



# NOTICE OF INSECTICIDE CONTROL APPLICATION

**Date of Application:** March 4, 2025

**Location:** Trails Park

**Reason for Application:** Control of mites on the pyracantha vines.

**1) Product Manufacturer Name:** Forbid 4F Ornamental Insecticide/Miticide

-EPA registration no. 432-1279

-Active ingredients: N/A

-Precautionary statement: Harmful if swallowed, inhaled, or absorbed through skin.

**2) Product Manufacturer Name:** Ultra-Pure Oil

-EPA registration no. 69526-5-499

-Active ingredients: Mineral oil

-Precautionary statement: Harmful if swallowed or absorbed through skin.

**\*No applications within 25 feet of playgrounds**

**\*See attached label and SDS sheet**

**\*Dates are subject to change due to weather**



# FORBID<sup>®</sup> 4F

## Ornamental Insecticide/Miticide

For professional use only. For control of mites and whiteflies on ornamental plants in and around areas such as parks, golf courses, recreational areas, and residential or commercial buildings.

### ACTIVE INGREDIENT:

Spiromesifen: 2-oxo-3-(2, 4, 6- trimethylphenyl)-  
1-oxaspiro [4, 4] non-3-en-4-yl 3,3-  
dimethylbutanoate ..... 45.2%

**OTHER INGREDIENTS** ..... 54.8%

**TOTAL:** ..... 100.0%

Forbid 4F contains 4 pounds of spiromesifen per US gallon (480 grams ai per liter).

EPA Reg. No. 432-1279 EPA Est No. 432-TX-1

**STOP - Read the label before use.**  
**Keep out of reach of children.**

Net Contents  
**8 FL OZ**

# CAUTION

3944704

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**BACKED**  
by **BAYER**<sup>™</sup>

**For MEDICAL And TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577  
For PRODUCT USE Information Call 1-800-331-2867**

<b>FIRST AID</b>	
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>Note To Physician:</b> No specific antidote is known. Treat symptomatically. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.	

## **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

### **PRECAUTIONARY STATEMENTS**

#### **CAUTION**

Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

#### **Personal Protective Equipment (PPE):**

##### **Mixers, loaders and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical resistant gloves (such as natural rubber, selection category A)
- Shoes plus socks

##### **Applicators must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks

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

## **USER SAFETY RECOMMENDATIONS**

### **Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove Personal Protective Equipment immediately after handling this product.
- Wash the outside of gloves before removing.
- As soon as possible, wash thoroughly and change into clean clothing.

## **ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish and aquatic invertebrates. Avoid contamination of surface water through runoff or spray drift. 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 cleaning equipment or disposing of equipment washwater.

### **SURFACE WATER ADVISORY**

This product may contaminate water through runoff or through drift of spray in wind. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

## **DIRECTIONS FOR USE**

**It is a violation of Federal law to use this product in a manner inconsistent with its labeling.**

Not for use on plants being grown for sale or commercial production, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climatic modification in areas such as landscapes, campgrounds, golf courses, athletic fields, parks, gardens, rights of way and other easements, and around residential, institutional, public, commercial, and industrial buildings.

**IMPORTANT:** Read entire label and Conditions of Sale before using this product.



## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**STORAGE:** Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Handle and open container in a manner as to prevent spillage.

**PESTICIDE 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.

**CONTAINER DISPOSAL:** Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities, by burning. If burned, stay out of smoke.

## GENERAL INFORMATION

FORBID® 4F is a Flowable (Suspension Concentrate) formulation that is intended for control of mites and whiteflies on ornamental plants, flowers and foliage plants. The active ingredient contained in FORBID 4F is active on all mite development stages. However, mite juvenile stages are often more susceptible than adults. Application should be timed to coincide with early threshold levels in a developing mite population.

FORBID 4F is also highly effective against whitefly nymphs, plus it has a significant effect on the otherwise difficult to control pupal stage. For best results against whitefly, applications should target these life stages.

FORBID 4F can be applied by ground equipment. However, thorough coverage of all plant parts is required for optimum performance. Performance evaluations should be made 4 – 10 days after application.

Apply specific dosage of FORBID 4F as needed for control. For best results, uniform coverage of the upper and lower leaf surfaces is recommended. Avoid excess application that results in runoff from plant foliage. An adjuvant may be used to improve coverage on hard to wet foliage. For best results, the treatment should be made when whitefly or mite population begins to build and before a damaging population becomes established. Rate range is provided and

is generally dependent on size of the plant and density of the foliage.

## PRODUCT FEATURES

Controls all stages of whiteflies.

Provides knockdown and residual control of all developmental stages of mites.

<b>PESTS CONTROLLED</b>		<b>USE RATE</b>
Spider mites (including twospotted spider mite, southern red mite, maple spider mite, spruce spider mite, honeylocust spider mite, Euonymus mite, boxwood spider mite, tumid mite and Lewis mite) False spider mites Rust and blister mites (family Eriophyidae) Tarsonemid mites (including broad mites and cyclamen mites)		1.4 to 4 fl. oz. (40 - 120 mL)/100 gallons of spray solution or 2 - 6 mL/5 gallons of spray solution
Whiteflies (Including silverleaf, greenhouse, and sweetpotato whitefly)		2 to 4 fl. oz. (60 - 120 mL)/100 gallons of spray solution or 3 - 6 mL/5 gallons of spray solution
<b>WHERE TO APPLY</b>	To shrubs, trees (including non-bearing fruit and nut trees), flowers and foliage plants in outdoor landscapes.	
<b>HOW TO APPLY</b>	<p>Apply specific dosage of FORBID 4F as needed for control. Good coverage of the foliage is recommended. An adjuvant may be used to improve coverage on hard to wet foliage. For best results the treatment should be made when the whitefly or mite population begins to build and before a damaging population becomes established.</p> <p>FORBID 4F is highly effective against the egg and nymphal stages of whiteflies and mites. For best results, applications should target these stages.</p> <p>For maximum efficacy against adult whiteflies, use the 4 fl oz rate of FORBID 4F. For heavy infestations, two applications may be necessary to control adult whiteflies.</p> <p>Rate range is provided and is generally dependent on size of the plant and density of the foliage. Apply when pests first appear and prior to leaf damage or discoloration. Apply with ground application</p>	

(Continued)

<b>HOW TO APPLY</b> (Continued)	<p>equipment in adequate water for uniform coverage.</p> <p>Do not apply via chemigation.</p> <p>Do not apply FORBID 4F more than three times per season.</p>
<b>RESISTANCE MANAGEMENT</b>	<p>FORBID 4F contains an active ingredient with a novel mode of action. Studies to determine cross-resistance with FORBID 4F linked to other commercial insecticide/ miticides have demonstrated no cross-resistance. However, repeated use of any plant protection product may increase the development of resistant strains of pests, including insects and mites.</p> <p>Using FORBID 4F in successive miticide applications during the same growing season is not recommended. Use FORBID 4F as a part of a sound resistance management program that includes rotation with other treatments with different modes of action.</p>
<b>PLANT TOLERANCE</b>	<p>FORBID 4F has been evaluated for phytotoxicity on a wide range of ornamental plants. However, due to the large number of species and varieties of ornamental plants, it is impossible to test every one for tolerance to FORBID 4F. The professional user should determine if FORBID 4F could be used safely prior to commercial use. In a small area, test the recommended rates on a small number of plants for phytotoxicity prior to widespread use. Before using FORBID 4F in tank mixture with other products and adjuvants, test the mixture on a small number of plants for phytotoxicity prior to widespread use.</p> <p>Use of FORBID 4F on ferns, English ivy (<i>Hedera helix</i>), lily-of-the-incas (<i>Alstroemeria</i>), <i>Dracaena</i>, <i>Peperomia</i>, croton, <i>Cordyline</i>, Mexican heather, fuschia, geraniums (<i>Pelargonium</i> spp.), <i>Schefflera</i>, and <i>Impatiens</i> spp. is not recommended.</p>
<b>IRRIGATION TIMING</b>	<p>If irrigation is used, conduct irrigations efficiently to prevent excessive loss of irrigation waters through runoff. Time applications to allow sprays to dry prior to rain or sprinkle irrigations.</p>
<b>SPRAY DRIFT</b>	<p>Avoid drift or runoff into lakes, reservoirs, rivers, permanent streams, marshes, potholes, vernal pools, natural ponds, estuaries, or commercial fish farm ponds. Do not apply when winds are greater than 15 mph and avoid gusty conditions.</p>

(Continued)

<b>ENDANGERED SPECIES ADVISORY</b>	The use of any pesticide in a manner that may kill or otherwise harm endangered species or adversely modify their habitat is a violation of Federal law.
<b>RESTRICTIONS</b>	Do not use on vegetable gardens. Do not use on plants intended for use as feed or forage. Not for use in commercial greenhouses or nurseries, or on fruit or nut trees.
<b>PACKAGE HANDLING</b>	FORBID 4F is packaged in polyethylene containers. Do not allow product or containers to freeze.

### **COMPATIBILITY / MIXING / ORDER-OF-MIXING**

FORBID 4F is physically and biologically compatible with many registered pesticides and fertilizers or micronutrients. When considering mixing FORBID 4F with other pesticides or other additives, first contact your supplier for advice. For further information, contact your local Bayer representative. If your supplier and Bayer representative have no experience with the combination you are considering, you should conduct a test to determine physical compatibility. To determine physical compatibility, add the recommended proportions of each chemical with the same proportion of water as will be present in the chemical supply tank, into a suitable container, mix thoroughly and allow to stand for five minutes. If the combination remains mixed, or can be readily re-mixed, the mixture is considered physically compatible.

- FORBID 4F may be used with other recommended pesticides, fertilizers and micronutrients. The proper mixing procedure for FORBID 4F alone or in tank mix combinations with other pesticides is:  
Fill the spray tank 1/4 to 1/3 full with clean water;
- While recirculating and with the agitator running, add any products in PVA bags. Allow time for thorough mixing;
- Continue to fill spray tank with water until 1/2 full;
- Add any other wettable powder (WP) or wettable granules (WG) products;
- Add the required amount of FORBID 4F, and any other "flowable" (FL or SC) type products;
- Allow enough time for thorough mixing of each product added to tank;
- If applicable, add any remaining tank mix components: emulsifiable concentrates (EC), fertilizers and micronutrients.
- Fill spray tank to desired level and maintain constant agitation to ensure uniformity of spray mixture.

Mix pesticides in areas not prone to runoff such as concrete mixing/loading pads, disked soil in flat terrain or graveled



mix pads, or use a suitable method to contain spills and/or rinsate. Properly empty and triple-rinse pesticide containers at time of use.

### **IMPORTANT: READ BEFORE USE**

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of liability before using this product.

If terms are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following conditions, disclaimer of warranties and limitations of liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, because of manner of use and other factors beyond Bayer CropScience LP's control it is impossible for Bayer CropScience LP to eliminate all risks associated with the use of this product. As a result, crop injury or ineffectiveness is always possible. All such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. Bayer CropScience LP disclaims any liability whatsoever for special, incidental or consequential damages, resulting from the use or handling of this product.

**LIMITATIONS OF LIABILITY:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

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Produced for:

**Bayer**  
**Environmental**  
**Science**

A Division  
of Bayer CropScience LP  
2 T. W. Alexander Drive  
Research Triangle Park, NC  
27709

# FORBID® 4F

## Ornamental Insecticide/Miticide

For professional use only. For control of mites and whiteflies on ornamental plants in and around areas such as parks, golf courses, recreational areas, and residential or commercial buildings.

### ACTIVE INGREDIENT:

Spiromesifen: 2-oxo-3-(2,4,6-trimethylphenyl)-  
1-oxaspiro[4,4] non-3-en-4-yl 3,3-  
dimethylbutanoate ..... 45.2%

**OTHER INGREDIENTS**..... 54.8%

**TOTAL:** ..... 100.0%

Forbid 4F contains 4 pounds of spiromesifen per US gallon (480 grams ai per liter).

EPA Reg. No. 432-1279      EPA Est No. 432-TX-1

**STOP - Read the label before use.**

**Keep out of reach of children.**

## CAUTION

**For MEDICAL And TRANSPORTATION Emergencies**

**ONLY Call 24 Hours A Day 1-800-334-7577**

**For PRODUCT USE Information Call 1-800-331-2867**

**Net Contents**

**8 FL OZ**

**3944704**

**3849531C 090417AV2**

**BACKED**  
**by BAYER™**



**FORBID® 4F ORNAMENTAL INSECTICIDE/MITICIDE**

Version 2 / USA  
102000012417

1/11  
Revision Date: 02/07/2014  
Print Date: 05/06/2015

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**Product identifier**

Trade name	FORBID® 4F ORNAMENTAL INSECTICIDE/MITICIDE
Product code (UVP)	06478182
SDS Number	102000012417
EPA Registration No.	432-1279

**Relevant identified uses of the substance or mixture and uses advised against**

Use	Insecticide, Miticide
Restrictions on use	See product label for restrictions.

**Information on manufacturer**

Bayer CropScience  
2 T.W. Alexander Drive  
Research Triangle PK, NC 27709  
United States

**Emergency telephone no.**

All Emergencies, 24hr/ 7 days 1-800-334-7577

<b>Product Information</b>	1-866-99BAYER (1-866-992-2937)
<b>Telephone No.</b>	

**SDS Information or Request** SDSINFO.BCS-NA@bayer.com

**SECTION 2: HAZARDS IDENTIFICATION**

**Classification in accordance with regulation HCS 29CFR §1910.1200**

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

**Other hazards**

No particular hazards known.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Hazardous Component Name	CAS-No.	Average % by Weight
Spiromesifen	283594-90-1	45.20
Glycerine	56-81-5	10.00





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### SECTION 4: FIRST AID MEASURES

#### Description of first aid measures

<b>General advice</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Inhalation</b>	Move 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.
<b>Skin contact</b>	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
<b>Eye contact</b>	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 physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

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

<b>Symptoms</b>	To date no symptoms are known.
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#### Indication of any immediate medical attention and special treatment needed

<b>Treatment</b>	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.
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### SECTION 5: FIREFIGHTING MEASURES

#### Extinguishing media

<b>Suitable</b>	Water spray, Carbon dioxide (CO <sub>2</sub> ), Dry chemical
<b>Unsuitable</b>	None known.

#### Special hazards arising from the substance or mixture

Dangerous gases are evolved in the event of a fire.

#### Advice for firefighters

<b>Special protective equipment for fire-fighters</b>	Wear self-contained breathing apparatus and protective suit.
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#### Further information

Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.



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Flash point	Not combustible.
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Precautions** Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. Ensure adequate ventilation.

### Methods and materials for containment and cleaning up

**Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

**Additional advice** Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

**Reference to other sections** Information regarding safe handling, see section 7.  
Information regarding personal protective equipment, see section 8.  
Information regarding waste disposal, see section 13.

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## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

**Hygiene measures** Wash hands before breaks and immediately after handling the product.  
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

**Conditions for safe storage, including any incompatibilities**



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**Requirements for storage areas and containers**

Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Protect from freezing.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

Components	CAS-No.	Control parameters	Update	Basis
Spiromesifen	283594-90-1	0.92 mg/m <sup>3</sup> (TWA)		OES BCS*
Glycerine (Total dust.)	56-81-5	15 mg/m <sup>3</sup> (PEL)	02 2006	OSHA Z1
Glycerine (Respirable fraction.)	56-81-5	5 mg/m <sup>3</sup> (PEL)	02 2006	OSHA Z1
Glycerine (Respirable fraction.)	56-81-5	5 mg/m <sup>3</sup> (TWA)	1989	OSHA Z1A
Glycerine (Total dust.)	56-81-5	10 mg/m <sup>3</sup> (TWA)	1989	OSHA Z1A
Glycerine (Total dust and mist.)	56-81-5	10 mg/m <sup>3</sup> (TWA)	06 2008	TN OEL
Glycerine (Respirable fraction and dust or fume.)	56-81-5	5 mg/m <sup>3</sup> (TWA)	06 2008	TN OEL
Glycerine (Particulate.)	56-81-5	50 ug/m <sup>3</sup> (ST ESL)	02 2013	TX ESL
Glycerine (Particulate.)	56-81-5	5 ug/m <sup>3</sup> (AN ESL)	02 2013	TX ESL
Glycerine (Vapor.)	56-81-5	100 ug/m <sup>3</sup> (AN ESL)	02 2013	TX ESL
Glycerine (Vapor.)	56-81-5	1000 ug/m <sup>3</sup> (ST ESL)	02 2013	TX ESL

\*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

**Exposure controls**

**Personal protective equipment**

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

**Respiratory protection**

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

**Hand protection**

Chemical resistant nitrile rubber gloves

**Eye protection**

Goggles



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<b>Skin and body protection</b>	Wear long-sleeved shirt and long pants and shoes plus socks.
<b>General protective measures</b>	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	white to light beige
<b>Physical State</b>	Liquid
<b>Odor</b>	musty earthy
<b>Odour Threshold</b>	no data available
<b>pH</b>	3.5 - 5.5 (100 %)
<b>Vapor Pressure</b>	no data available
<b>Vapor Density (Air = 1)</b>	no data available
<b>Density</b>	1.08 g/cm <sup>3</sup> at 20 °C
<b>Evaporation rate</b>	no data available
<b>Boiling Point</b>	no data available
<b>Melting / Freezing Point</b>	no data available
<b>Water solubility</b>	miscible
<b>Minimum Ignition Energy</b>	not applicable
<b>Decomposition temperature</b>	not applicable
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Viscosity</b>	900 - 1,500 mPa.s
<b>Flash point</b>	Not combustible.
<b>Autoignition temperature</b>	no data available





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<b>Lower explosion limit</b>	no data available
<b>Upper explosion limit</b>	no data available
<b>Explosivity</b>	not applicable

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**SECTION 10: STABILITY AND REACTIVITY**

**Reactivity**

**Thermal decomposition** no data available

**Chemical stability** Stable under normal conditions.

**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.

**Conditions to avoid** freezing

**Incompatible materials** no data available

**Hazardous decomposition products** No decomposition products expected under normal conditions of use.

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**SECTION 11: TOXICOLOGICAL INFORMATION**

**Exposure routes** Ingestion, Inhalation, Eye contact, Skin Absorption

**Immediate Effects**

**Eye** May be minimally irritating following prolonged direct contact.

**Skin** Harmful if absorbed through skin. May cause slight irritation.

**Ingestion** Harmful if swallowed.

**Inhalation** Harmful if inhaled. Mists may cause respiratory tract irritation.

**Information on toxicological effects**

**Acute oral toxicity** LD50 (male/female combined rat) > 2,000 mg/kg



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<b>Acute inhalation toxicity</b>	LC50 (male/female combined rat) 1.8 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. Highest attainable concentration. No deaths
	LC50 (male/female combined rat) > 7.2 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
<b>Acute dermal toxicity</b>	LD50 (male/female combined rat) > 2,000 mg/kg
<b>Skin irritation</b>	Slight irritation (rabbit)
<b>Eye irritation</b>	Minimally irritating. (rabbit)
<b>Sensitisation</b>	Non-sensitizing. (guinea pig)

**Assessment repeated dose toxicity**

Spiromesifen did not cause specific target organ toxicity in experimental animal studies.

**Assessment Mutagenicity**

Spiromesifen was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**Assessment Carcinogenicity**

Spiromesifen was not carcinogenic in lifetime feeding studies in rats and mice.

**ACGIH**

None.

**NTP**

None.

**IARC**

None.

**OSHA**

None.

**Assessment toxicity to reproduction**

Spiromesifen caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Spiromesifen is related to parental toxicity.

**Assessment developmental toxicity**

Spiromesifen caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Spiromesifen are related to maternal toxicity.

**Further information**

Only acute toxicity studies have been performed on the formulated product.



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The non-acute information pertains to the active ingredient(s).

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**SECTION 12: ECOLOGICAL INFORMATION**

<b>Toxicity to fish</b>	LC50 (Rainbow trout ( <i>Oncorhynchus mykiss</i> )) 0.0155 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient spiromesifen.
<b>Toxicity to aquatic invertebrates</b>	EC50 (Water flea ( <i>Daphnia magna</i> )) > 0.0923 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient spiromesifen.
<b>Toxicity to aquatic plants</b>	IC50 ( <i>Pseudokirchneriella subcapitata</i> ) > 0.094 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient spiromesifen.
<b>Biodegradability</b>	Spiromesifen: not rapidly biodegradable
<b>Koc</b>	Spiromesifen: Koc:30900
<b>Bioaccumulation</b>	Spiromesifen: Bioconcentration factor (BCF) 545 Does not bioaccumulate.
<b>Mobility in soil</b>	Spiromesifen: Immobile in soil
<b>Environmental precautions</b>	Apply this product as specified on the label. 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 allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

<b>Product</b>	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.
<b>Contaminated packaging</b>	Do not re-use empty containers. Triple rinse containers.



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Empty residue into application equipment.  
Puncture container to avoid re-use.  
Dispose of empty container in a sanitary landfill or by incineration,  
or, if allowed by State/Provincial and local authorities, by burning.  
If burned, stay out of smoke.

**RCRA Information**

Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

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**SECTION 14: TRANSPORT INFORMATION**

**49CFR** Not dangerous goods / not hazardous material

**IMDG**

UN number	<b>3082</b>
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPIROMESIFEN SOLUTION)

**IATA**

UN number	<b>3082</b>
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPIROMESIFEN SOLUTION )

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

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**SECTION 15: REGULATORY INFORMATION**

<b>EPA Registration No.</b>	432-1279
<b>US Federal Regulations</b>	
<b>TSCA list</b>	
Glycerine	56-81-5





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**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

None.

**SARA Title III - Section 302 - Notification and Information**

None.

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

None.

**US States Regulatory Reporting**

**CA Prop65**

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

**US State Right-To-Know Ingredients**

Glycerine	56-81-5	MN
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**Canadian Regulations**

**Canadian Domestic Substance List**

Glycerine	56-81-5
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**Environmental**

**CERCLA**

None.

**Clean Water Section 307 Priority Pollutants**

None.

**Safe Drinking Water Act Maximum Contaminant Levels**

None.

**International Regulations**

**European Inventory of Existing Commercial Substances (EINECS)**

Glycerine	56-81-5
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**EPA/FIFRA 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 required on the pesticide label:

**Signal word:** Caution!

**Hazard statements:** Harmful if swallowed, inhaled or absorbed through the skin.  
Avoid contact with skin, eyes and clothing.  
Avoid breathing spray mist.  
Wash thoroughly with soap and water after handling.

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**SECTION 16: OTHER INFORMATION**



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NFPA 704 (National Fire Protection Association):

Health - 2      Flammability - 0      Instability - 0      Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 2      Flammability - 0      Physical Hazard - 0      PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard  
(29CFR1910.1200)

Revision Date: 02/07/2014

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

# Ultra-Pure<sup>®</sup> Oil

## Horticultural Insecticide, Miticide and Fungicide

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**ACTIVE INGREDIENT:**

	<b>By Weight</b>
Mineral Oil† .....	98.00%
<b>INERT INGREDIENTS:</b> .....	<u>2.00%</u>
<b>TOTAL:</b> .....	100.00%
<b>Unsulphonated Residue</b> .....	99.00%
	(minimum)
<b>Aromatic Composition by ASTM D2140</b> .....	0.00%

† Contains petroleum distillates

**EPA Reg. No. 69526-5-499**

**EPA Est. No.**

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

See Booklet/Inside for Additional Precautionary Statements and Directions for Use.

**NET CONTENTS:**

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BASF Corporation  
26 Davis Drive  
Research Triangle Park, NC 27709

 **BASF**  
We create chemistry

FIRST AID	
<b>If Swallowed:</b>	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• <b>DO NOT</b> induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• <b>DO NOT</b> give any liquid to the person.</li> <li>• <b>DO NOT</b> give anything by mouth to an unconscious person.</li> </ul>
<b>If on Skin or Clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 - 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in Eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 - 20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If Inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment. <b>FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-800-832-HELP (4357) OR A POISON CONTROL CENTRE.</b>	
<b>NOTE TO PHYSICIAN:</b> Petroleum distillate poses aspiration pneumonia hazard. Only minor irritation should be expected from any type of exposure other than pulmonary aspiration. Ingestion may result in some gastroenteritis and mild diarrhea. Since systemic toxicity is not expected, the added risks of aspiration from attempts to induce vomiting or lavage are deemed not warranted.	

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### CAUTION

Harmful if swallowed. Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

#### 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 E on the EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:** Long-sleeved shirt and long pants, chemical-resistant gloves (such as Barrier Laminate, Nitrile rubber, Neoprene rubber or Viton) and shoes plus socks.

**User Safety Requirements:** Follow manufacturer's instructions for cleaning and maintaining PPE. If there are no such instructions for washables, 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 damaged by this product's concentrate. **DO NOT** reuse them.

#### Engineering controls statements:

When handlers use closed systems, or enclosed cabs in a manner that meets with requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240 (d) (4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

## USER SAFETY RECOMMENDATIONS

#### Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing and/or 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.

## ENVIRONMENTAL HAZARDS

This product is toxic to fish. **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 wash waters or rinsate. Apply this product only as specified on the label.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **DO NOT** apply this product through any type of irrigation system. **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**Aerial application of this product is prohibited.**



## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, shoes plus socks, and chemical-resistant gloves made of any waterproof material.

## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. **DO NOT** enter or allow others to enter treated area until sprays have dried.

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE:** Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly.

**DO NOT** put concentrate or dilute material into food or drink containers. **DO NOT** contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

(continued)

## STORAGE AND DISPOSAL (continued)

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### CONTAINER DISPOSAL:

#### **Rigid, nonrefillable containers equal to or less than 5 gallons:**

Nonrefillable container. **DO NOT** reuse or refill this container. Offer for recycling, if available. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. If recycling is unavailable, puncture and dispose of container in sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

#### **Rigid, nonrefillable containers greater than 5 gallons:**

Nonrefillable container. **DO NOT** reuse or refill this container. Offer for recycling, if available. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **For Plastic containers greater than 5 gallons:** If recycling is unavailable, puncture and dispose of container in sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**For Metal containers greater than 5 gallons:** If recycling is unavailable, puncture and dispose of container in a sanitary landfill, or by other procedures approved by state and local authorities.

#### **Refillable Container 110 gallons or greater:**

Refillable container. Refill this container with pesticides only. **DO NOT** reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning the container before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into the mix tank. Triple rinse the interior of the container with water by using a suitable hose and nozzle attachment or pressure rinser. Collect and store the rinsate for proper disposal. Then, offer the container for recycling or reconditioning. If recycling is unavailable, puncture and dispose of container in a sanitary landfill, or by other procedures approved by state and local authorities.

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## MIXING INSTRUCTIONS

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1. Use only in equipment with sufficient agitation to keep spray thoroughly mixed. Be sure tank is clean.
2. With agitator running, start filling tank with water.
3. Add oil when tank is about 1/2 full. Pump this mixture through the overflow and back into tank for about two minutes. If this mixture turns white, it indicates good emulsification.
4. Fill the tank with water, adding other desired materials as tank is filling. If wettable powders are used, add and thoroughly mix them before adding oil.
5. Observe all cautions and limitations on labeling of all products used in mixtures. Keep agitator running at all times. If an injector is used, first add 25 to 50 gals. of water to tank with engine running to provide good pressure.
6. Put injector suction tube into the measured amount of spray oil, opening injector valve to allow the oil to be sucked into the tank, then fill the tank with water.

**DO NOT USE THIS MATERIAL IF IT DOES NOT EMULSIFY.**

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## USE RESTRICTIONS AND PRECAUTIONS

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**Preharvest Interval** - This product may be used up to the day of harvest.

For full coverage, dilute applications (greater than 150 gallons of spray solution per acre) are recommended. Concentrate applications (usually from 20 to 150 gallons of spray solution) may reduce the coverage and thus the effectiveness. Application volumes depend on the crop type, crop size and target pest. Adjust the spray volume to obtain complete coverage without runoff. Extreme care should be taken when using concentrate sprays as the potential for enhanced crop phytotoxicity is increased. A concentrate application can provide satisfactory results as long as the spray unit is properly engineered, calibrated and operated.

**Note:** Use efficient equipment of the proper type. **DO NOT** spray during or immediately prior to temperatures over 95°F or when the temperature approaches freezing, or during hot dry winds, rain or other unsuitable conditions.

**DO NOT** overspray or double spray. Plants should be sprayed only when in vigorous condition and when their moisture condition is suitable. Before using, make certain spray tank is free of sulfur residues.

**Sulfur: On Grapes: DO NOT** apply sulfur within 10 days of an oil application. **On all other Crops: DO NOT** apply micronized sulfur within 10 days of an oil application and **DO NOT** apply oil within 14 days of an application of wettable or dusting sulfur.

**Tank Mixes:** This product may be mixed with other pesticides to improve the level of pest control. Read and follow all directions and restrictions on the labels of the proposed tank-mix products. The combination of this product with more than one other pesticide is not recommended. Use

caution and read all labels thoroughly when using any other insecticide or miticide in combination with this product. Always carry out a test spray for plant sensitivity before making a full scale application.

**DO NOT use the following chemicals:** Captan, Folpet, during, with or following an oil spray. A period of 14 days must elapse before any of the following chemicals are used before or after an application of this product: anilazine (Dyrene), chlorothalonil (Bravo), dicloran (Botran), dicofol (Kelthane), permethrin (Ambush, Pounce). **DO NOT** use chlorothalonil (Bravo) in a spray program with this product on grapes, ornamentals and strawberries. **DO NOT** use dicofol (Kelthane) in a spray program with this product on ornamentals and strawberries. **DO NOT** use propargite (Omite) with an oil spray or within 30 days before or after an oil spray.

This product has not been tested on all species or varieties. Before treating a large area, treat a small area and observe prior to full scale application.

Protect painted surfaces, carpets, and furnishings from overspray as this product may cause discoloration.

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## SPRAY DRIFT MANAGEMENT

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A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, and relative humidity) and method of application (e.g., ground or airblast) can influence pesticide drift. The applicator and grower must evaluate all factors and make appropriate adjustments when applying this product.

### Wind Speed

**DO NOT** apply at wind speeds greater than 15 mph at the application site.

### Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if (a) conditions of temperature inversion exist, or (b) stable atmospheric conditions exist at or below nozzle height. **DO NOT** make applications into areas of temperature inversions or stable atmospheric conditions.

### Release Height

Apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

### Droplet Size

Apply as a medium or coarser spray (ASABE standard 572), and the minimum volume mean diameter (VMD) for spinning atomizer nozzles.

For airblast applications, turn off outward-pointing nozzles at row ends and when spraying outer row. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

## FRUIT AND NUT CROPS

### APPLES AND PEARS:

PESTS	APPLICATION RATE & TIMING
<b>APPLES AND PEARS:</b> European Fruit Lecanium Scale Olive Scale San Jose Scale European Red Mite Eggs	<b>DORMANT OR DELAYED DORMANT</b> Use 1 to 2 gals. per 100 gals. of water at 100 to 800 gals. per acre. <b>Concentrate Spray:</b> Use 3 to 8 gals. per acre in a minimum of 20 to 100 gals. water per acre.
Two-spotted Spider Mite Pacific Red Mite European Red Mite	<b>FOLIAR SPRAY (Post Bloom)</b> Use 1 quart-1.5 gallons per 100 gals. of water at 100 to 800 gals. per acre. <b>DO NOT</b> exceed more than 1.5 gals per acre per application for <i>SUMMER</i> treatments. <b>Concentrate Spray: DO NOT</b> exceed more than 1.5 gals. per acre per application. Apply a minimum of 20 to 100 gals. water per acre.
<b>APPLES ONLY:</b> Rosy Apple Aphid Eggs Apple Aphid Eggs	<b>DORMANT OR DELAYED DORMANT</b> Use 1 to 2 gals. per 100 gals. of water at 100 to 800 gals. per acre. <b>Concentrate Spray:</b> Use 3 to 8 gals per acre in a minimum of 20 to 100 gals. water per acre.
Fruit Tree Leafroller Apple Red Bug Scurfy Scale European Red Mite	<b>DELAYED DORMANT TO GREEN TIP</b> Use 1 to 3 gals. per 100 gals. of water at 100 to 800 gals. per acre. <b>Concentrate Spray:</b> Use 3 to 12 gals. per acre in a minimum of 20 to 100 gals. water per acre. <b>COMMENTS:</b> Delayed dormant preferred.
San Jose Scale Forbes Scale	<b>DORMANT, DELAYED DORMANT TO GREEN TIP</b> Use 1 to 2 gals. per 100 gals. of water at 100 to 800 gals. per acre. <b>Concentrate Spray:</b> Use 3 to 8 gals. per acre in a minimum of 20 to 100 gals. water per acre.
<b>PEARS ONLY:</b> Pear Psylla	<b>DORMANT</b> Use 1 to 2 gals. per 100 gals. of water at 100 to 800 gals. per acre. <b>Concentrate Spray:</b> Use 3 to 8 gals. per acre in a minimum of 20 to 100 gals. water per acre. <b>COMMENTS:</b> Apply before eggs are laid.
Fruit Tree Leafroller Pear Leaf Blister Mite	<b>DORMANT</b> Use 1 to 3 gals. per 100 gals. of water at 100 to 800 gals. per acre. <b>Concentrate Spray:</b> Use 3 to 12 gals. per acre in a minimum of 20 to 100 gals. water per acre.

## FRUIT AND NUT CROPS *(continued)*

**ALMONDS, APRICOTS, CHERRIES, NECTARINES, PEACHES, PISTACHIO, PLUMS AND PRUNES:** (Directions for use on Plums and Prunes in California's Sacramento Valley can be found in the table following this one)

PEST	APPLICATION RATE & TIMING
Black Scale European Fruit Lecanium Scale San Jose Scale Olive Scale Frosted Scale Aphid Eggs European Red Mite Eggs Brown Mite Eggs Fruit Tree Leafroller Eggs	<b>DORMANT, DELAYED DORMANT AND GREEN TIP</b> Use 1 to 3 gals. per 100 gals. of water at 300 to 600 gals. per acre. <b>Concentrate Spray:</b> Use 6 to 8 gals. per acre in a minimum of 20 gals. of water per acre.  <b>COMMENTS:</b> Preferred times of application for European Fruit Lecanium Scale and European Red Mite Eggs are Delayed Dormant to Green Tip, and for San Jose Scale are Dormant, Delayed Dormant to Green Tip.
Terrapin Scale	<b>DELAYED DORMANT</b> Use 2 to 3 gals. per 100 gals. of water at 300 to 600 gals. per acre. <b>Concentrate Spray:</b> Use 8 to 12 gals. per acre in a minimum of 20 gals. of water per acre.
Cottony Peach Scale	<b>DORMANT</b> Use 2 to 3 gals. per 100 gals. of water at 300 to 600 gallons per acre. <b>Concentrate Spray:</b> Use 8 to 12 gals. per acre in a minimum of 20 gals. of water per acre.
Two-spotted Spider Mite Pacific Mite European Red Mite Brown Mite	<b>FOLIAR SPRAY</b> Use 0.5 to 1.5 gals. per 100 gals. of water at 300 to 600 gals. per acre. <b>Concentrate Spray: DO NOT</b> use more than 4 gals. per acre in a minimum of 20 gals. water per acre.  <b>COMMENTS:</b> Certain varieties of plums and prunes may be injured by oil sprays, check for tolerance prior to treatment. <b>DO NOT</b> apply to trees lacking moisture.
White Peach Scale on Peaches (Only for use in Georgia, Florida, South Carolina, North Carolina, and Alabama)	<b>DORMANT</b> Use 1.5 to 2 gals. per 100 gals. of water at 300 to 600 gals. per acre. <b>Concentrate Spray:</b> Use 6 to 8 gals. per acre in a minimum of 20 gals. of water per acre.  <b>COMMENTS:</b> Apply before buds begin to swell in the spring. Make 2 applications 7 to 14 days apart, according to local recommendations, during the dormant period.

### PLUMS AND PRUNES: (Sacramento Valley of California Only)

PESTS	APPLICATION RATE & TIMING
Black Scale European Fruit Lecanium Scale San Jose Scale Olive Scale Frosted Scale Mealy Plum Aphid Eggs Leaf Curl Plum Aphid Eggs Brown Mite Eggs European Red Mite Eggs	<b>PRE-BLOOM WHEN FRUIT BUDS SHOW GREEN TIPS:</b> Use 1.5 to 2 gals. per 100 gals. of water at 300 to 600 gals. per acre. <b>Concentrate Spray:</b> Use 6 to 8 gals. per acre in a minimum of 20 gals. water per acre.  <b>COMMENTS:</b> Application at this time is preferred.
Two-spotted Spider Mite Pacific Mite European Red Mite Brown Mite	<b>FOLIAR SPRAY:</b> Use 0.5 to 1 gal. per 100 gals. water at 300 to 600 gals. per acre. <b>Concentrate Spray:</b> Use 4 to 6 gals. per acre in a minimum of 20 gals. water per acre.  <b>COMMENTS:</b> Oil sprays may injure certain varieties of plums and prunes, check for tolerance prior to treatment.



## FRUIT AND NUT CROPS *(continued)*

### AVOCADOS:

PESTS	APPLICATION RATE & TIMING
Avocado Brown Mite Thrip Praceia Mite	<p>Use 0.5 to 1 gal. per 100 gals. of water with thorough coverage in 400 to 3000 gals. per acre.</p> <p><b>Concentrate Spray:</b> Use 4 to 15 gals. per acre in a minimum of 50 to 100 gals. per acre.</p> <p><b>COMMENTS:</b> Apply through late fall.</p> <p><b>Consult with your local University of California Cooperative Extension Service for proper timing and application parameters.</b></p>

### BANANAS, PLANTAINS:

PESTS	APPLICATION RATE & TIMING
Black Leaf Streak <i>(Mycosphaerella fijiensis)</i> Black Sigatoka <i>(Mycosphaerella fijiensis var. difformis)</i> Yellow Sigatoka <i>(Mycosphaerella musicola)</i>	<p>Use 0.5 to 1.5 gals. in 20 to 100 gals. of water per acre.</p> <p><b>Mist Blower:</b> Use 1.5 gals. in 6 gals. of water per acre.</p> <p><b>COMMENTS:</b> Begin application when disease first appears and continue every 10 to 15 days during rainy periods or as is needed. <b>DO NOT</b> apply when daytime temperatures exceed 80°F as injury may occur.</p> <p>Phytotoxicity may be affected by the quantity of oil used, vigor of trees and temperature at the time of application. Bag fruits, or use a directed spray on unbagged fruits. Bagged fruit improves crop safety whereas unbagged fruit may show phytotoxicity.</p> <p>This application is also effective in loosening Sooty Mold Fungus and in preventing its formation by the control of Aphids, Mealybugs, Scales and Whitefly.</p>

### BLUEBERRIES\*, BUSHBERRIES\*, CANEBERRIES:

PESTS	APPLICATION RATE & TIMING
Mites Powdery Mildew Rust	<p>Use 0.75-1.5 gals. of oil per 100 gals. of water at 100-250 gals. of water per acre.</p> <p><b>Concentrate Spray:</b> Use 1.5 - 3 gals. of oil per acre in a minimum of 50 gals. of water per acre.</p> <p><b>COMMENTS:</b> Using ground equipment, spray for optimum coverage of leaf surfaces. For fungal diseases use at least 200 psi spray pressure.</p>

## FRUIT AND NUT CROPS *(continued)*

### CITRUS:

**California Only - Lemons, Grapefruit, and Oranges (Navel and Valencia), Limes, Tangerines and Tangelos and other citrus hybrids**

PESTS	APPLICATION RATE & TIMING
Mites - Citrus Bud - Citrus Flat - Citrus Red - Citrus Rust  Scales - Black - Brown Soft - California Red - Citricola - Purple - Yellow - Red	<p><b><u>Central and Southern California:</u></b>  Apply 0.5 to 1.5 gals. of oil per 100 gals. of water as thorough coverage spray (TC). Alternately, use a Low-Volume spray (LV) to apply 1 to 10 gals. of oil per acre.</p> <p>Apply up to 10 gals. of oil per acre on bearing trees up to 10 feet in height. Add 1 gal. of oil per acre for each foot of tree height over 10 feet. Apply as a Low-Volume spray (LV) 1 to 10 gals. of oil per acre.</p> <p><b>COMMENTS:</b> For Lemons and Limes, make applications in all months except December through February; for Grapefruit make applications July through October; for Oranges make applications on Navels July through September and on Valencias, Tangelos and Tangerines and other citrus hybrids July through October.</p> <p><b><u>Central California:</u></b> Apply July through September.</p> <p><b><u>Southern California:</u></b> For Coastal Lemons and Limes, apply May and June and/or September through December. For Interior Lemons and Limes, apply in April and May and/or September through November.</p> <p><b><u>Oxnard Plains Area:</u></b> Apply 0.5 to 1.5 gals. of oil per 100 gals. of water as a Thorough Coverage spray (TC). Alternately, use a Low Volume spray (LV) to apply 1 to 10 gals. of oil per acre. Apply up to 10 gals. of oil per acre on bearing trees up to 10 feet in height. Add 1 gal. of oil per acre for each foot of tree height over 10 feet. Apply as a low volume spray (LV) 1 to 10 gals. of oil per acre.</p> <p><b>COMMENTS:</b> Make applications as needed throughout the year.</p>

#### **Thorough Coverage Spray (TC):**

Applications achieving a uniform film wetting of all portions of the tree at 250 to 2000 gallons of spray solution per acre. The total volume needed is dependent on the size of the trees. **DO NOT** exceed a maximum of 212 pounds of active ingredient (in a maximum volume of 2000 gals. of spray mix) per acre when treating citrus in California (based on thorough coverage spray, with 1.5 gals. of product mixed per 100 gals. of water).

#### **Low-Volume Spray (LV):**

Applications with droplet depositions achieved on all interior and exterior parts of the tree using 10 to 100 gals. of spray solution per acre.

**DO NOT** apply prior to or during a period of excessively high temperatures.

**DO NOT** apply oil spray when trees show stress.

Consult with your local University of California Cooperative Extension Specialist for proper timing and spray program.



## FRUIT AND NUT CROPS *(continued)*

### CITRUS:

#### Florida and Texas - Grapefruit, Lemons, Limes, Oranges, Tangelos and Tangerines and other citrus hybrids

PESTS	APPLICATION RATE & TIMING
Citrus Rust Mite, Spider Mite	5 to 10 gals. of oil per acre. Apply as a dilute spray.
Scale Insects - Black Soft - Brown Soft - Chaff - Glover - Purple - Red - Yellow	5 to 10 gals. of oil per acre. Apply as a dilute spray. <b>COMMENTS:</b> Does not control citrus Snow Scale.
Whitefly	5 gals. of oil per acre. Apply as a dilute spray.
Greasy Spot (Grapefruit)	5 gals. of oil per acre. Apply as a dilute spray. <b>COMMENTS:</b> Tank-mix with sufficient copper fungicide to provide 4 lbs. per acre of metallic copper.
Greasy Spot (all other varieties)	5 to 10 gals. of oil per acre. Apply as a dilute spray. <b>COMMENTS:</b> If disease pressure is severe, tank-mix 4 lbs. (metallic) copper per acre. <b>DO NOT</b> exceed 5 gals. oil if copper used.
Loosening sooty mold	5 to 10 gals. of oil per acre. Apply as a dilute spray. <b>COMMENTS:</b> Use 10 gals. of oil per acre when disease pressure is heavy.

#### **Dilute spray:**

Apply the spray oil application rate in up to 1500 gals. of water per acre, or 10 to 12 gals. per tree, to over 15 gals. per tree for large trees. Best results can be obtained when the oil is added to a partially filled spray tank under proper agitation and all foliage is thoroughly covered. **DO NOT** exceed a maximum of 159 pounds of active ingredient (in a maximum volume of 1500 gals. of spray mix) per acre when treating citrus in Florida and Texas (based on dilute spray, with 1.5 gals. of product mixed per 100 gals. of water).

#### **Precautions in the use of oil include:**

**DO NOT** apply oil spray when trees are wilting. **DO NOT** apply oil and sulfur within 3 weeks of each other in Florida or Texas. Oil spray applied after October 1 may increase susceptibility of trees to cold damage and may reduce the fruit crop the following year. Oil sprays applied in the fall may inhibit solids formation in the juice and retard coloring of fruit and should not be applied within 60 days of anticipated harvest. Sensitive foliage may be injured.

Florida growers consult the Florida Citrus Spray and Dust Schedule, or your Agricultural Experiment Station or State Extension Service Specialist for complete details on the spraying program best suited to your locale. Texas growers consult with your Agricultural Experiment Station or State Extension Specialist for complete details on the spraying program suited to your locale.

### COFFEE:

PESTS	APPLICATION RATE & TIMING
Green Scale	Use 3 to 6 gals. in 100 gals. of water per acre. Use only water as a diluent. <b>COMMENTS:</b> Apply when insects appear and treat as necessary at 30- to 60-day intervals. <b>DO NOT</b> exceed 18 gals. of oil per acre in a growing season. <b>DO NOT</b> apply within 30 days of harvest when berries are handpicked. Oil residues make picking difficult.

**DO NOT** apply the product through any type of irrigation system. Phytotoxicity may be affected by the quantity of oil used, vigor of trees and temperature at the time of application.

## FRUIT AND NUT CROPS *(continued)*

### FIGS:

PESTS	APPLICATION RATE & TIMING
Fig Scale	1-3 gals. of oil per 100 gals. of water at 100-300 gals. of water per acre. <b>COMMENTS:</b> Dormant or Delayed Dormant
Mites Mealybug Scale	1-2 gals. of oil per 100 gals. of water at 100-500 gals. of water per acre. <b>COMMENTS:</b> Foliar Spray

### GRAPES:

PESTS	APPLICATION RATE & TIMING
Mealybug Mites Leafhopper* Whiteflies* Powdery Mildew	<p><b>DORMANT</b> Use 1 to 3 gals. of oil per acre. Apply in sufficient water volume to ensure good coverage.</p> <p><b>FOLIAR</b> Use 0.5 - 2 gals. per acre depending on pest pressure. Apply in sufficient water volume to ensure good coverage.</p> <p>Using ground equipment, spray for optimum coverage of leaf surfaces. Repeat sprays every 10-14 days.</p> <p><b>COMMENTS:</b> Oil will remove the bloom on grapes. Table grapes should not be sprayed within 60 days of harvest. On grapes, <b>DO NOT</b> tank-mix oil and copper more than once/season. <b>DO NOT</b> use copper and oil together with fruit present.</p> <p><b>For Powdery Mildew:</b> Make first application pre-bloom and continue every ten days to three weeks depending on level of disease pressure. Use 2 gals. of oil per acre and a 10-day interval when disease conditions are severe.</p>

### OLIVES:

PESTS	APPLICATION RATE & TIMING
Olive (Parlatoria) Scale Oleander Scale Black Scale Mites	<p><b>POSTBLOOM THROUGH AUGUST AND POST-HARVEST</b> Use 1 to 1.5 gals. per 100 gals. of water at 400 to 600 gals. per acre.</p> <p><b>COMMENTS:</b> Prebloom to Postbloom Buckshot</p>

### PECANS:

PESTS	APPLICATION RATE & TIMING
Scales Aphids (eggs) Mites (eggs)	<p>Use 2 to 3 gals. in 100 gals. of water at 200-500 gals of water per acre. Use 2 gals. of oil per 100 gals. of water rate when trees are in a weakened condition.</p> <p><b>Concentrate Spray:</b> Use 6 to 8 gals. per acre in a minimum of 20 to 125 gals. of water.</p> <p><b>COMMENTS:</b> Apply from late February until buds first break.</p>

### STRAWBERRIES:

PESTS	APPLICATION RATE & TIMING
Leafminers* Mites Powdery Mildew	<p>0.75 gals. of oil per 100 gals. of water at 100 gals of water per acre.</p> <p><b>COMMENTS:</b> Spray at no less than 400 psi using ceramic spray nozzles (ALBUZ® ATR, lilac color or their equivalent).</p>

## FRUIT AND NUT CROPS *(continued)*

### TROPICAL FRUIT: Kiwi, Mango, Papaya and Pineapple.

PESTS	APPLICATION RATE & TIMING
<b>KIWI</b> Latania Scale Greedy Scale Oleander Scale San Jose Scale	Use 4 to 6 gals. of oil in a minimum of 100 gals. of water per acre. Use 6 gals. of oil per acre when scale populations are high.  <b>COMMENTS: DO NOT</b> apply after budbreak. <b>DO NOT</b> use on weak or stressed vines, or where soil moisture is inadequate.
<b>MANGO</b> Mites Powdery Mildew	Use 1 to 1.5 gals. of oil in 100 gals. of water per acre.  <b>COMMENTS:</b> Apply every 2 to 3 weeks as necessary depending on level of pest pressure.
<b>PAPAYA</b> Mites Powdery Mildew Papaya Ringspot Virus	Use 0.75 to 1.5 gals. in 100 gals. of water per acre.  <b>COMMENTS:</b> For Powdery Mildew/Mites: Spray every 10 to 14 days depending on the level of pest pressure. For Virus: Initiate spray when seeds are germinated. Spray weekly using 400 psi spray pressure and ceramic hollow cone nozzles.
<b>PINEAPPLE</b> Mealybugs Bud Moth Chinese Rose Beetle	<b>SPRAY:</b> Use 1 to 2 gals. of oil in 100 gals. of water per acre. <b>DIP:</b> Use 1 to 2 gals. of oil in 100 gals. of water, dip for 30 seconds.  <b>COMMENTS for Dip Applications:</b> Allow fruit to dry for 1 hour before being stored.

### WALNUTS:

PEST	APPLICATION RATE & TIMING
Black Scale Calico Scale European Fruit Lecanium Scale Frosted Scale Olive Scale San Jose Scale European Red Mite Eggs Walnut Aphid Eggs	<b>DELAYED DORMANT:</b> Use 4 to 6 gals. per acre in 200 to 500 gals. of water per acre.  <b>COMMENTS:</b> Use only on trees that have not suffered from lack of moisture at any time during the growing season. <b>DO NOT</b> apply to orchards where soil moisture is low. Trees must be fully dormant. <b>DO NOT</b> apply after husk split.
Spider Mites Soft Scales	<b>SUMMER FOLIAR (when leaves fully expanded):</b> Use 4 to 6 gals. per acre in 200 to 500 gals. water per acre.

## VEGETABLE CROPS OUTDOOR AND GREENHOUSE

**ASPARAGUS, BEANS, BEETS, CABBAGE, CAULIFLOWER and other Cole crops, CELERY, CUCURBITS, EGGPLANT, LETTUCE, MELON, PEPPER, POTATO, PUMPKIN, RADISH, SQUASH, SWEET POTATO, TOMATO, HERBS AND SPICES (Curly Leaf Basil, Lemon Balm, Mexican Oregano, Mint), ORIENTAL VEGETABLES (Acerola, Atemoy, Balsam pear (Bitter melon), Carambola, Chinese broccoli (Gai Lon), Chinese cabbage (Gai Choy), Chinese spinach, Chinese waxgourd, Cilantro, Citron melon, Dasheen, Ginger, Ginseng, Japanese artichoke, Japanese radish (Daikon), Rambutan):**

PESTS	APPLICATION RATE & TIMING
Aphids Mites Beetle Larvae Leafminers Thrips Leafhopper Whitefly Powdery Mildew	0.25-1 gal. of oil in 100 gals. of water per acre.  <b>COMMENTS:</b> For virus control on cucurbits use 0.75 gals. per 100 gals. of water. Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure. When using to control insect-transmitted disease, use higher-pressure 400 psi and ceramic hollow cone nozzles.

## ORNAMENTALS

### FOLIAGE ORNAMENTALS & BEDDING PLANTS:

PESTS	DILUTION RATE & TIMING
Aphids Adelgids	1-2.5 oz. per gal. of water  <b>COMMENTS: Summer (Foliar or Cover): DO NOT</b> spray plants during flowering.

### SHADE TREES\*\* AND SHRUBS INCLUDING CONIFERS, DECIDUOUS BROADLEAF EVERGREENS & WOODY ORNAMENTALS, ORNAMENTAL TREES\*\*, SHRUBS ALONG CITY STREETS, OTHER RIGHTS-OF-WAY INCLUDING CONIFERS, DECIDUOUS AND BROADLEAF EVERGREENS:

PESTS	DILUTION RATE & TIMING
Aphids Adelgids Eriophyid Mites Gall Mites Honey Locust Plant Bug Lace Bug Leaf Beetle Larvae Leafminers Leafrollers Mealybugs Psyllids (immature) Red Mites Sawfly (larvae) Scales (immature) Spider Mites Webworms Whiteflies	<b>Winter Dormant Period:</b> 2.5-4 oz. per gal. of water  <b>Summer (Foliar or Cover):</b> 1-2.5 oz. per gal. of water  <b>COMMENTS: DO NOT</b> spray more than 1 time per week. <b>DO NOT</b> spray when there is obvious moisture deficit in leaves, or the plant is under stress. For fall dormant applications, reduce rate to 2 gals. oil per 100 gals. water and limit use only to American Red Oak, Japanese Black Pine, Dogwood, Weeping Cherry, Cornelian Cherry, Crabapple, Norway Maple, Purple Plum.  <b>NOTE:</b> May cause discoloration of Blue Spruce. <b>DO NOT</b> use on conifers or ferns not tolerant to oil sprays. Use enough spray solution to completely penetrate the leaf canopy and cover both top and bottom of all of the leaves and stems until wet but without significant runoff.

## ORNAMENTALS *(continued)*

### FLOWERING AND FOLIAGE PLANTS INCLUDING ROSES AND OTHER FLOWERING SHRUBS: DURING WINTER AND DORMANT PERIODS

PESTS	DILUTION RATE & TIMING
Aphids Adelgids Eriophyid Mites Gall Mites Honey Locust Plant Bug Lace Bug Leaf Beetle Larvae Leafminers Leafrollers Mealybugs Psyllids (immature) Red Mites Sawfly (larvae) Scales (immature) Spider Mites Webworms Whiteflies	<b>Winter Dormant Period:</b> 2-5.4 oz. per gal. of water

### CHRISTMAS TREES\*\*:

PESTS	DILUTION RATE & TIMING
Scale (soft & hard) (immature)	2-3 oz. per gal. of water
Spider Mites	<b>COMMENTS: Winter</b>
Adelgids	0.75-2 oz. per gal. of water
Aphids	<b>COMMENTS: Summer</b>

Use a lower concentration for more sensitive plants.

\*\* This product removes the glaucous (blue) bloom from such evergreens as Colorado Blue Spruce and Koster Spruce. Always use lower dosage or test spray oil sensitive plants such as Cryptomeria, Smoke Tree, Chamaecyparis, Juniper, Japanese Holly and Spruce. Tendency toward sensitivity: Red Cedar and Douglas Fir.

## GREENHOUSES, CONTAINERS, AND INTERIORSCAPES

**Frequency of Application:** For the pests listed, use once a week initially, then as the pest is controlled, decrease the frequency to every 2-3 weeks as needed.

Application safety during bloom period should be determined for each individual species of plant to be treated by conducting a small test.

Protect painted surfaces, carpet and furnishings from overspray. May cause discoloration.

### AGERATUM, CROWN OF THORNS, DIEFFENBACHIA, FERNS, FICUS, LISIANTHUS, ORCHID, PALMS, PETUNIA, POINSETTIA, SCHEFFLERA, SUNFLOWER:

PESTS	DILUTION RATE
Aphids Fungus Gnats Leafminers Mealybugs Scales (soft & hard) Spider Mites Thrips Whitefly	0.5-1 gals. of oil per 100 gals. of water  <b>COMMENTS:</b> Due to varietal differences in response to a treatment of this product at the specified rate, we recommend conducting a small test on 1 or 2 plants of the specific variety to be treated.

### LEAF POLISH FOR HARDY PLANTS:

PESTS	DILUTION RATE
	1 oz. of oil per gal. of water

### AGLAONEMA, ASTER, AZALEAS, BEGONIAS, BROWALLIA, CAMELLIAS, CARNATION, CELOSIA, CHRYSANTHEMUM, COLEUS, COSMOS, DUSTY MILLER, EASTER LILIES, GARDENIAS, GERBERA, HELICHRYSUM, HIBISCUS FOLIAGE, HYDRANGEA, JADE PLANT, MARIGOLD, NEW GUINEA IMPATIENS, NICOTINA, PHILODENDRON, PORTULACA, REIGER BEGONIAS, SNAPDRAGON, ZINNIAS:

PESTS	DILUTION RATE
Aphids Fungus Gnats Leafminers Mealybugs Scales (soft & hard) Spider Mites Thrips Whitefly	1-2 gals. of oil per 100 gals. of water  <b>COMMENTS:</b> Due to varietal differences in response to a treatment of this product at the specified rate, we recommend conducting a small test on 1 or 2 plants of the specific variety to be treated.

Some plants are more sensitive to oil treatments if any of the following conditions are present when application is made: High humidity (74%), an overcast or cloudy day, inadequate air flow, a small greenhouse where the sunlight is magnified causing a fast build-up of temperature and light intensity.

### CORN (Sweet & Field), SUGAR BEETS:

PESTS	APPLICATION RATE & TIMING
Aphids Mites Leafminers Corn Earworm Rootworm Armyworm Whitefly	Corn: 1-2 gals. of oil in 100 gals. of water per acre. Sugar Beets: 2 gals. of oil in 100 gals. of water per acre.



## GREENHOUSES, CONTAINERS, AND INTERIORSCAPES *(continued)*

### HOPS\*:

PESTS	APPLICATION RATE & TIMING
Mites Powdery Mildew	1-2 gals. of oil in 100 gals. of water per acre.  <b>COMMENTS:</b> <b>For powdery mildew:</b> Initiate sprays at early leaf stage. Continue sprays every 10-14 days. <b>Mite control</b> will be effective under the same spray interval as powdery mildew sprays. Discontinue sprays at burr development.

### TOBACCO:

PESTS	APPLICATION RATE & TIMING
Aphids Mites Beetle Larvae Leafminers Thrips Leafhopper Whitefly	0.75-1 gal. of oil in 100 gals. of water per acre.

\*Asterisk denotes crop, pest not approved in California.

This product has not been tested on all species or varieties. Before treating a large area, treat a small area and observe prior to full scale application.

## CONDITIONS OF SALE AND WARRANTY

IT IS IMPOSSIBLE TO ELIMINATE ALL RISKS INHERENTLY ASSOCIATED WITH THE USE OF THIS PRODUCT. CROP INJURY, INEFFECTIVENESS, OR OTHER UNINTENDED CONSEQUENCES MAY RESULT BECAUSE OF SUCH FACTORS AS WEATHER CONDITIONS, PRESENCE OF OTHER MATERIALS, OR THE MANNER OF USE OR APPLICATION, ALL OF WHICH ARE BEYOND THE CONTROL OF BASF, THE MANUFACTURER OR SELLER. TO THE EXTENT CONSISTENT WITH APPLICABLE LAWS, ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW NEITHER BASF, THE MANUFACTURER OR SELLER SHALL BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. EXCEPT AS WARRANTED BY THIS LABEL, BASF, THE MANUFACTURER OR SELLER MAKES NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. EXCEPT AS PROVIDED BY APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND BASF'S, THE MANUFACTURER'S OR SELLER'S TOTAL LIABILITY, SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

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Made in Canada (may contain imported parts) for:  
BASF Corporation  
26 Davis Drive  
Research Triangle Park, NC 27709



We create chemistry



We create chemistry

# Safety Data Sheet

## Ultra-Pure Oil

Revision date : 2022/10/17  
Version: 4.0

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(30473446/SDS\_CPA\_US/EN)

### 1. Identification

#### Product identifier used on the label

#### Ultra-Pure Oil

#### Recommended use of the chemical and restriction on use

Recommended use\*: crop protection product, insecticide  
Recommended use\*: insecticide

\* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

#### Details of the supplier of the safety data sheet

Company:  
BASF CORPORATION  
100 Park Avenue  
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

#### Emergency telephone number

#### 24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300  
BASF HOTLINE: 1-800-832-HELP (4357)

#### Other means of identification

Substance number:	417476
Registration number:	EPA Registration number: 69526-5-499
Synonyms:	Petroleum oil mixture

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### 2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

#### Classification of the product

Asp. Tox.

1

Aspiration hazard

# Safety Data Sheet

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### Label elements

Pictogram:



Signal Word:  
Danger

Hazard Statement:  
H304 May be fatal if swallowed and enters airways.

Precautionary Statements (Response):  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or physician.  
P331 Do NOT induce vomiting.

Precautionary Statements (Storage):  
P405 Store locked up.

Precautionary Statements (Disposal):  
P501 Dispose of contents/container in accordance with local regulations.

## 3. Composition / Information on Ingredients

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

White mineral oil (petroleum)  
CAS Number: 8042-47-5  
Content (W/W): 98.0 %  
Synonym: White mineral oil, petroleum

## 4. First-Aid Measures

### Description of first aid measures

#### General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

#### If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. If necessary, give oxygen. If not breathing, give artificial respiration.

#### If on skin:

Immediately wash thoroughly with soap and water, seek medical attention. Remove contaminated clothing immediately and clean before re-use or dispose it if necessary.

#### If in eyes:

Remove contact lenses, if present. Wash affected eyes for at least 15 minutes under running water with eyelids held open. Seek medical attention.

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### **If swallowed:**

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention. Do not induce vomiting due to aspiration hazard. Never give anything by mouth to an unconscious person.

### **Most important symptoms and effects, both acute and delayed**

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

### **Indication of any immediate medical attention and special treatment needed**

#### Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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## **5. Fire-Fighting Measures**

### **Extinguishing media**

Additional information:

Use extinguishing measures to suit surroundings.

### **Special hazards arising from the substance or mixture**

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, nitrous gases

The substances/groups of substances mentioned can be released in case of fire.

### **Advice for fire-fighters**

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

### **Further information:**

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

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## **6. Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

### **Environmental precautions**

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water. A spill of or in excess of the reportable quantity requires notification to state, local and national emergency authorities. This product is not regulated by CERCLA ('Superfund').

### **Methods and material for containment and cleaning up**

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Dike spillage. Pick up with suitable absorbent material. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

## 7. Handling and Storage

### Precautions for safe handling

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect against heat. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Provide means for controlling leaks and spills. Follow label warnings even after container is emptied. The substance/product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme heat. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

### Conditions for safe storage, including any incompatibilities

Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

Storage stability:

May be kept indefinitely if stored properly.

If an expiry date is mentioned on the packaging/label this takes priority over the statements on storage duration in this safety data sheet.

## 8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

### Components with occupational exposure limits

White mineral oil (petroleum)	ACGIH, US:	TWA value 5 mg/m <sup>3</sup> Inhalable fraction ;
	OSHA Z1:	PEL 5 mg/m <sup>3</sup> Mist ;
	ACGIH, US:	; Exposure by all routes should be carefully controlled to levels as low as possible.
	ACGIH, US:	; Included in the regulation, but with no data values - See the regulation for further details



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### Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

### Personal protective equipment

#### RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

#### Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

#### Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

#### Eye protection:

Safety glasses with side-shields. Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

#### Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

#### General safety and hygiene measures:

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

## 9. Physical and Chemical Properties

Form:	liquid	
Odour:	slight odour, of petroleum	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
Colour:	colourless to slightly yellow	
pH value:	The product has not been tested.	
Melting point:	The product has not been tested.	
Boiling point:	The product has not been tested.	
Flash point:	173 °C	(Cleveland open cup)
Flammability:	not readily ignited	(other)

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Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Autoignition:	325 - 365 °C	(other)
Vapour pressure:	< 0.01 kPa ( 20 °C) Information based on the main component/s.	
Density:	approx. 0.85 g/cm <sup>3</sup> ( 15 °C)	
Vapour density:	not applicable	
Partitioning coefficient n-octanol/water (log Pow):	not applicable	
Thermal decomposition:	carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. To avoid thermal decomposition, do not overheat. No decomposition if stored and handled as prescribed/indicated.	
Viscosity, kinematic:	9.6 mm <sup>2</sup> /s ( 40 °C)	
Solubility in water:	insoluble	
Evaporation rate:	not applicable	
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.	

## 10. Stability and Reactivity

### Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

### Chemical stability

The product is stable if stored and handled as prescribed/indicated.

### Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

### Conditions to avoid

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Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

### Incompatible materials

strong acids, strong bases, strong oxidizing agents

### Hazardous decomposition products

Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

Possible thermal decomposition products:

carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide

Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. To avoid thermal decomposition, do not overheat.

No decomposition if stored and handled as prescribed/indicated.

---

## 11. Toxicological information

### Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

### Acute Toxicity/Effects

#### Acute toxicity

Assessment of acute toxicity: Slightly toxic after single ingestion. Slightly toxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

Of low toxicity after single ingestion. Of low toxicity after short-term skin contact. Virtually nontoxic by inhalation.

#### Oral

Type of value: LD50

Species: rat

Value: > 2,000 mg/kg

#### Inhalation

*Information on: White mineral oil (petroleum)*

Type of value: LC50

Species: rat

Value: > 5.2 mg/l

Exposure time: 4 h

An aerosol was tested.

#### Dermal

Type of value: LD50

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Species: rat  
Value: > 2,000 mg/kg

### Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

The product has not been tested. The statement has been derived from the properties of the individual components.

### Irritation / corrosion

Assessment of irritating effects: May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

### Skin

*Information on: White mineral oil (petroleum)*

*Species: rabbit*

*Result: non-irritant*

*Method: OECD Guideline 404*

-----

### Eye

*Information on: White mineral oil (petroleum)*

*Species: rabbit*

*Result: non-irritant*

*Method: OECD Guideline 405*

-----

### Sensitization

Assessment of sensitization: There is no evidence of a skin-sensitizing potential. The product has not been tested. The statement has been derived from the properties of the individual components.

*Information on: White mineral oil (petroleum)*

*Species: guinea pig*

*Result: Non-sensitizing.*

*Method: OECD Guideline 406*

-----

## Chronic Toxicity/Effects

### Repeated dose toxicity

Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. No substance-specific organotoxicity was observed after repeated administration to animals.

### Genetic toxicity

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

### Carcinogenicity

Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

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### Reproductive toxicity

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

### Teratogenicity

Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

### Other Information

Misuse can be harmful to health.

---

## 12. Ecological Information

### **Toxicity**

#### Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

#### Toxicity to fish

*Information on: White mineral oil (petroleum)*

*LL50 (96 h) > 10,000 mg/l, Leuciscus idus (OECD Guideline 203, static)*

*The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Limit concentration test only (LIMIT test).*

*Analogous: Assessment derived from products with similar chemical character.*

#### Aquatic invertebrates

*Information on: White mineral oil (petroleum)*

*LL50 (48 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)*

*The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Nominal concentration.*

*Analogous: Assessment derived from products with similar chemical character.*

#### Aquatic plants

*Information on: White mineral oil (petroleum)*

*Lowest observed effect concentration (72 h) < 100 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)*

*The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Nominal concentration. Limit concentration test only (LIMIT test).*

*Analogous: Assessment derived from products with similar chemical character.*

#### Chronic toxicity to aquatic invertebrates

*Information on: White mineral oil (petroleum)*

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(21 d) 10 mg/l, *Daphnia magna* (OECD Guideline 211, semistatic)  
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Nominal concentration.  
-----

### Persistence and degradability

#### Assessment biodegradation and elimination (H<sub>2</sub>O)

The product has not been tested. The statement has been derived from the properties of the individual components.

#### Elimination information

Inherently biodegradable.

#### Assessment biodegradation and elimination (H<sub>2</sub>O)

Information on: White mineral oil (petroleum)

Not readily biodegradable (by OECD criteria). Moderately/partially biodegradable.  
-----

### Bioaccumulative potential

#### Assessment bioaccumulation potential

The product has not been tested. The statement has been derived from the properties of the individual components.

#### Assessment bioaccumulation potential

Information on: White mineral oil (petroleum)

Because of the *n*-octanol/water distribution coefficient (log *P*<sub>ow</sub>) accumulation in organisms is possible. Because of the product's consistency and low water solubility, bioavailability is improbable. The product has not been tested. The statement has been derived from the structure of the product.  
-----

### Mobility in soil

#### Assessment transport between environmental compartments

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: White mineral oil (petroleum)

No data available.

Adsorption to solid soil phase is not expected.  
-----

### Additional information

Other ecotoxicological advice:

The product has not been tested.

Do not discharge product into the environment without control.



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### 13. Disposal considerations

#### Waste disposal of substance:

Pesticide wastes are regulated. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

#### Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

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### 14. Transport Information

#### Land transport

USDOT

Not classified as a dangerous good under transport regulations

#### Sea transport

IMDG

Not classified as a dangerous good under transport regulations

#### Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

---

### 15. Regulatory Information

#### Federal Regulations

##### Registration status:

Crop Protection      TSCA, US      released / exempt

**EPCRA 311/312 (Hazard categories):** Refer to SDS section 2 for GHS hazard classes applicable for this product.

#### State regulations

##### State RTK

PA

MA

NJ

##### CAS Number

8042-47-5

8042-47-5

8042-47-5

##### Chemical name

White mineral oil (petroleum)

White mineral oil (petroleum)

White mineral oil (petroleum)

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### 16. Other Information

#### SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2022/10/17

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