



# Material Safety Data Sheet

Quash™ Fungicide

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Quash™ Fungicide  
**EPA REGISTRATION NUMBER:** 59639-147  
**PRODUCT CODE:** 61700  
**VC NUMBER(S):** 1585  
**SYNONYM(S):** V-10116 50 WDG, Metconazole 50 WDG, Tourney Fungicide

### MANUFACTURER/DISTRIBUTOR

VALENT U.S.A. CORPORATION  
P.O. Box 8025  
1600 Riviera Avenue, Suite 200  
Walnut Creek, CA 94596-8025

### EMERGENCY TELEPHONE NUMBERS

HEALTH EMERGENCY OR SPILL (24 hr.):  
(800) 892-0099  
TRANSPORTATION (24 hr.): CHEMTREC  
(800) 424-9300 or (202) 483-7616

### PRODUCT INFORMATION

AGRICULTURAL PRODUCTS: (800) 682-5368

MSDS Location: The current MSDS is available through our website or by calling the product information numbers listed above. ([www.valent.com](http://www.valent.com))

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

#### CAUTION

- Harmful if swallowed
- May cause moderate eye irritation
- May cause skin and respiratory irritation
- Avoid contact with eyes, skin and clothing
- Keep out of reach of children

### POTENTIAL HEALTH EFFECTS

**Acute Toxicity (Primary Routes of Exposure):** None known

**Acute Eye Contact:** This product can cause brief and/or minor eye irritation. The expected adverse health effects resulting from an exposure may include redness and possible swelling.

**Acute Skin Contact:** This product can cause brief and/or minor irritation. The expected adverse health effects resulting from an exposure may include redness and possibly some minor swelling. This product is minimally toxic when absorbed through the skin. This product is not expected to cause allergic skin reactions.

**Acute Ingestion:** This product is slightly toxic when ingested.

**Acute Inhalation:** This product is minimally toxic when inhaled. Exposure to high concentrations in the air may result in respiratory irritation. Signs and symptoms may include, but not be limited to, nasal discharge, sore throat, coughing and difficulty in breathing.

**Emergency Telephone:** (800) 892-0099  
**REVISION NUMBER:** 4

**MSDS NO.:** 0377  
**REVISION DATE:** 11/03/2009

**Chronic Toxicity (including cancer):** In long-term (> 28 days) studies, Metconazole Fungicide Technical produced toxic effects on the liver, blood, spleen, kidney and gastrointestinal tract. Increased liver adenomas and adenocarcinomas were observed in mice, but these tumors are unlikely to be relevant to humans.

This material contains a small amount of crystalline silica. Repeated inhalation of large amounts of silica dust over an extended period of time may result in a progressive, disabling disease, silicosis. The International Agency for Research on Cancer (IARC) has determined that respirable crystalline silica is carcinogenic to humans. The National Toxicology Program (NTP) classifies respirable crystalline silica as a known carcinogen.

**Developmental Toxicity (birth defects):** At doses producing maternal toxicity malformations were observed in the fetuses of rats and rabbits treated with Metconazole Fungicide Technical during gestation.

**Reproductive Toxicity:** Metconazole Fungicide Technical was tested in a 2-generation rat reproduction study. At maternally toxic doses, effects were noted on estrus cycling, litter size, gestation length and pup body weight.

**Signs and Symptoms of Systemic Effects:** No Data Available

**Potentially Aggravated Medical Conditions:** Individuals with preexisting diseases of the liver or blood may have increased susceptibility to the toxicity of excessive exposures.

For complete discussion of the toxicology data from which this evaluation was made, refer to Section 11. For Ecotox/Environmental Information, refer to Section 12. For Regulatory Information, refer to Section 15.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight/ Percent	Purpose
Metconazole (5-[(4-chlorophenyl)methyl]-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol)	125116-23-6	48.5 - 51.5	Active Ingredient
Others	Various CAS#s	48.4-51.5	Other Ingredients

Other ingredients, which are maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identities are withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling **(800) 892-0099** at any time.

### 4. FIRST AID MEASURES

#### EMERGENCY NUMBER (800) 892-0099

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

#### EYE CONTACT:

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.

#### SKIN CONTACT:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

#### INGESTION:

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.

**INHALATION:**

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, if possible. Call a poison control center or doctor for further treatment advice.

**NOTES TO PHYSICIAN:**

None

**5. FIRE FIGHTING MEASURES**

<b>FLASH POINT:</b>	Not applicable	
<b>AUTOIGNITION:</b>	No data available	
<b>EXTINGUISHING MEDIA:</b>	Water fog, carbon dioxide, foam, dry chemical	
<b>FLAMMABLE LIMITS IN AIR - LOWER (%):</b>		Not applicable
<b>FLAMMABLE LIMITS IN AIR - UPPER (%):</b>		Not applicable

**NFPA RATING:**

Health:	1
Flammability:	1
Reactivity:	0
Special:	None

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

**FIRE FIGHTING INSTRUCTIONS:** Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxides of sodium, sulfur and phosphorus

**6. ACCIDENTAL RELEASE MEASURES**

**VALENT EMERGENCY PHONE NUMBER: (800) 892-0099**  
**CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300**  
**OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION**

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. For additional spill response information refer to the North American Emergency Response Guidebook.

**UN/NA NUMBER:** Not applicable      **EMERGENCY RESPONSE GUIDEBOOK NO.:** Not applicable

**FOR SPILLS ON LAND:**

**CONTAINMENT:** Reduce airborne dust. Avoid runoff into storm sewers or other bodies of water.

**CLEANUP:** Clean up spill immediately. Vacuum or sweep up material and place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

**FOR SPILLS IN WATER:**

**CONTAINMENT:** This material will disperse or dissolve in water. Stop the source of the release. Contain and isolate to prevent further release into soil, surface water and ground water.

**CLEANUP:** Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

## 7. HANDLING AND STORAGE

**END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.**

**HANDLING:**

Avoid contact with eyes, skin or clothing. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Wear protective clothing and equipment when handling this product. Goggles or protective eyewear, gloves, long-sleeved shirt, long pants, socks and shoes are appropriate.

**STORAGE:**

Keep pesticide in original container. Do not store or transport near food or feed. Do not contaminate food or feed. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers. Store in a cool, dry place, away from heat, flame and strong acids.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.**

**EYES & FACE:** Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

**RESPIRATORY PROTECTION:** Use this material only in well ventilated areas. Unless ventilation is adequate to keep airborne concentrations below recommended exposure standards, approved respiratory protection should be worn.

**SKIN & HAND PROTECTION:** Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including gloves.

**EXPOSURE LIMITS**

Chemical Name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
Metconazole (5-[(4-chlorophenyl)methyl]-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol)	None	None	None
Others	None	None	None

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>PHYSICAL FORM:</b>	Granule
<b>COLOR:</b>	Dark brown
<b>ODOR:</b>	No data available
<b>FLASH POINT:</b>	Not applicable
<b>BULK DENSITY:</b>	32 - 33 lb/ft <sup>3</sup>
<b>pH:</b>	8 - 9 @ 25° C (1% w/v in water)
<b>SOLUBILITY:</b>	Dispersible in water

## 10. STABILITY AND REACTIVITY

<b>CHEMICAL STABILITY:</b>	Stable at normal ambient temperatures.
<b>INCOMPATIBILITY:</b>	Strong acids and oxidizing agents.
<b>OXIDATION/REDUCTION PROPERTIES:</b>	No chemical incompatibility in contact with water, monoammonium phosphate, zinc, and potassium permanganate.
<b>EXPLODABILITY:</b>	Not expected to be explosive
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Oxides of sodium, sulfur and phosphorus
<b>CONDITIONS TO AVOID:</b>	High heat and humidity

## 11. TOXICOLOGICAL INFORMATION

### ACUTE TOXICITY:

Oral Toxicity LD <sub>50</sub> (rats)	= 1,750 mg/kg	EPA Tox Category	III
Dermal Toxicity LD <sub>50</sub> (rabbits)	> 5,000 mg/kg	EPA Tox Category	IV
Inhalation Toxicity LC <sub>50</sub> (rats)	> 2.27 mg/L	EPA Tox Category	IV
Eye Irritation (rabbits)	Moderately irritating	EPA Tox Category	III
Skin Irritation (rabbits)	Brief and/or minor irritation	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not applicable

### CARCINOGEN CLASSIFICATION

#### TOXICITY OF METCONAZOLE TECHNICAL

**SUBCHRONIC:** Subchronic (28 to 90 days) studies of Metconazole Fungicide Technical in rodents and dogs reported decreased body weights, fatty vacuolation and hypertrophy of the liver, reduced RBC parameters, increased serum liver enzyme levels, and increased spleen and liver weights. The lowest no-observable-effect level (NOEL) was 2.5 mg/kg/day.

**CHRONIC/CARCINOGENICITY:** In a one-year dog study, Metconazole Fungicide Technical produced effects on liver histopathology, increase serum liver enzymes and bleeding/irritation in the gastrointestinal tract. The NOEL was 11.1 mg/kg/day. In a 2-year study in rats, Metconazole Fungicide Technical produced histological changes in the liver, kidney and adrenal and possibly leukemia. The NOEL for this study was 4.8 mg/kg/day. In an 18-month mouse study, increased white blood cell count, increased serum liver enzymes increased liver weights, histopathological changes in the liver, spleen and adrenal and increased liver adenomas and adenocarcinomas were observed at doses of 300 ppm or higher. The NOEL in mice was 4.8 mg/kg/day. The mechanism of liver tumor formation in mice is believed to be not relevant to humans.

**DEVELOPMENTAL TOXICITY:** Malformations were observed in the fetuses of rats and rabbits treated with Metconazole Fungicide Technical during gestation. The NOELs in rats and rabbits are 16 and 20 mg/kg/day, respectively.

**REPRODUCTION:** Metconazole Fungicide Technical was tested in a 2-generation rat reproduction study. At maternally toxic doses effects were noted on estrus cycling, litter size, gestation length and pup body weight. The NOEL was 10.6 mg/kg/day.

**MUTAGENICITY:** Not considered a genotoxic hazard. Negative in gene mutation assays *in vitro*, in *in vivo/in vitro* UDS assays and in *in vivo* micronucleus assays in mice. Positive in an *in vitro* chromosome aberration assay in the presence of S-9 but not observed in the *in vivo* assay.

#### TOXICITY OF OTHER INGREDIENTS:

This product contains crystalline silica. Repeated inhalation of the dust may cause insidious lung injury and possibly silicosis. In patients with silicosis, areas of the lung become filled with scar tissue. The signs and symptoms may include cough, shortness of breath, difficulty in breathing, and loss of weight. The disease can progressively worsen and result in death. In their Monograph - Volume 42, the International Agency for Research on cancer (IARC) classified crystalline silica as a probable human carcinogen. Users of this product should confirm that their operating, storage, and distribution facilities comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for all materials containing more than 0.1% crystalline silica. Employee exposures to airborne crystalline silica dust should be controlled to below the OSHA 8 hour PEL for the particular type of crystalline silica present.

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 2. For information regarding regulations pertaining to this product, refer to Section 15.

**12. ECOLOGICAL INFORMATION**

**AVIAN TOXICITY:** Based upon EPA designation, Metconazole Technical is practically non-toxic to mallard ducks and slightly toxic to bobwhite quail. Test results include:

Oral LD<sub>50</sub> bobwhite quail: 875 mg/kg  
Dietary LC<sub>50</sub> bobwhite quail: 1,057 mg/kg  
Dietary LC<sub>50</sub> mallard duck: > 5,200 mg/kg

**AQUATIC ORGANISM TOXICITY:** Based upon EPA designation, Metconazole Technical is moderately toxic to fish and freshwater invertebrates and highly toxic to marine invertebrates. Test results include:

LC<sub>50</sub> (96 hr) Fathead Minnow: 6.3 mg/L  
LC<sub>50</sub> (96 hr) Rainbow Trout: 2.2 mg/L  
LC<sub>50</sub> (96 hr) Sheepshead Minnow: 3.9 mg/L  
LC<sub>50</sub> (48 hr) Daphnia magna: 4.2 mg/L  
LC<sub>50</sub> (96 hr) Mysid Shrimp: 0.75 mg/L  
EC<sub>50</sub> (96 hr) Oyster Shell Deposition: 2.3 mg/L  
EC<sub>50</sub> (72 hr) Green Algae: 1.7 mg/L  
EC<sub>50</sub> (96 hr) Blue-green Algae: > 13 mg/L  
EC<sub>50</sub> (96 hr) Fresh Water Diatom: 0.0098 mg/L  
EC<sub>50</sub> (96 hr) Marine Diatom: 1.7 mg/L  
EC<sub>50</sub> (7 day) Duckweed: > 0.17 mg/L

The contact LD<sub>50</sub> (96 hr) of Metconazole Technical to the honeybee is >90 µg/bee.

**13. DISPOSAL CONSIDERATIONS**

**END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.**

**DISPOSAL METHODS:** Check government regulations and local authorities for approved disposal of this material. Dispose in accordance with applicable laws and regulations. Do not contaminate water, food or feed by disposal. Disposal of waste and used containers must be in accordance with applicable Federal, State and local regulations. Do not flush to surface water or sanitary sewer system.

**14. TRANSPORT INFORMATION**

<b>DOT:</b>	Not regulated
<b>UN/NA NUMBER:</b>	Not applicable
<b>DOT (ground) SHIPPING NAME:</b>	Pesticide, Solid, Non-regulated
<b>TECHNICAL NAME (hazardous material):</b>	Not applicable
<b>HAZARD CLASS:</b>	Not applicable
<b>PACKING GROUP:</b>	Not applicable
<b>DOT REPORTABLE QUANTITY (RQ):</b>	Not applicable
<b>REMARKS:</b>	None
<b>EXEMPTION REQUIREMENT:</b>	None
<b>EMERGENCY RESPONSE GUIDEBOOK NO.:</b>	Not applicable
<b>MARINE POLLUTANT:</b>	Not applicable

**15. REGULATORY INFORMATION**

**PESTICIDE REGULATIONS:** All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

**U.S. FEDERAL REGULATIONS:**

Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

**SARA (311, 312):**

Immediate Health:	Yes
Chronic Health:	Yes
Fire:	No
Sudden Pressure:	No
Reactivity:	No

**STATE REGULATIONS:**

Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, California Directors List of Hazardous Substances, Massachusetts Right to Know, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 8 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

**Metconazole (5-[(4-chlorophenyl)methyl]-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol)**

NJ Right To Know	Listed
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For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

**16. OTHER INFORMATION**

<b>REASON FOR ISSUE:</b>	Corrected physical form and color. Add a synonym.
<b>MSDS NO.:</b>	0377
<b>EPA REGISTRATION NUMBER:</b>	59639-147
<b>REVISION NUMBER:</b>	4
<b>REVISION DATE:</b>	11/03/2009
<b>SUPERCEDES DATE:</b>	July 7, 2009
<b>RESPONSIBLE PERSON(S):</b>	Valent U.S.A. Corporation, Corporate EH&S, (925) 256-2803

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED 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 is regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling. 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-approved label.

The information in this MSDS is based on data available to us as of the revision date given herein, and believed to be correct. Contact Valent U.S.A. Corporation to confirm if you have the most current MSDS.

Judgements as to the suitability of information herein for the individual's own use or purposes are necessarily the individual's own responsibility. Although reasonable care has been taken in the preparation of such information, Valent extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to the individual's purposes or the consequences of its use.

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