

Safety Data Sheet

1 IDENTIFICATION

Product Identifier:

Product Name: SHEPHERD® Fungicide

EPA Reg. No.: 69117-3

Synonyms: None

Recommended Use: Systemic fungicide in ornamental trees.

Use Restrictions: Do not inject food bearing plants. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Supplier Information: ArborSystems, Inc. d/b/a ArborSystems

10168 L Street

Omaha, NE 68127 USA

Toll Free: 800.698.4641

Phone: 402.339.4459

Fax: 402.339.5011

Email: mike@arborsystems.com

Website: www.arborsystems.com

Emergency Phone Number: 1.800.222.1222 (Medical)

2 HAZARDS IDENTIFICATION

Hazards Classification: This mixture is considered hazardous by the 2012 OSHA Communication Standard (29 CFR 1910.1200).

Acute toxicity-Oral Category 4

Serious eye damage/eye irritation Category 2A

Skin sensitization Category 1

Reproductive toxicity Category 1B

Flammable liquids Category 4

GHS Label Elements, including precautionary statements:

Signal Word: Danger

Hazards Statements: Harmful if swallowed. Causes serious eye irritation. May cause an allergic skin reaction. May damage fertility or the unborn child. Combustible liquid.



Appearance: Amber

Physical state: Liquid

Odor: Alcohol

Precautionary Statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use protective gloves/clothing and eye/face protection. Thoroughly wash face, hands and any exposed skin after handling. Do not eat, drink or smoke when using this product. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not allow contaminated work clothing out of the workplace. Keep away from flames and hot surfaces. No smoking.

Response: If exposed or concerned, get medical advice/attention.

Eyes: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing if eye irritation persists. Get medical advice/attention.

Skin: If on skin, wash with soap and plenty of water. If skin irritation or rash occurs, get medical advice/attention. Wash contaminated clothing before reuse.

Ingestion: If swallowed, call a poison control center or doctor/physician if you feel unwell. Rinse mouth.

Fire: In case of fire, use CO₂, dry chemical or foam to extinguish.

Storage: Store locked up in a cool, well-ventilated place.

Disposal: Dispose of contents/container to an approved waste disposal plant.

Unknown Toxicity: 100% of the mixture consists of ingredient(s) of unknown toxicity. 0% of the mixture consists of ingredient(s) of unknown acute oral toxicity. 100% of the mixture consists of ingredient(s) of unknown acute dermal toxicity. 100% of the mixture consists of ingredient(s) of unknown acute inhalation (gas, vapor, dust/mist) toxicity.

Other Information: Toxic to aquatic life with long-lasting effects.

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3 COMPOSITION / INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS Number	Percent	HMIRA* Registry No.	Date HMIRA filed and date exemption granted (if applicable)
Tetrahydrofurfuryl alcohol	97-99-4	85.7	-	-
Propiconazole [1-[2-(2,4-Dichlorophenyl-4-propyl-1,3-dioxolan-2-yl)-methyl-1H-1,2,4-triazole]	60207-90-1	14.3	-	-

*Hazardous Material Information Review Act.

4 FIRST-AID MEASURES

General Advice: Show this SDS to the doctor in attendance.

Inhalation: Remove to fresh air.

Eye Contact: Immediately rinse with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin Contact: Immediately wash off with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. In the case of skin irritation or allergic reaction, see a physician.

Ingestion: Clean mouth with water and drink plenty of water afterwards. Never give anything by mouth to an unconscious person. Do **not** induce vomiting. Call a physician.

Self-protection of the first aider: Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved. Take precautions to protect oneself and prevent spread of contamination. Wear personal protective clothing (see Section 8). Avoid contact with skin, eyes or clothing.

Most Important Symptoms and Effects: Itching, rashes, hives, burning sensation.

Note to Physician: May cause sensitization in susceptible persons. Treat symptomatically.

5 FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, CO₂, water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media: CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from this Mixture: Keep product and empty containers away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Product is or contains a sensitizer; may cause sensitization by skin contact.

Hazardous Combustion Products: Carbon oxides.

Sensitivity to Mechanical Impact: None.

Sensitivity to Static Discharge: Yes.

Protective Equipment and Precautions for Firefighters: Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Evacuate personnel to safe areas. Use personal protective equipment as required. See Section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.

Other Information: Refer to protective measures listed in Sections 7 and 8.

Containment Methods: Stop leak if you can do so without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

Cleanup Methods: Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

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7 HANDLING AND STORAGE

Precautions for Safe Handling: Use personal protection equipment. Do not breathe vapor or mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use with local exhaust ventilation. Handle in accordance with good industrial hygiene and safety practices. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Remove contaminated shoes.

Storage: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store in accordance with applicable national and local regulations.

Incompatible Products: None known based on information supplied.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters - Exposure Limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate Engineering Controls: Showers, eyewash stations and ventilation systems.

Individual Protection Measures – Personal Protective Equipment:

Eye/Face: Tight sealing safety goggles.

Hand: Wear suitable gloves.

Skin/Body: Wear suitable protective clothing.

Respiratory: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practices. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Do not allow contaminated work clothing out of the workplace. Regular cleaning of equipment, work area and clothing is recommended.

9 PHYSICAL AND CHEMICAL PROPERTIES

Auto-ignition temperature:	N/D	Partition coefficient: n-octanol/water:	N/D
Color:	Amber	pH:	4-7 (10% solution in water)
Decomposition temperature:	N/D	Physical state:	Liquid
Evaporation rate:	N/D	Relative density:	9.1 lbs/gal
Flammability (solid,gas):	N/A	Solubility(ies):	Complete in water
Flash point:	181°F	Upper/lower explosive limits:	N/D
Freezing point:	N/D	Upper/lower flammability limits:	N/D
Initial boiling point and range:	N/D	Vapor pressure:	N/D
Melting point:	N/A	Viscosity:	N/D
Odor:	Alcohol	N/A = Not Applicable	N/D = Not Determined

10 STABILITY AND REACTIVITY

Reactivity: No information available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: None under normal processing.

Hazardous Polymerization: Does not occur.

Conditions to Avoid: Heat, flames and sparks.

Incompatible Materials: None known based on information provided.

Hazardous Decomposition Products: Carbon oxides.

11 TOXICOLOGICAL INFORMATION

Product Information:

Inhalation: Specific test data for the mixture is not available. May cause irritation of respiratory tract.

Eye Contact: Specific test data for the mixture is not available. Causes serious eye irritation, based on components. May cause redness, itching and pain.

Skin Contact: May cause sensitization by skin contact. Specific test data for the mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons, based on components. May cause irritation. Prolonged contact may cause redness and irritation.

Ingestion: Specific test data for the mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed, based on components.

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Component Information

Chemical Name / CAS Number	Oral LD50	Dermal LD50	Inhalation LD50
Tetrahydrofurfuryl alcohol / 97-99-4	= 1600 mg/kg (rat)	-	-
Propiconazole / 60207-90-1 [1-[2-(2,4-Dichlorophenyl-4-propyl-1,3-dioxolan-2-yl)-methyl-1H-1,2,4-triazole]	= 1517 mg/kg (rat)	> 4 g/kg (rat)	= 1264 mg/m ³ (rat) 4h

Information on Toxicological Effects:

Symptoms: Itching, rashes, hives. May cause redness and tearing of eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

Skin corrosion/irritation: May cause skin irritation.

Serious eye damage/irritation: Classification based on data available for ingredients. Irritating to eyes.

Respiratory or skin sensitization: May cause sensitization by skin contact.

Germ cell mutagenicity: No information available.

Carcinogenicity: No information available.

Reproductive toxicity: Classification based on data available for ingredients. Contains a known or suspected reproductive toxin.

STOT-single exposure: No information available.

STOT-repeated exposure: No information available.

Aspiration hazard: No information available.

Numerical Measures of Toxicity – Acute Toxicity:

The following value is calculated based on Chapter 3.1 of the GHS document: ATEmix (oral): 1,588.00 mg/kg

Unknown acute toxicity: 100% of the mixture consists of ingredient(s) of unknown toxicity. 0% of the mixture consists of ingredient(s) of unknown acute oral toxicity. 100% of the mixture consists of ingredient(s) of unknown acute dermal toxicity. 100% of the mixture consists of ingredient(s) of unknown acute inhalation (gas, vapor, dust/mist) toxicity.

12 ECOLOGICAL INFORMATION (NON-MANDATORY)

Exotoxicity

Toxic to aquatic life with long-lasting effects.

Chemical Name / CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	<i>Daphnia magna</i> (water flea)
Tetrahydrofurfuryl alcohol / 97-99-4	-	48h LC ₅₀ =3400 mg/L (<i>Chaetodonoides</i>)	-	-

Persistence and Degradability: No information available.

Bioaccumulation: There is no data for this product

Mobility: No information available.

Other Adverse Effects: No information available.

13 DISPOSAL CONSIDERATIONS (NON-MANDATORY)

Waste Treatment Disposal Methods – Waste from residues/unused product: Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated Packaging: Do not reuse empty containers.

14 TRANSPORT INFORMATION (NON-MANDATORY)

DOT, TGD, MEX, ICAO, IATA, IMDG/IMO, RID, ADR and ADN: Not regulated.

15 REGULATORY INFORMATION (NON-MANDATORY)

International Regulations:

Ozone-depleting substances: Not applicable.

Persistent Organic Pollutants: Not applicable.

Export Notification Requirements: Not applicable.

International Inventories:

TSCA, DSL/NDSL, EINECS/ELINCS, ENCS, KECL, PICCS and AICS: Contact supplier for inventory compliance status.

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TSCA: United States Toxic Substances Control Act Section 8(b) Inventory; **DSL/NDSL:** Canadian Domestic Substances List/Non-Domestic Substances List; **EINECS/ELINCS:** European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances; **ENCS:** Japan Existing and New Chemical Substances; **KECL:** Korean Existing and Evaluated Chemical Substances; **PICCS:** Philippines Inventory of Chemicals and Chemical Substances; and **AICS:** Australian Inventory of Chemical Substances.

U.S. Federal Regulations:

SARA 313: Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 ("SARA"). This product contains the following chemical that is subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS Number	Weight %	SARA 313 Threshold Value %
Propiconazole [1-[2-(2,4-Dichlorophenyl-4-propyl-1,3-dioxolan-2-yl)-methyl-1H-1,2,4-triazole]	60207-90-1	14.3	1.0

SARA 313.312 Hazard Categories:

Acute Health Hazard: Yes

Chronic Health Hazard: Yes

Fire Hazard: Yes

Sudden Release of Pressure Hazard: No

Reactive Hazard: No

CWA (Clean Water Act): This product does not contain any substances regulated as pollutants pursuant to the CWA (40 CFR §§ 122.21 and 122.42).

FIFRA Information: This chemical is a pesticide product registered by the United States 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 ("SDSs") and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including Directions for Use.

PRECAUTIONARY STATEMENTS

Hazards to Humans & Domestic Animals

CAUTION: Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing vapor. Thoroughly wash with soap and water after handling. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE)

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.

All handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate; butyl, nitrile and neoprene rubber; polyvinyl chloride (PVC); or Viton
- Shoes plus socks
- Protective eyewear

In addition, all handlers (mixers, loaders and applicators or individuals performing one or more of these tasks), who are applying this pesticide using hand-held equipment must wear:

- Long-sleeved shirt and long pants,
- Shoes and socks and
- Chemical-resistant gloves.

User Safety Requirements

Users should:

- Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Immediately remove clothing/PPE if pesticide gets inside; then thoroughly wash and put on clean clothing.
- Immediately remove PPE after handling this product. Wash the outside of gloves before removing. As soon as possible thoroughly wash and change into clean clothing.

Environmental Hazards

This product is toxic to fish and shrimp. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.

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Physical or Chemical Hazards

Do not use or store near heat or open flame.

U.S. State Regulations:

California Proposition 65: This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name / CAS Number	Illinois	Massachusetts	New Jersey	Pennsylvania	Rhode Island
Tetrahydrofurfuryl alcohol / 97-99-4		X		X	
Propiconazole / 60207-90-1 [1-[2-(2,4-Dichlorophenyl-4-propyl-1,3-dioxolan-2-yl)-methyl-1H-1,2,4-triazole]			X		X

16 OTHER INFORMATION

NFPA:

Health Hazards: 2

Flammability: 2

Instability: 0

Physical and Chemical Hazards-Personal Protection: X

HMIS:

Health Hazards: 2*

Flammability: 2

Physical Hazard: 0

Physical and Chemical Hazards-Personal Protection: X

*Chronic Health Hazard

SDS Information:

Date Prepared: 01/09/2023

Version: 3

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DISCLAIMER

This Safety Data Sheet ("SDS") serves different purposes than, and DOES NOT REPLACE OR MODIFY, THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS 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 EPA under the authority of FIFRA (Federal Insecticide, Fungicide and Rodenticide Act, as Amended) 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 this product in a manner inconsistent with its labeling.

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