



Material Safety Data Sheet

SUMAGIC™ Plant Growth Regulator

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SUMAGIC™ Plant Growth Regulator
PCPA REGISTRATION NUMBER: 25781
PRODUCT CODE: 85100
VC NUMBER(S): 1118
SYNONYM(S): None
PRODUCT DESCRIPTION: Plant Growth Regulator

MANUFACTURER/DISTRIBUTOR

VALENT CANADA, INC.
107 Woodlawn Road West
Suite 502 - B
Guelph ONT N1H 1B4

EMERGENCY TELEPHONE NUMBERS

HEALTH EMERGENCY OR SPILL (24 hr.):
(800) 682-5368
TRANSPORTATION (24 hr.): CHEMTREC
(800) 424-9300 or (202) 483-7616

Product Information

AGRICULTURAL PRODUCTS: (800) 682-5368

The current MSDS is available through our website or by calling the product information numbers listed above. (www.valent.ca)

2. HAZARDS IDENTIFICATION

Emergency Overview

- Caution**
- Causes eye irritation
 - Avoid contact with eyes, skin and clothing
 - Avoid breathing vapor or dust
 - 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 minimally toxic when ingested.

Acute Inhalation: This product is minimally toxic when inhaled.

Chronic Toxicity (including cancer): Uniconazole-P produced liver tumors in mice but is not considered a human carcinogen. Anemia and changes in the liver were the primary effects observed at high dose levels in animals.

Developmental Toxicity (birth defects): Uniconazole-P produced effects on the developing fetus only at doses that were also toxic to the pregnant female.

Emergency Telephone: 800-682-5368
REVISION NUMBER: 2

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Reproductive toxicity: Uniconazole-P Technical did not produce reproductive toxicity in animals.

Signs and Symptoms of Systemic Effects: Signs of toxicity observed in animals at high dose levels of Uniconazole-P include decreased activity, poor coordination, irregular respiration and liver toxicity.

Potentially Aggravated Medical Conditions: Individuals with preexisting diseases of the liver or kidney 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
Uniconazole-P ((E)-(+)-(S)-1-(4-chlorophenyl)-4,4-dimethyl-2-(1,2,4-triazol-1yl)-pent-1-ene-3-ol) *	83657-17-4	NF	Active ingredient
Cyclohexanone	108-94-1	3 - 7	Solvent
Others	No CAS#	60 - 100	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 identity is 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) 682-5368** at any time.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 682-5368

Have the product container or label with you when calling a poison control centre or doctor, or going for treatment. You may also contact **1-800-682-5368** 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 centre 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 centre 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, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

Notes to physician:

None

5. FIRE FIGHTING MEASURES

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5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable
AUTOIGNITION: Donnée non disponible
EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam, dry chemical

FLAMMABLE LIMITS IN AIR - LOWER (%): Not applicable
FLAMMABLE LIMITS IN AIR - UPPER (%): 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. Smoke and fumes are extremely irritating to eyes, nose, throat and lungs. 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. Read the entire document.

Hazardous decomposition products: No Data Available

6. ACCIDENTAL RELEASE MEASURES

VALENT EMERGENCY PHONE NUMBER: (800) 682-5368
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: Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents.

CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then 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 forms an emulsion in water. Stop or reduce contamination of any water. Isolate contaminated water.

CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then 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.

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7. HANDLING AND STORAGE

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

Handling:

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.

Storage:

Do not store at temperatures below 32°F. If the product is exposed to temperatures below 32°F, thaw at room temperature to 50°F or warmer and shake gently to unify the product.

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	Canadian OELs
Uniconazole-P ((E)-(+)-(S)-1-(4-chlorophenyl)-4,4-dimethyl-2-(1,2,4-triazol-1-yl)-pent-1-ene-3-ol) *	none
Cyclohexanone	none
Others	none

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM:	Liquid
COLOUR:	Colourless, clear to slightly hazy
ODOUR:	Solvent odour
FLASH POINT:	Not applicable
BOILING POINT:	No data available
Density:	1.005 g/ml @ 20°C
VAPOUR PRESSURE:	No data available
pH:	6 - 8
Viscosity:	No data available
CORROSION CHARACTERISTICS:	no data available
SOLUBILITY:	Emulsifiable in water.

10. STABILITY AND REACTIVITY

Chemical stability:	Stable at normal ambient temperatures. Do not store at temperatures below 32° F (0° C).
Incompatibility:	Not determined
Oxidation/Reduction properties:	No data available
Explosibility:	Not expected to be explosive
Hazardous decomposition products:	No Data Available

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Oral Toxicity LD ₅₀ (rats)	> 5000 mg/kg	EPA Tox Category	IV
Dermal Toxicity LD ₅₀ (rabbits)	> 5000 mg/kg	EPA Tox Category	IV
Inhalation Toxicity LC ₅₀ (rats)	> 5.9 mg/L	EPA Tox Category	IV
Eye Irritation (rabbits)	Slightly irritating	EPA Tox Category	III
Skin Irritation (rabbits)	Non-irritating	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not available

CARCINOGEN CLASSIFICATION

Chemical Name	IARC - Group 1 (carcinogenic to humans)	IARC - Group 2A (Probably carcinogenic)	IARC - Group 2B (Possibly carcinogenic)	NTP Carcinogen List
Cyclohexanone	no	no	no	Not listed
Others	no	No	no	Not listed
Uniconazole-P ((E)-(+)-(S)-1-(4-chlorophenyl)-4,4-dimethyl-2-(1,2,4-triazol-1yl)-pent-1-ene-3-ol) *	no	no	no	Not listed

TOXICITY OF UNICONAZOLE-P TECHNICAL

Subchronic: Anemia, liver effects, thyroid changes and altered lipid metabolism were observed in rats treated with 1000 ppm or greater Uniconazole-P Technical in the diet for 3 months. The No-Observable-Effect-Level (NOEL) was 100 ppm (10 mg/kg/day). Anemia, liver effects, and clinical chemistry changes were observed in mice treated with 1000 ppm or greater Uniconazole-P Technical in the diet for 5 weeks. The No-Observable-Effect-Level (NOEL) was 300 ppm. Liver effects, and clinical chemistry changes were observed in dogs treated with 20mg/kg/day or greater Uniconazole-P Technical for 3 months. The No-Observable-Effect-Level (NOEL) was 5mg/kg/day. Skin irritation, and liver changes were observed at 25 mg/kg/day or higher in a 28-day dermal study in rats. The NOEL was 5 mg/kg/day.

Chronic/Carcinogenicity: A cancer bioassay in mice revealed an increased incidence of liver tumors among males exposed to 210 mg/kg/day Uniconazole-P via the diet. There was no increase in tumors of any type in males exposed to 1-25 mg/kg/day or in any of the treated female groups (1.5-240 mg/kg/day). The biological significance of this finding is unclear because the tumors arose late in the study and fewer untreated animals were still alive at that time. Uniconazole-P was not carcinogenic in rats exposed to 0.4-40 mg/kg/day in the diet for a lifetime. The only toxic effects observed in rats were decreased body weight gains and changes in the blood chemistry and liver cell. Repeated oral or dermal exposure to Uniconazole-P resulted in non-specific depression of the central nervous system and changes in the liver, kidney, and blood systems in rats, mice, and dogs at dose levels greater than 15, 140, and 20 mg/kg/day for the three species, respectively. The most prominent effects were produced in the liver. A chronic toxicity study in dogs revealed blood chemistry changes, increased liver, kidney, and adrenal weights, and decreased thymus weights at levels of 20-200 mg/kg/day. The only cellular effect observed was liver cell enlargement.

Developmental Toxicity: In teratology studies, minor skeletal variations were observed in the offspring of rats exposed to 25 mg/kg/day Uniconazole-P, a dose that was also toxic to the dam. The NOEL for this study was 5 mg/kg/day. No evidence of developmental toxicity or teratogenicity was seen in rabbits.

Reproduction: Uniconazole-P did not produce malformations or adverse reproductive effects in a two-generation rat reproduction study.

Mutagenicity: Genetic toxicity tests in cultured mammalian cells and in mice indicate that Uniconazole-P may damage genetic material, but only at dose levels that are severely toxic to the test organisms. Uniconazole-P was not mutagenic in bacteria.

TOXICITY OF OTHER INGREDIENTS:

Overexposure to cyclohexanone may cause cataracts, liver and kidney damage and is reported to effect the fetus in animal studies.

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:

Uniconazole-P Technical is toxic to avian species. The following results were obtained from studies with technical:
 Oral LD₅₀ bobwhite quail: 1461 mg/kg;
 Oral LD₅₀ mallard duck: >2315 mg/kg;
 Dietary LC₅₀ bobwhite quail: >5782 ppm;
 Dietary LC₅₀ mallard duck: 3345 ppm.
 One generation reproduction, bobwhite quail: NOEC = 320 ppm
 One generation reproduction, mallard duck: NOEC = 80 ppm, treatment related effects observed at 320 ppm

AQUATIC ORGANISM TOXICITY:

Uniconazole-P Technical is toxic to freshwater fish; toxic to freshwater invertebrates; toxic to estuarine/marine fish and toxic estuarine/marine invertebrates, based on the following tests:
 96-hour LC₅₀ rainbow trout: 14.8 mg/L;
 96-hour LC₅₀ bluegill sunfish: 8.2 mg/L;
 96-hour LC₅₀ carp: 7.5 mg/L
 48-hour LC₅₀ Daphnia magna: >10 mg/L.

OTHER NON-TARGET ORGANISM TOXICITY:

Uniconazole-P Technical is not toxic to bees. No mortality was produced in an acute contact LC₅₀ in bees at 20 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.

14. TRANSPORT INFORMATION

UN/NA Number:	Not applicable
DOT (ground) shipping name:	Plant Growth Regulator, non-regulated
Technical Name (hazardous material):	Not applicable
Hazard class:	Not applicable
Packing group:	Not applicable
DOT reportable quantity (RQ):	20,000 gallons (cyclohexanone RQ=5,000 lbs)
Remarks:	None
Exemption requirement:	None
Emergency Response Guidebook No.:	Not applicable
Marine pollutant:	Not applicable

15. REGULATORY INFORMATION

CANADIAN REGULATIONS:

WHMIS Hazard Class: D2B Toxic materials

This product is not listed on Canada's DSL/NDSL List.
This product is not listed on Canada's Ingredient Disclosure List.

A component of this product (CAS# 108-94-1) is listed on Canada's DSL/NDSL List
A component of this product (CAS# 108-94-1) has a WHMIS classification of B3, D2B.
A component of this product (CAS# 9005-64-5) is listed on Canada's DSL/NDSL List.

Cyclohexanone

Canada DSL Inventory List -	Listed
EINECS Inventory List -	203-631-1

Others

Canada DSL Inventory List -	Present/Not determined
Canada NDSL Inventory List -	Not listed/Not determined
EINECS Inventory List -	Present/Not determined

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

PESTICIDE REGULATIONS: All pesticides are governed under PCPA (Pest Control Products 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.

16. OTHER INFORMATION

REASON FOR ISSUE:	Changed Product Name from ® to ™ .
MSDS NO.:	CAN-0042
PCPA REGISTRATION NUMBER:	25781
REVISION NUMBER:	2
REVISION DATE:	08/28/2009
SUPERCEDES DATE:	July 29, 2009
RESPONSIBLE PERSON(S):	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 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 are regulated by the PMRA under the authority of the Pest Control Products Act through the product labeling. All necessary and appropriate precautionary, use, storage and disposal information is set forth on the labeling. It is a violation of Federal law to use a pesticide product in a manner not prescribed on the PMRA-accepted 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.

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