

# MasterLine®

By Univar

## KONTROL 31 – 67 CONCENTRATE For Mosquitoes, Flies and Gnats

A Quick Knockdown, Low Odor, Non-Corrosive Synergized Synthetic Pyrethroid  
for the Control of Adult Mosquitoes, in Residential, Recreational, and Other Areas.  
Also for Use Against Biting and Non-Biting Midge and Black Flies

For use only by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

### ACTIVE INGREDIENTS:

<b>Permethrin:</b> (3-phenoxyphenyl) methyl (+/-) cis/trans 3-(2,2-dichloroethenyl) 2,2-dimethyl- cyclopropanecarboxylate, (+/-) cis (min) 35%, (+/-) trans (max) 65%.....	31.15%
<b>Piperonyl Butoxide Technical*</b> .....	66.85%
<b>OTHER INGREDIENTS:</b> .....	2.00%
<b>TOTAL</b> .....	100.00%

\*(butylcarbityl)(6-propylpiperonyl) ether and related compounds

Contains 2.86 pounds of Permethrin and 6.13 pounds of Piperonyl Butoxide per gallon.

EPA Registration No. 73748-6

## KEEP OUT OF REACH OF CHILDREN CAUTION

See Inside Attached Booklet For Additional Precautionary Statements

“PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta haya sido explicado ampliamente”

Manufactured by:  
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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Remove contaminated clothing and wash before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

<b>First Aid</b>	
<b>If Swallowed:</b>	Call a poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person.
<b>If on Skin or Clothing:</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 – 20 minutes. Call a poison control center or doctor for treatment advice.
<b>If in Eyes:</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 poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact Poison Control Center at 800-222-1222 for emergency medical treatment information.	
<b>NOTE TO PHYSICIAN AND VETERINARIANS:</b> Do not administer or instill milk, cream or other substances containing vegetable or animal fats which will enhance absorption of lipophilic substances.	

#### Personal Protective Equipment (PPE)

Mixers, loaders, applicators, and other handlers must wear;

- Long-sleeve shirt and long pants,
- Shoes plus socks,
- Chemical-resistant gloves made of any waterproof material (except for pilots), and
- Chemical-resistant apron for mixers/loaders, persons cleaning equipment, and persons exposed to the concentrate.

See engineering controls for additional requirements.

#### User Safety Requirements

- Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

#### Engineering Controls

- Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].
- Human flagging is prohibited. Flagging to support aerial application is limited to use of Global Positioning System (GPS) or mechanical flaggers.

### User Safety Recommendations

- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should 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 pesticide is extremely toxic to aquatic organisms, including fish and aquatic invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence or disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or washwaters.

## PHYSICAL AND CHEMICAL HAZARDS

Do not use, pour, spill or store near heat or open flame. Flashpoint greater than 230°F.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For use only by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

Note: Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.

### Precautions and Restrictions

- Do not make applications during rain.
- Not for use in metered release systems.
- Not for use in outdoor residential misting systems.
- Not for indoor application.

## STORAGE AND DISPOSAL

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

**Pesticide Storage and Spill Procedures:** Store upright at room temperature. Avoid exposure to extreme temperatures. In case of spill or leakage, soak up with an absorbent material such as sand, sawdust, earth, fuller's earth, etc. Dispose of with chemical waste.

**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: Nonrefillable Container:** Metal or Plastic Container. Do not reuse or refill container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities, such as burning of plastic containers. If burned, stay out of smoke. Triple rinse as follows:

**Containers 5 gallons or less:** Empty the remaining contents into application equipment and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  full with mineral oil and recap. Shake for 10 seconds. Pour rinsate into 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. Once cleaned, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill or by other procedures approved by State and local authorities. Do not cut or weld metal containers.

**Containers larger than 5 gallons:** Empty the remaining contents into application equipment. Fill the container  $\frac{1}{4}$  full with mineral oil. Replace and tighten closures. Tip container on its side and roll back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip 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. Once cleaned, offer for recycling or reconditioning if appropriate.

**Refillable container:** Refill this container with pesticide 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 before refilling is the responsibility of the refiller.

Return container to point of purchase for reuse with seal intact and in salable condition. Before refilling, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices. After filling and before transporting, check for leaks. Do not refill or transport damaged or leaking container.

To clean the container before final disposal, empty the remaining contents from the container into application equipment or mix tank. Fill the container about 10 percent full with mineral oil. Agitate vigorously or recirculate mineral oil with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing process two more times.

## CONDITIONS AND RATES TO USE FOR MOSQUITO CONTROL

**KONTROL 31-67 CONCENTRATE** may be applied either diluted or undiluted as a thermal or non-thermal fog.

**KONTROL 31-67 CONCENTRATE** is approved for application as an ultra low volume (ULV) non-thermal aerosol (cold fog) to control adult mosquitoes, flies and gnats in residential and recreational areas where these insects are a problem, such as, but not limited to parks, campsites, woodlands, athletic fields, golf courses, residential areas, municipalities, gardens, playgrounds, recreational areas and overgrown waste areas. For best results, treat when insects are most active and conditions are conducive to keeping the fog close to the ground.

Both ground and aerial applications should be made when meteorological conditions are conducive to keeping the spray cloud close to the ground, such as when an air temperature inversion is present. Applications during the cool hours of early morning or evening are preferable. Air temperatures should be greater than 50° F when conducting all types of applications. Application in calm air conditions is to be avoided. Apply only when ground wind speed is greater than 1 mph. Do not apply when wind speeds exceed 10 mph. Applications must not exceed the recommended rates.

Do not re-treat a site more than once in 3 days. Do not exceed 25 applications at 0.007 lbs. of permethrin per acre per application or 0.025 lbs. PBO per acre per application, or 0.18 lbs. of permethrin per acre per season or 2.0 lbs. PBO per acre per year. When rotating products with other insecticides containing piperonyl butoxide, do not exceed 2 lbs. PBO per acre per year. When targeting *Aedes Taeirorhynchus* and other difficult species applications of PBO may be made up to 0.08 lbs. PBO per acre.

More frequent treatments may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

**KONTROL 31-67 CONCENTRATE** can be applied over specific growing crops and range grasses prior to harvest for the control of adult mosquitoes and biting flies within or adjacent to these areas. Application can only be made where the following crops are present:

Alfalfa	Filbert
Almonds	Garlic
Apples	Range Grasses
Artichoke, globe	Horseradish
Asparagus	Leafy Vegetables (except Brassica)*
Avocado	Lettuce, head
Broccoli	Mushrooms
Brussels Sprouts	Onion, dry bulb
Cabbage	Peaches
Cauliflower	Pears
Celery	Pepper, bell
Cherries	Pistachio
Corn, fodder	Potato
Corn, forage	Soybeans
Corn, grain (field and pop)	Spinach
Corn, stover	Tomatoes
Corn, sweet kernel plus cob with husks removed	Vegetable, cucurbits**
Eggplant	Walnuts

\* **Leafy Vegetables:** including Leafy vegetables (except brassica), Amaranth (leafy amaranth, Chinese spinach, tampala), Arugula (Roquette), Chervil, Chrysanthemum (edible leaved and garland), Corn salad, Cress (garden), Cress (upland, yellow rocket, winter cress), Dandelion, Dock (sorrel), Endive (escarole), Lettuce (head and leaf), Orach, Parsley, Purslane (garden and winter), Radicchio (red chicory), Spinach (including New Zealand and vine – Malabar spinach, Indian spinach).

\*\* **Vegetable, Cucurbits:** including Chayote (fruit), Chinese waxgourd (Chinese preserving melon), Citron melon, Cuban pumpkin, Cucumber, Gherkin, Gourd (edible, includes hyotan, cucuzza, hechima, Chinese okra), Momordica spp. (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), Muskmelon (hybrids and/or cultivars of Cucumis melo including true cantaloupe, cantaloupe, casaba, Crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, snake melon and Winter melon), Pumpkin, Squash (includes summer squash types such as: butternut squash, calabaza, crookneck squash, Hubbard squash, scallop squash, straightneck squash, vegetable marrow and zucchini, and winter squash types such as acorn squash and spaghetti squash), Watermelon (includes hybrids and/or varieties of Citrullus lanatus).

In the treatment of corrals, feedlots, animal confinements/houses, swine lots, poultry ranges and zoos, cover any exposed drinking water, drinking fountains and animal feed before application. Do not contaminate non-approved sites with spray drift.

## GROUND APPLICATION INSTRUCTIONS (Thermal and Non-Thermal Applications)

**DROPLET SIZE CALIBRATION FOR GROUND APPLICATION EQUIPMENT:** Spray equipment must be adjusted so that the volume median diameter is less than 30 microns ( $D_v 0.5 < 30 \mu\text{m}$ ) and that 90% of the spray is contained in droplets smaller than 48 microns ( $D_v 0.9 < 48 \mu\text{m}$ ). Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

### THERMAL AEROSOL FOGGING

**TRUCK MOUNTED:** Apply diluted or undiluted with suitable Thermal Fogging equipment. Do not exceed the maximum a.i./acre rates. May be applied at speeds of 5 to 20 mph, treating a 300 ft. swath. To reduce oil requirement and sludge buildup in equipment, use a suitable mineral oil of 60 – 100 second viscosity. For use with hand foggers, use the same a.i./acre rates and a swath width of 50 ft. with a walking speed of 2 mph. Do not wet foliage since the oil base formulation may be phytotoxic. Do not fog when wind conditions exceed 10 miles per hour. Use well maintained and properly calibrated fogger.

**Suggested Dilution Rates to Achieve 0.00175# a.i. per Acre**

			<b>HAND HELD THERMAL FOGGERS 50 FT SWATH AT 2 MPH 0.00318# A.I. PER ACRE</b>	
<b>MACHINE OUTPUT GAL/HOUR</b>	<b>DILUTION RATIO WITH FOG OIL 5 MPH</b>	<b>DILUTION RATIO WITH FOG OIL 10 MPH</b>	<b>MACHINE OUTPUT</b>	<b>DILUTION RATE</b>
10 gal/hr	1: 79	1 : 39	0.25 gal/hr	1 : 15.5
20 gal/hr	1: 159	1 : 79	2.0 gal/hr	1 : 131
30 gal/hr	1: 239	1 : 119	5.0 gal/hr	1 : 330
			8.0 gal/hr	1 : 496

### NON-THERMAL AEROSOL (COLD FOG)

**KONTROL 31-67 CONCENTRATE Non-Thermal Aerosol (cold fog) Application:** To control mosquitoes, midges, black flies and other biting flies, apply **KONTROL 31-67 CONCENTRATE** using any standard ULV ground applicator capable of producing a non-thermal aerosol spray. Apply the product undiluted at a flow rate of 1.0 to 6.00 ounces per minute at an average vehicle speed of 10 mph. If a different vehicle speed is used, adjust the rate accordingly. These rates are equivalent to 0.0035 to 0.021 pounds of permethrin and 0.0075 to 0.047 pounds of piperonyl butoxide per acre. Vary flow rates accordingly to vegetation density and mosquito population. Use higher flow rates in heavy vegetation or when populations are high. An accurate flow meter must be used to ensure the proper flow rate. **KONTROL 31-67 CONCENTRATE** may also be applied by diluting with a suitable solvent such as mineral oil and applying so as not to exceed the maximum pounds of active ingredient per acre as shown in the first column of the following tables. The following charts represent some suggested dilution and application rates for ground ULV applications. If an alternative dilution rate is used, adjust the flow rate accordingly.

For proper ground application, mount the fog applicator so that the nozzle is at least 4 ½ feet above ground level and directed out the back of the vehicle. Failure to follow the above directions may result in reduced effectiveness.

## Undiluted Use Rates for KONTROL 31-67 CONCENTRATE

Permethrin Lbs./Acre	Application Rates/Fluid Ounces To Use Per Minute			Fl. Oz. KONTROL 31-67 CONCENTRATE per Acre
	5 mph	10 mph	15 mph	
0.021	3.0	6.0	9.0	1.0
0.0105	1.5	3.0	4.5	0.5
0.007	1.0	2.0	3.0	0.33
0.0035	0.5	1.0	1.5	0.16

### For a 1:2 KONTROL 31-67 CONCENTRATE/Solvent Dilution Ratio

Mix one (1) part KONTROL 31-67 CONCENTRATE with two (2) parts solvent and apply at the following rates.

Permethrin Lbs./Acre	Application Rates/Fluid Ounces To Use Per Minute			Fl. Oz. Finished Spray per Acre
	5 mph	10 mph	15 mph	
0.007	3.0	6.0	9.0	1.0
0.0035	1.5	3.0	4.5	0.5
0.00175	0.75	1.5	2.25	0.25

### For a 1:4 KONTROL 31-67 CONCENTRATE/Solvent Dilution Ratio

Mix one (1) part KONTROL 31-67 CONCENTRATE with four (4) parts solvent and apply at the following rates.

Permethrin Lbs./Acre	Application Rates/Fluid Ounces To Use Per Minute			Fl. Oz. Finished Spray per Acre
	5 mph	10 mph	15 mph	
0.007	5.0	10.0	15.0	1.6
0.0035	2.5	5.0	7.5	0.8
0.00175	1.25	2.5	3.5	0.4

### For a 1:8 KONTROL 31-67 CONCENTRATE/Solvent Dilution Ratio

Mix one (1) part KONTROL 31-67 CONCENTRATE with eight (8) parts solvent and apply at the following rates.

Permethrin Lbs./Acre	Application Rates/Fluid Ounces To Use Per Minute			Fl. Oz. Finished Spray per Acre
	5 mph	10 mph	15 mph	
0.007	9.0	18.0	27.0	3.0
0.0035	4.5	9.0	13.5	1.5
0.00175	2.25	4.5	6.75	0.75

**AS A BARRIER SPRAY USING A MISTER TYPE UNIT:** For use in non-thermal equipment, apply **KONTROL 31-67 CONCENTRATE** with a mist blower adjusted to deliver droplets with a volume median diameter of 50 – 120µm. Use undiluted or diluted to achieve an application of 0.00175 / 0.00376 # a.i./acre. Use a 50 ft. (15.2m) swath while walking at a speed of 2 mph (3.2 kph). If using a different speed, swath or dilution, do not exceed the maximum a.i./acre. When this product is applied as a barrier treatment, do not apply within 100 feet (30 meters) of lakes and streams.

## AERIAL APPLICATION INSTRUCTIONS

The use of aircraft specially equipped and capable of applying ULTRA LOW VOLUMES of **KONTROL 31-67 CONCENTRATE** may be necessary. Aerial applications should be done by suitable ULV equipment. Flow rate should be set so as to achieve 0.16 to 1.0 fluid ounces **KONTROL 31-67 CONCENTRATE** per acre of the undiluted product. **KONTROL 31-67 CONCENTRATE** may also be diluted with a suitable solvent such as mineral oil and applied by aerial ULV equipment so long as 1.0 fluid ounces per acre of **KONTROL 31-67 CONCENTRATE** is not exceeded.

### DROPLET SIZE CALIBRATION FOR AERIAL APPLICATION EQUIPMENT

**Aerial Application made at <200 feet above ground elevation:** Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns ( $D_v 0.5 < 60 \mu\text{m}$ ) and that 90% of the spray is contained in droplets smaller than 100 microns ( $D_v 0.9 < 100 \mu\text{m}$ ). The effects of flight speed and, for non-rotary nozzles, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using a wind tunnel and laser based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

**Aerial Application made at >200 feet above ground elevation:** Spray equipment must be adjusted so that the volume median diameter produced is less than 70 microns ( $D_v 0.5 < 70 \mu\text{m}$ ) and that 90% of the spray is contained in droplets smaller than 145 microns ( $D_v 0.9 < 145 \mu\text{m}$ ). The effects of flight speed and, for non-rotary nozzles, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

Do not apply by fixed wing aircraft at a height less than 100 feet, or by helicopter at a height less than 75 feet unless specifically approved by the state or tribe based on public health needs. Apply at a sufficient airspeed to deliver the appropriate amount of a.i./acre (from 0.00175 to 0.007 # a.i./acre) and to achieve the appropriate droplet range. Apply when wind speed is greater than 1 mph.

**PROHIBITION FOR AERIAL USE:** Not for aerial application in Florida unless specifically authorized by the Bureau of Entomology and Pest Control, Florida Department of Agriculture and Consumer Services.

**NOTICE:** Buyer and user assume all risks and liability of use, storage and/or handling of this product not in accordance with the terms of this label.

**BUYER GUARANTEE LIMITED TO LABEL CLAIMS**