



Safety Data Sheet

United Phosphorus, Inc.

Preparation Date 11-May-2016

Revision date 20-Nov-2018

Revision Number: 3

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier

Product Description: Froghorn Fungicide

Other means of identification

Product code 12-N19A
UN-No UN3082
Registration number(s) 8033-127-70506

Recommended use of the chemical and restrictions on use

Recommended use Fungicides.
Uses advised against Activities contrary to label recommendation

Details of the Supplier of the Safety Data Sheet

Supplier Address

United Phosphorus Inc.
630 Freedom Business Center
Suite 402
King of Prussia, PA 19406

Emergency telephone number

Company Phone Number 1-800-438-6071
Emergency telephone number Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 673-6671 (24hrs)

2. Hazards Identification

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Gases)	Category 2
Acute toxicity - Inhalation (Vapors)	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Reproductive Toxicity	Category 2

Label elements

EMERGENCY OVERVIEW

DANGER

Hazard Statements

HARMFUL IF SWALLOWED
Fatal if inhaled
May cause an allergic skin reaction
Suspected of causing genetic defects
Suspected of damaging fertility or the unborn child

**Appearance** Opaque Tan**Physical state** Liquid**Odor** faint Sulfur**Precautionary Statements - Prevention**

Do not handle until all safety precautions have been read and understood
 Wear cold insulating gloves/face shield/eye protection
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Do not breathe dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 In case of inadequate ventilation wear respiratory protection
 Contaminated work clothing should not be allowed out of the workplace
 Wear protective gloves

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 IF ON SKIN: Wash with plenty of soap and water
 If skin irritation or rash occurs: Get medical advice/attention
 Wash contaminated clothing before reuse
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a POISON CENTER or doctor/physician
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 Rinse mouth

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC)**OTHER INFORMATION**

- Very toxic to aquatic life with long lasting effects
- Very toxic to aquatic life
- May be harmful in contact with skin

3. Composition/information on Ingredients

Chemical name	CAS No	Weight-%
Tebuconazole	107534-96-3	7.55
Thiophanate-methyl	23564-05-8	37.50

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. First aid measures

FIRST AID MEASURES**Eye contact**

Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.
Inhalation	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Ingestion	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Protection of First-aiders	Use personal protective equipment.

Most Important Symptoms and Effects, Both Acute and Delayed

Most Important Symptoms and Effects no data available.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media

Carbon dioxide (CO₂).

Use: Dry chemical. Water spray. alcohol-resistant foam.

Unsuitable extinguishing media no data available.

Specific hazards arising from the chemical

No information available.

Hazardous combustion products None known.

Explosion data**Protective equipment and precautions for firefighters**

Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with skin and eyes. Wear protective gloves/protective clothing and eye/face protection. Wash thoroughly after handling.

Environmental Precautions

Environmental precautions Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Methods and material for containment and cleaning up

Methods for Clean-Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Handling Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Keep out of reach of children. Wear personal protective equipment.

Conditions for safe storage, including any incompatibilities

Storage Keep out of the reach of children. Keep in a dry, cool and well-ventilated place.

incompatible materials Strong oxidizing agents.

8. Exposure Controls/Personal Protection

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

Engineering controls Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Personal protective equipment

Eye/Face Protection

Use eye protection to avoid eye contact. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.

Skin protection

Wear protective gloves/clothing. Chemical resistant footwear plus socks.

Respiratory protection

Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134.

General hygiene considerations

Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state	Liquid	Odor	faint Sulfur
Appearance	Opaque Tan		
color	No information available		

<u>Property</u>	<u>VALUES</u>	<u>Remarks/ • Method</u>
pH	8	
Melting point/freezing point	9 °C / 48 °F	
Boiling Point/Range	No information available	
Flash Point	No information available	
Evaporation Rate	No information available	
Flammability (solid, gas)	No information available	
Flammability limit in air		
Upper Flammability Limit	No information available	
Lower Flammability Limit	No information available	
vapor pressure	No information available	
Vapor Density	No information available	
Specific gravity	No information available	
Water solubility	No information available	
Solubility in Other Solvents	No information available	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	no data available	
Decomposition temperature	No information available	

Viscosity, kinematic	No information available
Dynamic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

OTHER INFORMATION

Softening point	No information available
molecular weight	No information available
VOC Content	No information available
Liquid Density	No information available
Bulk density	9.6 lb/gal

10. Stability and Reactivity

Reactivity

no data available

Chemical stability

Stable under normal conditions. Hazardous polymerisation does not occur.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerisation does not occur.

Conditions to avoid

No information available.

incompatible materials

Strong oxidizing agents.

Hazardous decomposition products

Carbon oxides.

11. Toxicological Information

Information on Likely Routes of Exposure**Product information**

Froghorn
 Acute oral LD50 (rat) = 994.6 mg/kg
 Acute dermal LD50 (rat)= >5000 mg/kg
 Acute inhalation LC50 (rat) 4 hr = > 2.02 mg/L

Inhalation

Toxic by inhalation.

Eye contact

Moderately irritating to the eyes.

Skin contact

May cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion

HARMFUL IF SWALLOWED.

Information on Toxicological Effects**Symptoms**

No information available.

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

Sensitization
Mutagenic effects
Carcinogenicity

No information available.

no data available.

Thiophanate methyl:

Repeated or long term administration produced effects on the thyroid, liver, or kidneys in rats, mice or dogs. An increased evidence of liver tumors was observed in mice and thyroid tumors were observed in male rats following long term oral exposure. No effects were seen on the ability of male or female rats to reproduce when exposed orally for 2 successive generations. No birth defects were observed in the offspring of rats exposed orally during pregnancy. In rabbits, developmental toxic effects were noted at maternally toxic doses. No genetic changes were observed in tests using animal cells. Tebuconazole (active ingredient):

Subchronic toxicity=

In dermal studies with rabbits the NOEL was 1000 mg/kg.

A three-week inhalation study with rats the NOEL was 10.6 mg/m³.

Chronic toxicity=

In chronic dog studies, tebuconazole was administered for 52 weeks at dietary concentrations of 40, 100, 150, 200, or 1000 ppm.

Due to lack of significant effects, the high dose was increased to 2,000 ppm at 40 weeks for the remainder of the study. At the high dose, effects relating to liver, spleen, ocular and adrenal were observed. The overall NOEL from these studies was 100 ppm based on adrenal effects. In a 2-year study, tebuconazole was administered to rats at dietary concentrations of 100, 300 or 1,000 ppm. There was a reduction in body weight gains and an increased incidence of liver and spleen effects at the high dose. The NOEL was 300 ppm.

Carcinogenicity:

There was no indication of a carcinogenic effect in rats or mice when tested at dose levels up to and including the maximum tolerated dose (MTD) for each species. An increased incidence of heptaocellular neoplasms occurred in mice at dose level approximately three fold greater than the MTD.

Mutagenicity:

In vitro and in vivo mutagenicity studies conducted on tebuconazole have been negative.

Developmental toxicity:

In mice treated at dose levels ranging from 1-1,000 mg/kg, the NOELs for maternal and developmental toxicity were 3 and 10 mg/kg respectively. In rats treated at dose levels of 30, 60, or 120 mg/kg, the NOELs for maternal and developmental toxicity were 30 and 60 mg/kg respectively. For rabbits, the NOELs for maternal and developmental toxicity were less than 10 and 30 mg/kg respectively.

In dermal teratology studies on rats and mice, tebuconazole was administered during gestation at dose levels of 100, 300 or 1,000 mg/kg. In rats, there was no indication of maternal and developmental toxicity were 100 and 300 mg/kg respectively.

Reproduction:

In a reproduction study in rats, smaller litter sizes and decreased pup weight gain was observed in conjunction with maternal toxicity at the high concentration. The maternal and reproductive NOEL was 300 ppm.

Neurotoxicity:

In an acute neurotoxicity screening study, tebuconazole was administered to rats as a single oral dose at doses of 100, 500 or 1000 mg/kg for males and 100, 250, or 500 mg/kg for females. Treatment related clinical signs of toxicity and transient neurobehavioral effects were evident in both sexes. There were no treatment related microscopic lesions within the skeletal muscle or neural tissues. Based on these results the NOEL for neuropathology was 1000 mg/kg for males and 500 mg/kg for females, the highest dose tested. The overall NOEL was less than 100 mg/kg for both sexes. In a 13 week neurotoxicity screening study in rats, body weight and food consumption was reduced at the high dose, functional observational battery (FOB) and automated measures of motor and locomotor activity were not affected by treatment, there were no treatment related microscopic lesions in neural tissues or skeletal muscle in any of the treated animals, and there was no evidence of neurotoxicity at any dietary concentration. The NOEL for overall

	toxicity was 400 ppm. In one generation developmental neurotoxicity study, tebuconazole was administered to rats during gestation and postnatal development. Maternal toxicity observed included decreased body weight and feed consumption, mortality, prolonged gestation, and alopecia. Effects observed in the offspring included mortality, developmental delay, and decrease in number of liveborn, viability index, body weight gain, absolute brain weight and cerebellar thickness. Tebuconazole did not cause any specific neurobehavioral effects in the offspring. The NOEL for both maternal and FI offspring toxicity was 300 ppm.
Reproductive effects	Not Available.
STOT - Single Exposure	no data available.
STOT - Repeated Exposure	no data available.
Chronic toxicity	Avoid repeated exposure.
Aspiration hazard	No information available.

Numerical Measures of Toxicity - Product information

LD50 Oral	994.6 mg/kg (rat)
LD50 Dermal	> 5000 mg/kg (rat)
LC50 Inhalation	LC50/inhalation/4h/rat = 2.02 mg/l

12. Ecological Information

ecotoxicity

Thiophanate methyl
 Carp 96 hr LC50 = >100 mg/L
 Fiddler crab 96 hr LC50 = >560 mg/L
 Bluegill 96 hr LC50 = 15.8 mg/L
 Daphnid 48 hr EC50 = 15.6 mg/L
 Shrimp 96 hr LC50 = 25.1 mg/L
 Trout 96 hr LC50 - 2.2 mg/L
 Oyster 96 hr LC50 = 4.6 ppm
 Highly toxic to catfish

Tebuconazole
 FISH
 LC50 96 hr Bluegill sunfish = 5.7 mg/L
 LC50 96 hr Trout 4.4 mg/L
 BIRD
 Acute oral LD50 Bobwhite quail = 1998 mg/kg
 Acute oral LD50 Japanese quail = 2912-4438 mg/kg
 Moderately toxic to fish and aquatic organisms.
 Half life 2-3 months in natural water. Strongly bound to soil and has low mobility.

Persistence/Degradability

no data available.

Bioaccumulation/ Accumulation

Does not bioaccumulate.

Other Adverse Effects

no data available

13. Disposal Considerations

Waste Treatment Methods

Waste Disposal Method

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or 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.

Contaminated packaging Refer to product label.

14. Transport Information

DOT Packages which contain an amount equal to or exceeding the RQ value of the technical ingredient must be labeled with the following shipping description:

UN-No	UN3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s (Thiophanate methyl)
Hazard class	9
Packing group	PG III
Reportable Quantity (RQ):	10 lbs. (Thiophanate-methyl)

TDG When shipped in Canada domestic highway non-bulk this product can be shipped as Not regulated as per TDG 1.45.1
In bulk - use IMDG description

IATA

UN-No	UN3082
Proper shipping name	Environmentally hazardous substances, liquid, n.o.s (Thiophanate methyl)
Hazard class	9
Packing group	PG III
Description	Marine Pollutant

IMDG/IMO

UN-No	UN3082
Proper shipping name	Environmentally hazardous substances, liquid, n.o.s (Thiophanate-methyl)
Hazard class	9
Packing group	PG III
EmS No.	F-A, S-F
Marine Pollutant	Marine Pollutant

15. Regulatory Information

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 of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

signal word CAUTION

Ventilation Control PESTICIDE APPLICATORS & WORKERS THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.

Keep out of Reach of Children. Harmful if swallowed. Causes moderate eye irritation. Toxic to birds, mammals, fish and aquatic invertebrates.

International Inventories

USINV	Present
DSL/NDL	Not present
EINECS/	Not Present
ELINCS	
ENCS	Not Present

China	Present
KECL	Present
PICCS	Present
AICS	Not Present
TSCA	Not Present

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
 ENCS - Japan Existing and New Chemical Substances
 IECSC - China Inventory of Existing Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Acute health hazard	yes
Chronic health hazard	yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	yes

CERCLA

Not applicable

Chemical name	RQ	CERCLA EHS RQs	RQ
Thiophanate-methyl 23564-05-8	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ

CERCLA

Component	RQ
Thiophanate-methyl 23564-05-8 (37.50)	10 lb

SARA Product RQ 0

RCRA

Component	RCRA - D Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Thiophanate-methyl 23564-05-8 (37.50)			U409

Pesticide Information

Component	FIFRA - Restricted Use	FIFRA - Pesticide Product Other Ingredients	FIFRA - Listing of Pesticide Chemicals	California Pesticides - Restricted Materials
Tebuconazole 107534-96-3 (7.55)			X	

State Regulations

Prop 65 Pictogram



**Prop 65 Warning Statement
California Proposition 65**

WARNING!***
 This product can expose you to chemicals including those listed below, which is [are] known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov***

Component	California Prop. 65	Non-additive, corrosive chemical type
Thiophanate-methyl 23564-05-8 (37.50)	Female Reproductive Male Reproductive	Female Reproductive Male Reproductive

State Right-to-Know

Not applicable

International regulations**U.S. EPA Label information**

EPA Pesticide registration number 8033-127-70506

16. Other Information

NFPA **HEALTH 1** **flammability 0** **Instability 0** **Physical hazard -**

Preparation Date 11-May-2016

Revision date 20-Nov-2018

Revision Summary

Add Prop 65 statement***

Disclaimer

United Phosphorus, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with other materials or in any process. Further, since the conditions and methods of use are beyond the control of United Phosphorus, Inc. and United Phosphorus Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

End of SDS