered trademark of DuPont.

"DuPont" is a trademark of DuPont.

Tradenames and Synonyms

TEBUCONAZOLE

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
TEBUCONAZOLE	80443-41-0	38.7
alpha-[2-(4-chlorophenyl)ethyl]-alpha-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol		
INERT INGREDIENTS		61.3

HAZARDS IDENTIFICATION

Emergency Overview

CAUTION! Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes, and clothing. Avoid breathing vapor or spray mist.

(HAZARDS IDENTIFICATION - Continued)

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 studies 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.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

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 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.

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.

IF INHALED: Move person 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 poison control center or doctor for further treatment advice.

For medical emergencies involving this product, call toll free 1-800-441-3637. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

(FIRST AID MEASURES - Continued)

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.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : >200 F (>93 C)

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.

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. Remove sources of ignition if combustible or flammable vapors may be present and ventilate area. 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 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.

HANDLING AND STORAGE

Handling (Personnel)

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.

Storage

Do not contaminate water, food or feed by storage.

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.

Handle and open container in a manner as to prevent spillage. If container is leaking invert to prevent leakage. If the container is leaking or material is spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below. In spill or leak incidents, keep unauthorized people away.

STORAGE TEMPERATURE (MIN/MAX): None/30-day average not to exceed 100°F.

SHELF LIFE: Time/temperature dependent.

SPECIAL SENSITIVITY: Extreme heat

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

Personal Protective Equipment

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category C on an EPA chemical-resistance category selection chart.

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 or viton.
- Shoes plus socks.

Follow 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.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls.
- Chemical-resistant gloves, such as barrier laminate or butyl rubber or nitrile rubber or neoprene rubber or polyvinyl chloride or viton.
- Shoes plus socks.

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. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

Exposure Guidelines

Exposure Limits

"DuPont" "UPPERCUT" FUNGICIDE
PEL (OSHA) : None Established
TLV (ACGIH) : None Established

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Physical State : Liquid; Suspension
Color : Off-white
Odor : Chalky
Molecular Weight : 307.8 (for tebuconazole)
pH : 7
Boiling Point : Not applicable
Melting/Freezing Point : Freezing: Less than 32°F

(PHYSICAL AND CHEMICAL PROPERTIES - Continued)

Viscosity : 800-1200 cps @ 25°C
Solubility in Water : Dispersible
Specific Gravity : 1.12 @ 20°C/20°C
Bulk Density : 32 ppm @ 20°C (for tebuconazole)
Vapor Pressure : 9.8 x 10⁽⁻⁹⁾ mmHg @ 20°C (for
tebuconazole)

STABILITY AND REACTIVITY

Chemical Stability

Stability : This is a stable material.
Hazardous Polymerization : Will not occur.
Incompatibilities : None known.
Instability Conditions : None known for active ingredient:
product may gel if left at high
temperatures for long periods of
time.
Decomposition Products : Proposed under fire or other
extreme conditions: CO₂, oxides
of nitrogen.

TOXICOLOGICAL INFORMATION

Animal Data

ACUTE TOXICITY

ORAL LD50: 3776 mg/kg (Male Rat)
3710 mg/kg (Female Rat)

DERMAL LD50: >2011 mg/kg (Male and Female Rat)

INHALATION LC50: 4 hour exposure to liquid aerosol:
>2.510 mg/l (analytical)
(Male and Female Rat)

1 hour exposure to liquid aerosol
(extrapolated from 4 hour LC50):
>10,040 mg/L (analytical)
(Male and Female Rat)

EYE EFFECTS: Minimal (non remarkable) irritation to the
conjunctiva was observed with all
irritation resolving within 7 days.
(Rabbit)

SKIN EFFECTS: Slight dermal irritant. (Rabbit)

SENSITIZATION: Not a dermal sensitizer. (Guinea Pig)

SUBCHRONIC TOXICITY: In dermal toxicity studies using

(TOXICOLOGICAL INFORMATION - Continued)

rabbits, tebuconazole was administered at doses up to and including 1000 mg/kg for 6 hours/day, 5 days/week for a period of 3 weeks. There were no local or systemic effects observed at any of the levels tested. The no observed effect level (NOEL) was 1000 mg/kg. In a 3 week inhalation study, rats were exposed to tebuconazole for 6 hours/day, 5 days/week at aerosol concentrations of 1.2, 10.6, or 155.8-mg/cubic meter. Liver enzyme effects were observed at the high concentration. 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: Tebuconazole was investigated for carcinogenicity in feeding studies using rats and mice. 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: Numerous in vitro and in vivo mutagenicity studies have been conducted on tebuconazole, all of which are negative.

DEVELOPMENTAL TOXICITY: Tebuconazole has been evaluated for developmental toxicity in oral studies using mice, rats and rabbits. In mice treated at dose levels ranging from 1-100 mg/kg, the NOELS for maternal and developmental toxicity were 3 and 10 mg/kg, respectively. When rats were 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 treated at dose levels of 10, 30, or 100 mg/kg, 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, tebuconazole was

(TOXICOLOGICAL INFORMATION - Continued)

administered to rats at dietary concentrations of 100, 300, or 1000 ppm for 2 generations. 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 100 mg/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, tebuconazole was administered to rats at dietary concentrations of 100, 400, or 1600 ppm. 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. There was no evidence of neurotoxicity at any dietary concentration. The NOEL for microscopic lesions was 1600 ppm, the highest concentration tested. The NOEL for overall toxicity was 400 ppm. In a one generation developmental neurotoxicity study, tebuconazole was administered to rats at dietary concentrations of 100, 300 or 1000 ppm 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 decreases in number of live born, 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.

ECOLOGICAL INFORMATION

Ecotoxicological Information

This product is toxic to estuarine and marine invertebrates. As with any pesticide, this product should be used according to label directions and should be kept out of streams, lakes, and other aquatic habitats.

DISPOSAL CONSIDERATIONS

Waste Disposal

Do not contaminate water, food or feed by disposal.

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

ENVIRONMENTAL HAZARDS:

This pesticide is toxic to freshwater, estuarine and marine fish and invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

Container Disposal

Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities by burning. If burned, stay out of smoke.

TRANSPORTATION INFORMATION

Shipping Information

TECHNICAL SHIPPING NAME : Tebuconazole
FREIGHT CLASS BULK : Fungicides, NOI (NMFC 102120)
FREIGHT CLASS PACKAGE : Fungicides, NOI (NMFC 102120)

DOT (DOMESTIC SURFACE)
Hazard Class or Division : Non-Regulated

IMO/IMDG CODE (OCEAN)
Hazard Class Division Number : Non-Regulated

ICAO/IATA (AIR)
Hazard Class Division Number : Non-Regulated

REGULATORY INFORMATION

U.S. Federal Regulations

OSHA:

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

(REGULATORY INFORMATION - Continued)

TSCA:

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 (Acute) and Delayed (Chronic) Health Hazard.

SECTION 313 TOXIC CHEMICALS: None

RCRA STATUS:

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24).

EPA Reg. No. 264-752-352

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA 704M Ratings:

Health: 1
Flammability: 1
Reactivity: 1

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS: DuPont Crop Protection
Address : Wilmington, DE 19898
Telephone : 1-888-638-7668

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS