

## SAFETY DATA SHEET

### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

**Product identifier:** TopGuard Terra™ Fungicide  
**EPA Reg. No.** 67760-126

**Product use:** Fungicide.

**Supplier's name and address:**

**Cheminova Inc.**

P.O. Box 110566  
One Park Drive, Suite 400  
Research Triangle Park, NC 27709  
USA

Phone #: (919) 474-6600 (8 AM to 5:00 PM EST, Monday to Friday)

**Emergency Telephone #:** 1-866-303-6950 (Medical Emergencies)  
1-800-424-9300 (24 Hr. Chemtrec Number)

**Manufacturer's name and address:**

Refer to supplier.

**SDS Prepared by:** Cheminova Inc.

**SDS Preparation date:** February 3, 2015

### SECTION 2 — HAZARDS IDENTIFICATION

**GHS Signal Word:**

Warning

**Classification:**

Health	Environmental	Physical
Acute toxicity – Oral – Category 4	Aquatic Toxicity – Chronic 2	Not applicable

**GHS Pictogram:**



**Hazard Statements:**

Harmful if swallowed. Harmful if absorbed through skin. Causes moderate eye irritation.

**Precautionary Statements:**

**Prevention:**

Wash hands thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Avoid release to the environment.

**Response:**

If swallowed: Call a doctor immediately if ingested.  
Rinse mouth.  
Collect spillage.

**Storage:**

None

**Disposal:**

Dispose of contents/container according to label directions.

### SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Flutriafol (1H-1,2,4-Triazole-1-ethanol, $\alpha$ -(2-fluorophenyl)- $\alpha$ -(4-fluorophenyl)-	76674-21-0	42	NE	NE
Inert ingredients, including:		58		
Sodium alkyl naphthalene sulphate formaldehyde condensate	577773-56-9		NE	NE
1,2-Benzisothiazol-3(2H)-one	2634-33-5		NE	NE

NE= None established

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

#### SECTION 4 — FIRST AID MEASURES

- IF SWALLOWED:** Have person sip a glass of water if able to swallow.  
Do not induce vomiting unless told to by a poison control center or doctor.  
Do not give anything by mouth to an unconscious person.  
Call a poison control center or doctor immediately for treatment advice.
- IF ON SKIN OR CLOTHING:** 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.
- 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.  
Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or when going for treatment. You may also contact 1-866-303-6950 (24-hours) for emergency medical treatment information.

**Note to Physician:** No specific antidote. Treat symptomatically.

**Most important symptoms and effects, both acute and delayed:** Adverse effects in human have not been reported. When fed to animals at high dosage, similar compounds caused salivation, depression of activity, muscle spasms, ataxia and increased body temperature.

**Indication of any immediate medical attention and special treatment needed:** Immediate medical attention is required if swallowed.

#### SECTION 5 — FIRE FIGHTING MEASURES

- Flash point:** 221.2° F (105.1° C)
- Flammable limits (% by volume):** Not determined
- Explosive properties:** Not explosive
- Suitable extinguishing media:** Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.
- Special fire-fighting procedures/equipment:** Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Fire fighters should wear self-contained breathing apparatus and protective clothing.
- Special hazards arising from the substance or mixture:** The essential breakdown products are volatile, malodorous, toxic, irritant and inflammable compounds such as hydrogen fluoride, nitrogen oxides, sulphur dioxide, carbon monoxide, carbon dioxide and various fluorinated organic compounds.

#### SECTION 6 — ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill, this may mean wearing respirator, face mask or safety glasses, chemical resistant clothing, protective gloves and rubber boots when cleaning up spills. See Section 8, Personal Protection. Stop the source of the spill immediately if safe to do so. Avoid and reduce mist formation as much as possible. It is recommended to have a predetermined plan for the handling of spills. Empty, closed containers for the collection of spills should be available.

**Environmental precautions:** Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

**Spill response/Cleanup:** If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, hydrated lime, Fuller's earth or other absorbent clays. Transfer to suitable containers. Clean area with strong industrial detergent and much water. Absorb wash liquid onto inert absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and placed in suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Refer to Section 13 for disposal.

## SECTION 7 — HANDLING AND STORAGE

**Safe handling procedures:** Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and shoes. Take a shower, using water and soap. Wear only clean clothes when leaving the job. Wash protective clothing and protective equipment with water and soap after use. Do not discharge to the environment. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste.

**Storage recommendations:** Protect from fire and heat. This product is stable under normal conditions of warehouse storage. Do not contaminate water, food, or feed by storage and disposal. Store in the original container in a dry area. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. A warning sign reading "POISON" is recommended. Follow all state and federal regulations. If spilled during storage or handling, absorb with sand or other inert material and dispose of absorbent in accordance with label instructions and Section 13.

## SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Ventilation and engineering controls:** If handled indoors, provide mechanical exhaust ventilation to minimize concentrations.

**Protective gloves:** Wear chemical-resistant gloves: barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride or Viton®.

**Eye protection:** Wear protective eyewear. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for eye contact.

**Respiratory protection:** The product is not likely to present an airborne exposure concern during normal handling, but in the event of a discharge of the material which produces a heavy vapour or mist, workers should put on officially approved face mask or respiratory protection equipment.

**Other protective equipment:** Wear long-sleeved shirt and long pants, shoes and socks. Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure.

**Permissible exposure levels:** See Section 3.

**General hygiene considerations:** Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Cream colored liquid (suspension in water)

**Odor:** Weak alcoholic odor

**Odor threshold:** ND

**pH:** Undiluted: 5.7  
1% dilution in water: 5.4

**Melting point/Freezing point:** <0° C

**Initial boiling point and boiling range:** >100° C

**Flash point:** 221.2° F (105.1° C)

**Evaporation rate:** ND

**Flammability:** NA

**Upper/lower flammability or explosive limits:** ND

**Vapor pressure:** **Flutriafol:**  $7.1 \times 10^{-09}$  Pa @ 20° C

**Vapor density:** ND

**Relative density:** 1.19 @ 20° C

**Solubility(ies):** Solubility of **Flutriafol** at 21° C in:

acetone	114 - 133	g/l
ethyl acetate	29-33	g/l
n-heptane	< 10	g/l
xylene	< 10	g/l
dichloroethane	20 – 25	g/l
methanol	114 – 133	g/l
water	130	mg/l @ 20° C

**Partition coefficient (n-octanol/water):** **Flutriafol:** Log  $K_{ow}$  = 2.29

**Auto-ignition temperature:** ND

**Decomposition temperature:** ND

**Viscosity:** 1200-2200 mPa.s

The product is a non-newtonian liquid. Viscosity is dependent on shear rate.

ND: Not determined

NA: Not applicable

## SECTION 10 — REACTIVITY AND STABILITY DATA

**Stability and reactivity:** This product is stable under the recommended storage and handling conditions described in Section 7.

**Hazardous polymerization:** Not known to occur.

**Conditions to avoid:** Heating of the product will produce harmful and irritant vapors.

**Materials to avoid (incompatibles):** None known.

**Hazardous decomposition products in a fire:** The essential breakdown products are volatile, malodorous, toxic, irritant and inflammable compounds such as hydrogen fluoride, nitrogen oxides, sulphur dioxide, carbon monoxide, carbon dioxide and various fluorinated organic compounds.

## SECTION 11 — TOXICOLOGICAL INFORMATION

**Routes of exposure:** Ingestion.

**Acute toxicity:** Harmful by ingestion. The acute toxicity is measured as:

**Toxicological data (product):**

LC<sub>50</sub>, inhalation (mg/L/4 hrs) = >5.05

LD<sub>50</sub>, oral, (mg/kg) = 2000

LD<sub>50</sub>, dermal, (mg/kg) = >2000

Slightly irritating to skin

Minimally irritating to eyes

Not a skin sensitizer

**Carcinogenicity:** No known carcinogenic effects.

**Teratogenicity, mutagenicity, other reproductive effects:** No known teratogenic, mutagenic or reproductive effects.

## SECTION 12 — ECOLOGICAL INFORMATION

**Environmental hazards:** Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

**Ecotoxicological information:** The ecotoxicity on the product is:

- Fish	Rainbow trout ( <i>Oncorhynchus mykiss</i> )	96-h LC <sub>50</sub>	204.5 mg/l
- Invertebrates	Daphnids ( <i>Daphnia magna</i> )	48-h EC <sub>50</sub>	169 mg/l
- Algae	Green algae ( <i>Pseudokirchneriella subcapitata</i> )	72-h IC <sub>50</sub>	128 mg/l
- Plants	Duckweed ( <i>Lemna gibba</i> )	7 day EC <sub>50</sub>	55.5 mg/l

**Environmental fate:**

**Flutriafol** is not readily degradable or expected to bioaccumulate. **Flutriafol** has moderate mobility in soil.

### SECTION 13 — DISPOSAL CONSIDERATIONS

**Handling for 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.

**Methods of disposal:** Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems. Refer to product label for specific container disposal instructions.

### SECTION 14 — TRANSPORTATION INFORMATION

**US DOT 49 CFR information:**

Not regulated

**INTERNATIONAL:**

**IMDG/IMO (vessel):** UN3082, Environmentally hazardous substance, liquid, n.o.s. (flutriafol), 9, PGIII, Marine Pollutant

**IATA/ICAO (air):** UN3082, Environmentally hazardous substance, liquid, n.o.s. (flutriafol), 9, PGIII, Marine Pollutant

### SECTION 15 — REGULATORY INFORMATION

**FIFRA:** This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels on non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**CAUTION**

Harmful if swallowed.

Harmful if absorbed through the skin.

Causes moderate eye irritation.

Avoid contact with skin, eyes or clothing.

**EPA/CERCLA Reportable Quantity (RQ):** Not applicable

**SARA TITLE III:**

*Sec. 302, Extremely Hazardous Substance Notification:* This material is not known to contain any Extremely Hazardous Substances.

*Sec. 311/312, Hazard Categories:* Immediate (acute) health hazard  
Chronic (delayed) health hazard

*Sec. 313, Toxic Chemicals Notification:* Not subject to SARA notification requirements.

**California Proposition 65:** This product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

### SECTION 16 — OTHER INFORMATION

**HMIS Rating:** 2 Health; 0 Flammability; 0 Reactivity

**NFPA Rating:** 2 Health; 0 Flammability; 0 Reactivity

0-minimal 1-slight 2-moderate 3-severe 4-extreme

**Prepared by:** Cheminova Inc.

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**SDS preparation date:** February 3, 2015