



# Echo® ZN Turf and Ornamental Fungicide

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Date of issue: 05/26/2015

Version: 1.0

### SECTION 1: IDENTIFICATION

#### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** Echo® ZN Turf and Ornamental Fungicide

**Synonyms:** Tetrachloroisophthalonitrile, Chlorothalonil

**Other means of identification:** EPA Reg. No. 60063-4

#### 1.2. Intended Use of the Product

**Use of the substance/mixture:** Fungicide

#### 1.3. Name, Address, and Telephone of the Responsible Party

##### Manufacturer

Sipcam Agro USA, Inc.

2525 Meridian Parkway, Suite 350

Durham, NC 27713

T 919-226-1195

#### 1.4. Emergency Telephone Number

**Emergency Number** : (800) 424-9300 CHEMTREC (transportation and spills) (800) 900-4044 Poison Control Center (human health) (800) 345-4735 ASPCA (animal health)

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

##### Classification (GHS-US)

Acute Tox. 2 (Inhalation:dust,mist) H330

Eye Irrit. 2B H320

Carc. 2 H351

Aquatic Acute 1 H400

Aquatic Chronic 2 H411

Full text of H-phrases: see section 16

#### 2.2. Label Elements

##### GHS-US Labeling

##### Hazard Pictograms (GHS-US)



##### Signal Word (GHS-US)

: Danger

##### Hazard Statements (GHS-US)

: H320 - Causes eye irritation.

H330 - Fatal if inhaled.

H351 - Suspected of causing cancer.

H400 - Very toxic to aquatic life.

H411 - Toxic to aquatic life with long lasting effects.

##### Precautionary Statements (GHS-US)

: P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P260 - Do not breathe dust/fume/gas/mist/vapors/spray.

P264 - Wash ... thoroughly after handling.

P271 - Use only outdoors or in a well-ventilated area.

P273 - Avoid release to the environment.

P280 - Wear eye protection, protective gloves.

P284 - [In case of inadequate ventilation] wear respiratory protection.

P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.

# Echo® ZN Turf and Ornamental Fungicide

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P310 - Immediately call a poison center/doctor  
P320 - Specific treatment is urgent (see Section 4 on this label).  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P391 - Collect spillage.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

### 2.3. Other Hazards

No additional information available

### 2.4. Unknown Acute Toxicity (GHS-US)

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	%	Classification (GHS-US)
Chlorothalonil	(CAS No) 1897-45-6	38.5	Acute Tox. 1 (Inhalation:dust,mist), H330 Eye Irrit. 2B, H320 Carc. 2, H351 Aquatic Acute 1, H400
Zinc oxide	(CAS No) 1314-13-2	<10	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Propylene glycol	(CAS No.) 57-55-6	≤5	Not Classified

Full text of H-phrases: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of First Aid Measures

**First-aid Measures General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**First-aid Measures After Inhalation:** When symptoms occur: go into open air and ventilate suspected area.

**First-aid Measures After Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**First-aid Measures After Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

### 4.2. Most important symptoms and effects, both acute and delayed

**Symptoms/Injuries:** May cause cancer. Fatal if inhaled. Causes eye irritation. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

**Symptoms/Injuries After Inhalation:** Inhalation of vapors may cause respiratory irritation.

**Symptoms/Injuries After Skin Contact:** May cause skin irritation.

**Symptoms/Injuries After Eye Contact:** Causes eye irritation.

**Symptoms/Injuries After Ingestion:** May be harmful if swallowed.

**Chronic Symptoms:** May cause cancer.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Alcohol foam, carbon dioxide, dry chemical, water spray, fog. Use extinguishing media appropriate for surrounding fire.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. A heavy water stream may spread burning liquid.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not considered flammable but may burn at high temperatures.

# Echo® ZN Turf and Ornamental Fungicide

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

### 5.3. Advice for Firefighters

**Firefighting Instructions:** Exercise caution when fighting any chemical fire.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Other Information:** Do not allow run-off from fire fighting to enter drains or water courses. De-contaminate equipment or materials involved in pesticide fires.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Handle in accordance with good industrial hygiene and safety practice.

#### 6.1.1. For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel. Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection. Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Ventilate area.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

### 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Contain and collect as any solid.

**Methods for Cleaning Up:** Collect spillage. Clear up spills immediately and dispose of waste safely.

### 6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use.

**Incompatible Products:** Strong acids. Strong bases. Strong oxidizers.

**Storage Area:** Store locked up.

### 7.3. Specific End Use(s) Fungicide

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), or OSHA (PEL).

Zinc oxide (1314-13-2)		
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ (respirable fraction)
USA ACGIH	ACGIH STEL (mg/m³)	10 mg/m³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³ (dust and fume)
USA NIOSH	NIOSH REL (STEL) (mg/m³)	10 mg/m³ (fume)
USA NIOSH	NIOSH REL (ceiling) (mg/m³)	15 mg/m³ (dust)
USA IDLH	US IDLH (mg/m³)	500 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ (fume)
		15 mg/m³ (total dust)
		5 mg/m³ (respirable fraction)
Propylene glycol (57-55-6)		
AIHA	AIHA TWA (mg/m³)	10 mg/m³

### 8.2. Exposure Controls

#### Appropriate Engineering Controls

: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

# Echo® ZN Turf and Ornamental Fungicide

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Personal Protective Equipment

: Protective goggles. Gloves. Dust/aerosol mask.



### Hand Protection

: Wear chemically resistant protective gloves.

### Eye Protection

: Chemical goggles or safety glasses.

### Respiratory Protection

: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

### Other Information

: When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Medium beige
Odor	: Slight
Odor Threshold	: No data available
pH	: 6.31
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: No data available
Auto-ignition Temperature	: Not applicable
Decomposition Temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapor Pressure	: 5.72 x 10 <sup>-7</sup> torr @ 25°C
Relative Vapor Density at 20 °C	: 1.1929 g/ml @ 20 °C
Relative Density	: No data available
Solubility	: Water: 0.6 - 0.9 %
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: 738.1 cSt @ 25°C
	: No apparent reaction was observed between the test substance and water, hexane, zinc metal, mono-ammonium phosphate and potassium permanganate.

### 9.2. Other Information

VOC content : 56 %

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. **Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. **Chemical Stability:** Product is stable.
- 10.3. **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. **Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures.
- 10.5. **Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers.
- 10.6. **Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>).

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information On Toxicological Effects

Acute Toxicity: Inhalation:dust,mist: Fatal if inhaled.

Echo® ZN Turf and Ornamental Fungicide	
ATE (Dust/Mist)	0.13 mg/l/4h
Chlorothalonil (1897-45-6)	
LD50 Oral Rat	3500 - 4800 mg/kg
LD50 Dermal Rat	2020 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg

# Echo® ZN Turf and Ornamental Fungicide

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

LC50 Inhalation Rat	2.52 - 13 mg/l/4h
ATE (Vapors)	2.52 mg/l/4h
ATE (Dust/Mist)	0.05 mg/l/4h
<b>Zinc oxide (1314-13-2)</b>	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 2000 mg/kg
<b>Propylene glycol (57-55-6)</b>	
LD50 Oral Rat	20 g/kg
LD50 Dermal Rabbit	20800 mg/kg

**Skin Corrosion/Irritation:** Not classified

**pH:** 6.31

**Serious Eye Damage/Irritation:** Causes eye irritation.

**pH:** 6.31

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Suspected of causing cancer.

<b>Chlorothalonil (1897-45-6)</b>	
IARC group	2B
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity.

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** inhalation of vapors may cause respiratory irritation.

**Symptoms/Injuries After Skin Contact:** May cause skin irritation.

**Symptoms/Injuries After Eye Contact:** Causes eye irritation.

**Symptoms/Injuries After Ingestion:** May be harmful if swallowed.

**Chronic Symptoms:** May cause cancer.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecology - General** : Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

<b>Chlorothalonil (1897-45-6)</b>	
LC50 Fish 1	0.012 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
EC50 Daphnia 1	0.0342 - 0.143 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC 50 Fish 2	0.0076 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
<b>Zinc oxide (1314-13-2)</b>	
LC50 Fish 1	780 µg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.122 mg/l
NOEC chronic fish	0.026 mg/l (Species: Jordanella floridae)
<b>Propylene glycol (57-55-6)</b>	
LC50 Fish 1	51600 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	10000 mg/l (Exposure time: 24 h - Species: Daphnia magna)
LC 50 Fish 2	41 - 47 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 2	1000 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

### 12.2. Persistence and Degradability

<b>Echo® ZN Turf and Ornamental Fungicide</b>	
Persistence and Degradability	Not established.

### 12.3. Bioaccumulative Potential

<b>Echo® ZN Turf and Ornamental Fungicide</b>	
Bioaccumulative Potential	Not established.
<b>Chlorothalonil (1897-45-6)</b>	
Log Pow	2.9 (at 22 °C)

# Echo® ZN Turf and Ornamental Fungicide

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Propylene glycol (57-55-6)	
BCF fish 1	< 1
Log Pow	-0.92

**12.4. Mobility in Soil** No additional information available

### 12.5. Other Adverse Effects

**Other Information** : Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste Treatment Methods:** Waste portions of this product and contaminated absorbent materials may be disposed of by incineration provided the following conditions are observed:

Incinerate in a suitable oven fed by a mixture of air and methane, at 1100-1200°C; The HCl which may form in the incinerator exhaust gas must be conveyed into an aqueous absorption system containing 18-20% of Ca(OH)<sub>2</sub>.

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, and international regulations.

**Ecology – Waste Materials:** Hazardous waste due to toxicity.

## SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/IMDG/DOT

### 14.1. In Accordance with DOT

Ground Transport - NAFTA Non-Bulk: Not regulated Tank Truck

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Chlorothalonil), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

Comments:

Non-Bulk-Not Regulated (DOT defined as container capacities less than or equal to 119 gallons)

### 14.2. In Accordance with IMDG

Water Transport -International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Chlorothalonil), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

### 14.3. In Accordance with IATA

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Chlorothalonil)

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

## SECTION 15: REGULATORY INFORMATION

### 15.1 US Federal Regulations

Echo® ZN Turf and Ornamental Fungicide	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
EPA FIFRA Pesticide Product Notice	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 (SDS), 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.
EPA FIFRA Signal Word	Warning
EPA FIFRA Hazard Statements	May be fatal if inhaled. Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Do not breathe spray mist. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.
EPA FIFRA Precautionary Statements	Do not breathe spray mist.

# Echo® ZN Turf and Ornamental Fungicide

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>Chlorothalonil (1897-45-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on United States SARA Section 313	
<b>SARA Section 313 - Emission Reporting</b>	0.1 %
<b>Zinc oxide (1314-13-2)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Propylene glycol (57-55-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>EPA TSCA Regulatory Flag</b>	Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

## 15.2 US State Regulations

<b>Chlorothalonil (1897-45-6)</b>	
<b>U.S. - California - Proposition 65 - Carcinogens List</b>	WARNING: This product contains chemicals known to the State of California to cause cancer.
<b>Chlorothalonil (1897-45-6)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
U.S. - Pennsylvania - RTK (Right to Know) List	
<b>Zinc oxide (1314-13-2)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
U.S. - Pennsylvania - RTK (Right to Know) List	
<b>Propylene glycol (57-55-6)</b>	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

<b>Revision Date</b>	: 05/19/2015
<b>Other Information</b>	: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

### GHS Full Text Phrases:

Acute Tox. 1 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 1
Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Carc. 2	Carcinogenicity Category 2
Comb. Dust	Combustible Dust
Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
	May form combustible dust concentrations in air
H320	Causes eye irritation
H330	Fatal if inhaled
H351	Suspected of causing cancer
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

# Echo® ZN Turf and Ornamental Fungicide

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

SDS US (GHS HazCom)