

BID FORM

NOTE TO ALL BIDDERS: WHEN SUBMITTING YOUR BID, PLEASE TURN IN ONLY THE FOLLOWING ITEMS:

- 1. FIRST PAGE OF SECTION V.**
- 2. PROPOSAL(S) THAT YOU ARE BIDDING ON (PLEASE DO NOT RETURN THE ENTIRE SPECIFICATION SET).**
- 3. LAST PAGE OF SECTION V.**
- 4. ANY REQUIRED INFORMATION REQUESTED BY THE DETAILED SPECIFICATIONS AND/OR PROPOSAL(S) YOU ARE BIDDING ON.**

THANK YOU.

DATE June 20, 2021

VERMILION PARISH POLICE JURY

Courthouse Building
100 North State Street
Suite 200
Abbeville, Louisiana 70510
OR
On-Line at www.centralbidding.com

Gentlemen:

In compliance with your invitation for the supplying of "Materials for Parish Road Maintenance" F.O.B. Vermilion Parish/Pick-Up by Parish Truck, having examined the specifications with related documents and being familiar with all of the conditions surrounding the supplying of the material called for including the availability of materials and labor, the undersigned hereby proposes to furnish all materials and supplies, in accordance with the contract documents, within the time agreed upon and at the prices stated below. These prices are to cover all costs incurred in performing the work required under the contract documents of which this Proposal is a part.

Bidder acknowledges receipt of the following addenda: NA

The undersigned bidder agrees to furnish all material described in the specifications for the following unit prices for a period from July 1, 2021 through December 31, 2021.

DETAILED SPECIFICATIONS FOR MOSQUITO CONTROL CHEMICALS

ARTICLE 1 - SCOPE OF WORK

Furnish, deliver, and unload F.O.B. to the Vermilion Parish Police Jury, Public Works Building, 2211 Leonie Street, Abbeville, Louisiana, the following mosquito control chemicals.

ARTICLE 2 - MOSQUITO CONTROL CHEMICALS

Chemicals shall meet all EPA specifications for Ground Mosquito Control Applications by Ground ULV Machines and Aerial Applications. They shall also meet all label requirements of the EPA. **MSDS sheet and product label must accompany bid.**

MALATHION

Chemical containing 96.8-percent technical grade 9.79-pounds per gallon approved label for ultra low volume application for mosquito control. Product must have an Oral LD₅₀ (rat) of 5,550-mg/kg. Price quoted should be per gallon and should not include taxes. Prices are to be quoted by the gallon. Chemicals shall be supplied in bulk transport (55-gallon drum not acceptable). Vermilion Parish Police Jury to furnish appropriate tanks, 1,000-gallon minimum.

DIBROM CONCENTRATE

A special formulation for use undiluted or diluted in diesel oil. Chemical containing 87.4-percent Naled and 12.6-percent other ingredients. Product must have an Oral LD₅₀ (rat) of 92/191 mg/kg (male/female). Prices are to be quoted per gallon, not including taxes.

SCOURGE INSECTICIDE

A synthetic pyrethroid formulation. Chemical containing 18-percent Resmethrin, 54-percent Piperonyl Butoxide - Technical, and 28-percent other ingredients. Prices are to be quoted per gallon, not including taxes.

SYNERGIZED PERMETHRIN

31-66: A synergized concentrate of permethrin containing a minimum 31-percent of Permethrin and a minimum 66-percent of Piperonyl Butoxide - technical (or 31-67). Product must have an Oral LD₅₀ (rat) of >500-mg/kg.

31-67: 31.15%: Permethrin. Piperonyl Butoxide Technical: 66.85%. Inert Ingredients: 2.0%.

Prices are to be quoted per gallon, not including taxes.

SUSPEND SC INSECTICIDE

Chemical containing 4.75-percent Deltamethrin and 95.25-percent other ingredients. Prices are to be quoted per gallon, not including taxes.

ALTOSID BRIQUETS

Chemical containing 8.62-percent S-Methoprene (CAS #65733-16-6) (Dry Weight Basis) and 91.38-percent other ingredients. Prices are to be quoted per case, not including taxes.

VECTOLEX WDG

Chemical containing 51.2-percent w/w Bacillus sphaericus serotype H5a5b, Strain 2362 dried concentrate and 48.8-percent w/w Inert ingredients. Prices are to be quoted per pound, not including taxes.

DUET

Chemical containing 1.00-percent Prallethrin, 5.00-percent Sumithrin, 5.00-percent Piperonyl Butoxide, and 89.00-percent Other Ingredients. Prices are to be quoted per gallon, not including taxes.

ULV MOSQUITO MASTER 412

Chemical containing 12.0-percent Chlorpyrifos [0.0-diethyl 0-(3,5,6, -trichloro 2-pyridyl)] phosphorothioate, 4.0-percent Permethrin (3-phenoxyphenyl) methyl (\pm) cis, trans-3-(2,2-dichlorethenyl) -2,2-dimethyl-cyclopropanecarboxylate, and 84.0-percent other ingredients. For ground and aerial applications. Ready to use solution. Prices are to be quoted per gallon, not including taxes.

DELTAGARD INSECTICIDE

Contains 2.0-percent Deltamethrin and 98-percent other ingredients. Provides quick knockdown and effective control of mosquitoes, flies, gnats, and non-biting midges. May be applied undiluted or diluted in water. Prices are to be quoted per gallon, not including taxes.

ANVIL 10+10 ULV

Contains 10.0-percent 3-Phenoxybenzyl-(1RS, 3RS, 1RS, 3SR)-2,2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate; 10-percent Piperonyl Butoxide ((butylcarbityl) (6-propylpiperonyl)) ether and related compounds; and 80.0-percent Other Ingredients (contains petroleum distillate). For ground and aerial applications. Ready to use solution. Prices are to be quoted per gallon, not including taxes.

AQUA ANVIL

Contains 10.0-percent Sumithrin, 3-Phenoxybenzyl-(1RS, 3RS, 1RS, 3SR)-2,2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate; 10.0-percent Piperonyl Butoxide (butylcarbityl)(6-propylpiperonyl) ether and related compounds; and 80.0-percent other ingredients. For ground and aerial applications. Ready to use solution. Prices are to be quoted per gallon, not including taxes.

ARTICLE 3 - SPECIAL PROVISION

The supplier shall include with his bid any special provision that should be considered which may affect the intent of this contract.

BID PROPOSAL NUMBER 7 — MOSQUITO CONTROL CHEMICALS		
ITEM NO.	DESCRIPTION & UNIT	UNIT PRICE F.O.B. VERMILION PARISH
1.	Malathion or Equal, per gallon,	\$ NO BID
2.	Synergized Permethrin, 31-66 or Equal, per gallon,	\$ 94.00 per gallon
3.	Synergized Permethrin, 31-67 or Equal, per gallon,	\$ NO BID
4.	Scourge 18/54 or Equal, per gallon,	\$ NO BID
5.	Dibrom Concentrate or Equal, per gallon,	\$ NO BID
6.	Suspend SC or Equal, per gallon,	\$ NO BID
7.	Altosid Briquets or Equal, per case,	\$ 480.00 per case
8.	Vectolex WDG or Equal, per pound,	\$ NO BID
9.	Duet or Equal, per gallon,	\$ 150.98 per gallon
10.	ULV Mosquito Master 412 or Equal, per gallon,	\$ 55.76 per gallon
11.	DeltaGard Insecticide or Equal, per gallon,	\$ NO BID
12.	Anvil 10+10 ULV, per gallon,	\$ 187.06 per gallon
13.	AquaANVIL, per gallon,	\$ 230.84 per gallon
* ALL MOSQUITO CONTROL CHEMICALS MUST BE READY-BLENDED, NO MIXING OF CHEMICALS TO BE PERFORMED BY THE VERMILION PARISH POLICE JURY TO ACQUIRE THE FINISHED PRODUCT SHOWN IS ALLOWED.		
Follow Instructions Presented in Article 12 of Section IV and Indicate with an Asterisk Each 10% Preference Item Claimed		

The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work called for. **TAXES NOT INCLUDED.**

The Contractor understands that the quantities of work will vary and offers to furnish the material as shown above in each Bid at the unit prices stated in the schedule. The Owner reserves the right to reject any Bid.

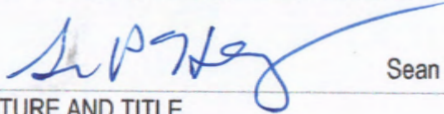
Upon receipt of written Notice of Acceptance of this bid, bidder will execute the agreement furnished by the Owner and return it before July 1, 2021, with registration certifications as outlined in Section IV, Article 11.

Respectfully Submitted,

Clarke Mosquito Control Products, Inc.

NAME OF PERSON, FIRM, OR CORPORATION

BY:



Sean P. Healy, Control Consultant

SIGNATURE AND TITLE

675 Sidwell Court, St. Charles, IL 60174

BUSINESS ADDRESS

Tel: 225-335-3237 Fax: 630-443-3070

BUSINESS TELEPHONE AND FAX NUMBER

www.clarke.com

BUSINESS INTERNET SITE

shealy@clarke.com, customercare@clarke.com

BUSINESS E-MAIL ADDRESS

Perm-XTM UL 31-66

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.

CONTROLS: Adult Mosquitoes, Biting and Non-biting Midges, Black Flies and other outdoor flying insects as listed on this label.

FOR USE AS A: ULV thermal or non-thermal aerosol using ground or aerial equipment in areas including: residential, recreational areas, parks, campsites, woodlands, athletic fields, golf courses, municipalities, playgrounds, and non-crop waste areas and over listed growing crops and range grasses prior to harvest for the control of adult mosquitoes and biting flies within or adjacent to these areas. Refer to label for additional use sites.

SPECIMEN LABEL

ACTIVE INGREDIENTS:

Permethrin 31%

Piperonyl Butoxide 66%

OTHER INGREDIENTS: 3%

TOTAL: 100%

*Contains 2.8025 lb. A.I. Permethrin plus 5.9668 lbs. A.I. Piperonyl Butoxide per gallon.

KEEP OUT OF REACH OF CHILDREN CAUTION

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta haya sido explicado ampliamente.
(TO THE USER: If you cannot read English, do not use this product until the label has been fully explained to you.)

See inside label booklet for additional Precautionary Statements.

EPA Reg.No. 89459-45
EPA Est. No. 2724-TX-1

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 repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or the toilet. Remove contaminated clothing and wash before reuse.

FIRST AID

If swallowed	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious or convulsing person.
If on skin or clothing	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.

(continued)

If on skin or clothing	<ul style="list-style-type: none">• Call a poison control center or doctor for advice.
If in eyes	<ul style="list-style-type: none">• 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.• Call a poison control center or doctor for treatment advice.
If inhaled	<ul style="list-style-type: none">• Move person to fresh air.• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.• Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER: Have this product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact 1-800-248-7763 for information including health concerns, medical emergencies or pesticide incidents.	

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some materials that are chemical-resistant to this product are listed below. Mixers, loaders, applicators and other handlers (including during mixing/loading, repair and cleaning of equipment and disposal of pesticide) must wear the following:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves such as barrier laminate, viton, neoprene rubber or nitrile rubber
- Chemical-resistant apron for mixers/loaders, persons cleaning equipment and persons exposed to the concentrate

In addition to the above PPE, mixers and loaders supporting aerial applications to forests must wear at least a NIOSH-approved respirator with:

- A dust/mist filter with MSHA/NIOSH approval number prefix TC-21C, or any R, P, or HE filter.

See Engineering Controls for additional requirements.

USER SAFETY REQUIREMENTS

Follow manufacturer's instructions for cleaning/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 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 the 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 product is extremely toxic to aquatic organisms including fish and invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and other aquatic organisms. Before making the first application of the 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.

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 water when disposing of equipment washwaters.

This pesticide 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 treatment area.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill or store near heat or open flame.

DIRECTIONS FOR USE

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

Precautions and Use Restrictions

- Apply this product only as specified on this label.
- For use only by federal, state, tribal or local government officials responsible for public health or vector control or by persons certified by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications or by persons under their direct supervision.
- Apply this product at temperatures greater than 50°F and when wind speed equals or exceeds 1 mph.
- Not for use in metered release systems.
- Not for use in outdoor residential misting systems.
- Do not make applications during rain.
- Do not spray this product on or allow it to drift onto cropland (other than crops listed), or potable water supplies.
- 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.
- For hand carried and/or lawn mower foggers: Do not fog wet foliage. Do not fog when wind conditions exceed 10 mph. Only use a clean, well maintained and properly calibrated fogger, known to give excellent performance. Fog down wind.
- Do not re-treat a site more than once in 3 days.
- 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.

Do not retreat the site more than once in three days. Do not exceed 25 applications at 0.007 lbs. permethrin per acre per application or 0.0149 lbs piperonyl butoxide per acre per application, or 0.18 lbs of permethrin per acre per season or 0.383 lbs piperonyl butoxide per acre per year. 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 diseases in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

Spray Droplet Size Determination

Ground-Based Application: Spray equipment must be adjusted so that the volume median diameter is less than 30 microns ($D_{v0.5} < 30 \mu m$) and that 90% of the spray is contained in droplets smaller than 50 microns ($D_{v0.9} < 50 \mu m$). Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using laser based equipment must be used to produce acceptable droplet 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 60 microns ($D_{v0.5} < 60 \mu m$) and that 90% of the spray is contained in droplets smaller than 100 microns ($D_{v0.9} < 100 \mu m$). 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 ($D_{V0.5} < 70 \mu\text{m}$) and that 90% of the spray is contained in droplets smaller than 145 microns ($D_{V0.9} < 145 \mu\text{m}$). 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.

GROUND BASED APPLICATIONS

ULV NON-THERMAL AEROSOL (COLD FOG): To control Mosquitoes, Midges and Black flies, apply PERM-X™ UL 31-66 using truck-mounted ground ULV (cold fog) equipment. When applying this product undiluted, apply at a flow rate of 0.4794 to 1.9183 fluid ounces per minute at an average speed of 10 mph. These rates are equivalent to 0.00175 to 0.007 pounds of permethrin a.i. and 0.0038 to 0.0149 pounds of piperonyl butoxide a.i. per acre. If a different vehicle speed is used, adjust the rate accordingly. Vary flow rates accordingly to vegetation density and mosquito population. Use higher flow rates in heavy vegetation or when insect populations are high. An accurate flow rate control system must be used to ensure proper flow rate. PERM-X™ UL 31-66 may also be applied by diluting, 1 part to 1 part of a 60 to 100 second mineral oil or another suitable solvent, applied so as not to exceed the maximum a.i. rates per acre as shown in the rates charts. If an alternate dilution rate is required, adjust the flow rate accordingly, provided the droplet size and spectrum remain within label specifications. Do not exceed a flow rate of 20 oz/minute unless recommended and required by equipment manufacturers and/or Public Health Officials for vehicle speeds of 10 to 20 mph and when the fogging equipment is capable of such higher rates of output per minute.

THERMAL FOGGING: Apply PERM-X™ UL 31-66 diluted or by suitable Thermal Foggers mounted on trucks. If diluted, use a 60 to 100 second viscosity mineral oil, or another suitable non-phytotoxic diluent to reduce oil requirement and sludge buildup in equipment. May be applied at truck speeds of 5 to 20 mph but do not exceed the maximum active ingredient application rates. For use with Hand Carried and/or Lawn Mower thermal foggers, adjust the sprayer to apply the desired a.i. per acre based on a 50 foot swath and walking speed of 2 mph. Do not fog to wet foliage. Thermal fogging applications of PERM-X™ UL 31-66 can be made to deliver 0.00175 to 0.007 lb of permethrin a.i. per acre and 0.00175 to 0.01490 piperonyl butoxide per acre.

USE AS AN INSECT BARRIER TREATMENT: For use in non-Thermal ULV, motorized, portable, backpack, and fog type mist blower equipment, apply PERM-X™ UL 31-66 with equipment adjusted to deliver ULV size droplets with a volume median diameter of 50–100 microns. PERM-X™ UL 31-66 may be applied undiluted or diluted (see application rates tables section). If diluted, use a 30 to 100 second mineral oil, or another, (if recommended by Public Health Officials), suitable non-phytotoxic diluent. Use 0.00175 pounds permethrin a.i. per acre at a 50 ft. (15.2 m) swath width, while walking at a speed of 2 mph (3.2 kph). Whether applied undiluted or diluted, or at a different speed, make sure that the same amount of permethrin a.i. is applied per acre.

**AERIAL APPLICATION

Make Ultra-Low Volume aerial applications of PERM-X™ UL 31-66 according to the application rate table on this label. Application should be made by suitable aerial ULV equipment at an altitude ranging from 120-175 feet depending on the terrain and weather conditions. The recommended airspeed

for fixed wing aircraft with flat fan nozzles is from 120 to 160 mph. For aircraft equipped with rotary nozzles, apply at sufficient airspeed to deliver the appropriate amount of PERM-X™ UL 31-66 a.i. per acre. Do not exceed 0.007 lbs. permethrin a.i. and 0.01490 lbs. piperonyl butoxide per acre. Do not apply greater than 0.3197 fluid oz. of undiluted PERM-X™ UL 31-66 per acre as listed in the rates chart.

PROHIBITION ON AERIAL USE IN FLORIDA: Not for aerial application in the State of Florida unless specifically authorized by the Florida Bureau of Entomology and the Florida Department of Agriculture and Consumer Services.

PERM-X™ UL 31-66 HOW TO APPLY AND WHEN TO USE

Conditions and Rates To Use Perm-X™ UL31-66 Undiluted						
Pounds A.I. Per Acre		Application Rates				Fluid Ounces of Perm-X™ UL 31-66 per Acre
		Fluid Ounces per Minute at MPH				
Permethrin	PBO	5 mph	10 mph	15 mph	20 mph	
0.00700	0.01490	0.9591	1.9183	2.8773	3.8364	0.3197
0.00350	0.00750	0.4797	0.9054	1.4391	1.9188	0.1599
0.00175	0.00380	0.2398	0.4794	0.7191	0.9588	0.0799

DILUTION RATES FOR PERM-X™ UL 31-66 FOR A 1:4 DILUTION

Mix 1 part PERM-X™ UL 31-66 with 4 parts Suitable Mineral Oil: Apply as follows:						
Pounds of A.I. Per Acre		Application Rates FI Oz Per Minute At Vehicle Speeds				FI Oz Finished Spray Per Acre
Permethrin	PBO	5 mph	10 mph	15 mph	20 mph	
0.00700	0.01490	4.4727	9.5454	14.3181	19.0908	1.5909
0.00350	0.00750	2.3865	4.7730	7.1595	9.5460	0.7955
0.00175	0.00380	1.1934	2.3868	3.5803	4.7736	0.3978

DILUTION RATES FOR PERM-X™ UL 31-66 FOR A 1:8 DILUTION

Mix 1 part PERM-X™ UL 31-66 with 8 parts Suitable Mineral Oil: Apply as follows:						
Pounds of A.I. Per Acre		Application Rates FI Oz Per Minute At Vehicle Speeds				FI Oz Finished Spray Per Acre
Permethrin	PBO	5 mph	10 mph	15 mph	20 mph	
0.00700	0.01490	8.4000	16.8000	25.2000	33.6000	2.8000
0.00350	0.00750	4.2000	6.4000	12.6000	16.8000	1.4000
0.00175	0.00380	2.1000	4.2000	6.3000	8.4000	0.7000

DILUTION RATES FOR PERM-X™ UL 31-66 FOR A 1:2 DILUTION

Mix 1 part PERM-X™ UL 31-66 with 2 parts Suitable Mineral Oil: Apply as follows:						
Pounds of A.I. Per Acre		Application Rates FI Oz Per Minute At Vehicle Speeds				FI Oz Finished Spray Per Acre
Permethrin	PBO	5 mph	10 mph	15 mph	20 mph	
0.00700	0.01490	2.8767	5.7534	8.6302	11.5068	0.9589
0.00350	0.00750	1.4385	2.8770	4.3255	5.7540	1.4795
0.00175	0.00380	0.7184	1.4388	2.1582	2.8770	0.2398

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. May be applied at speeds of 5 mph up to 20 mph. Failure to follow these label directions may result in reduced effectiveness. For **Aerial Application, refer to the **Aerial Application section on this label. PERM-X™ UL 31-66 may be used as is, or diluted with a suitable solvent such as a 60 to 100 second viscosity mineral oil and applied at a rate not to exceed 0.3197 fl.

oz. of PERM-X™ UL 31-66 per acre. Both aerial and ground applications should be made when the wind is less than 10 mph. For exact rates, see the "UNDILUTED" or the "DILUTION" Rates charts on this label.

PERM-X™ UL 31-66 is recommended for application as an Ultra Low Volume (ULV) Thermal or Non-Thermal aerosol (cold fog) to control adult mosquitoes, and other insects as listed on this label, in residential and recreational areas where these insect pests become a problem; such as, but not limited to parks, campsites, woodlands, athletic fields, golf courses, municipalities, gardens, playgrounds, and non-crop waste areas. Treat when mosquitoes or insects are most active and weather conditions are conducive to keeping the fog close to the ground, e.g., cool temperatures and wind speeds are not greater than 10 mph. Applications during the cool hours of night or early morning are usually preferable.

URBAN ULV MOSQUITO APPLICATIONS

For control of resting or flying adult mosquitoes, biting flies and biting midges in application sites of residential, municipal and recreational areas such as: utility tunnels, sewers, storm drains and catch basins, pipe chases, underground basements, underground passages, parking decks, crawlspaces or underground buildings. This product may be applied using mechanical foggers, hand-held or truck-mounted ULV equipment suitable for these applications. Apply at rates, up to but not exceeding, 0.007 lbs active ingredient permethrin per acre. See Rate(s) charts.

MAY BE APPLIED OVER THE FOLLOWING CROPS

PERM-X™ UL 31-66 may 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	Corn, grain	Onion, bulb
Almond	Corn, stover	Peach
Apple	Corn, sweet, kernel + cob with husks removed	Pepper, bell
Artichoke	Eggplant	Pistachio
Asparagus	Fruit, pome, group 11	Potato
Avocado	Garlic	Soybean, seed
Broccoli	Range grasses	Spinach
Brussels sprouts	Horseradish	Tomato
Cabbage	Leaf petioles, subgroup 4B	Vegetable, cucurbit, group 9*
Cauliflower	Leafy greens, subgroup 4A	Walnut
Celery	Lettuce, head	Watercress
Cherry	Mushroom	
Corn, forage		

*40 CFR 180.41 Crop Group 9: Cucurbit Vegetables, includes Crop Subgroup 9A (melon) and Crop Subgroup 9B (squash/cucumber)

STORAGE & DISPOSAL

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

PESTICIDE STORAGE: Store product in its original labeled container in a cool, dry, locked place designated for such insecticides and out of reach of children. Do not expose to extreme temperatures. In case of spillage, soak up with absorbent material such as sawdust or fuller's earth; sweep up and place in a labeled container and dispose of as follows.

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 Containers 5 gallons or less - Nonrefillable container. Do not refill or reuse this container. 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 ¼ full with mineral oil (or other solvent used to dilute the product) 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. Once triple rinsed, recycle if available. Some agricultural pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact your local solid waste agency for disposal instructions. If recycling is not available, dispose of in a sanitary landfill or by incineration if allowed by state and local ordinances. **Nonrefillable Containers over 5 gallons to 55 gallons -** Nonrefillable container. Do not reuse or refill this container. 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 ¼ full with mineral oil (or other solvent used to dilute the product). 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. Once triple rinsed, recycle if available. Some agricultural pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact your local solid waste agency for disposal instructions. If recycling is not available, dispose of in a sanitary landfill or by incineration if allowed by state and local ordinances. **Refillable bulk containers over 55 gallons -** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full of mineral oil. Agitate vigorously or recirculate mineral oil with pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Central Garden & Pet Company, 1501 East Woodfield Road, 200W, Schaumburg, Illinois 60173

NOTE: This specimen label is for informational purposes only. All uses may not be approved in all states. See product labeling for use directions. Perm-X is a trademark of Wellmark International. © 2015 Wellmark International.

VEC 15-026

Safety Data Sheet



Section 1: Identification

Product identifier

Product Name

- **Perm-X UL 31-66**

Synonyms

- 100208937; 100208985; 100208986; 100208987; 100208988; EPA Reg. No.: 89459-45

Product Description

- Clear, pale amber liquid.

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

Recommended use

- Insecticide.

Restrictions on use

- Keep out of reach of children. Avoid release to the environment. Avoid contact with skin, eyes, or clothing. Do not take internally.

Details of the supplier of the safety data sheet

Manufacturer

- Central Garden & Pet Company
1501 E. Woodfield Road, Suite 200W
Schaumburg, IL 60173
United States

www.centralmosquitocontrol.com

Emergency telephone number

Manufacturer

- 1-800-234-2269

Manufacturer

- 1-800-424-9300 - CHEMTREC

Manufacturer (Transportation) • 1-703-527-3887 - Chemtrec - Outside US collect calls accepted

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012

- Acute Toxicity Oral 4
Acute Toxicity Inhalation 4
Specific Target Organ Toxicity Single Exposure 1
Skin Sensitization 1

Label elements

OSHA HCS 2012

WARNING



Hazard statements • Harmful if swallowed
 Harmful if inhaled
 Causes damage to organs - nervous system.
 May cause an allergic skin reaction

Precautionary statements

Prevention • Do not breathe dust, fume, gas, mist, vapors and/or spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves.

Response • IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison control center or doctor if you feel unwell.
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
 Rinse mouth.
 IF ON SKIN: Wash with plenty of soap and water.
 If skin irritation or rash occurs: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 IF exposed: Call POISON CENTER or doctor/physician.

Storage/Disposal • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
 Avoid release to the environment.
 Store locked up.

Other hazards

OSHA HCS 2012

- This product is extremely toxic to aquatic organisms, including fish and invertebrates. This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Section 3 - Composition/Information on Ingredients

Substances

- Material does not meet the criteria of a substance according to United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Mixtures

Composition		
Chemical Name	Identifiers	%
Permethrin	CAS:52645-53-1	31%
Piperonyl butoxide	CAS:51-03-6	66%
Other ingredients	NDA	Balance

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or doctor if you feel unwell.

Skin

- IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If irritation or rash occurs, get medical advice/attention.

Eye

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

- IF SWALLOWED: Call a poison control center or doctor for treatment advice.

Most important symptoms and effects, both acute and delayed

- Causes damage to organs - nervous system. Harmful if inhaled. Harmful if swallowed. May cause an allergic skin reaction in individuals with a sensitivity to piperonyl butoxide. Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

- Treat symptomatically and supportively.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media

- SMALL FIRES: Dry chemical, CO2, water spray or regular foam.

Unsuitable Extinguishing Media

- Avoid heavy hose streams.

Firefighting Procedures

- Do not use direct stream of water. A direct stream of water may spread fire. Do not allow fire fighting water to escape into waterways or sewers.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards

- None known.

Hazardous Combustion Products

- Decomposes upon heating to produce toxic vapors/gases which may include hydrogen chloride, carbon oxides and nitrogen oxides.

Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA).

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Avoid breathing fumes. Wear appropriate personal protective equipment, avoid direct contact. Keep all sources of ignition away.

Emergency Procedures

- Stop leak if you can do it without risk. Avoid release into the environment. Avoid

unnecessary personnel and equipment traffic in the spill area. Do not allow runoff into water, storm drains or drainage ditches. Wear appropriate personal protective equipment (PPE).

Environmental precautions

- Avoid run off to waterways and sewers.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Cover liquid spill with sand, earth or other non-combustible absorbent material. Wear appropriate personal protective equipment, avoid direct contact. Prevent entry into waterways, sewers, basements or confined areas.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Handle and open container with care. Avoid release to the environment. Do not breathe (dust, vapor or spray mist) Use only in well ventilated areas. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Wear appropriate personal protective equipment, avoid direct contact.

Conditions for safe storage, including any incompatibilities

Storage

- Keep out of reach of children. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Keep from freezing. Store away from oxidizers strong acids and strong bases. Do not use or store near heat or open flame.

Incompatible Materials or Ignition Sources

- Strong acids, strong bases, and oxidizing agents.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure controls

Engineering Measures/Controls

- Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

Personal Protective Equipment

Pictograms



Respiratory

- In case of insufficient ventilation, wear suitable NIOSH approved respiratory protection.

Eye/Face

- Wear chemical splash safety goggles.

Skin/Body

- If prolonged exposure is anticipated, it is recommended for handlers to wear appropriate clothing to prevent skin contact.

Environmental Exposure Controls

- Avoid release to the environment.

Other Information

- See product label for specific use PPE instructions.

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Clear, pale amber liquid.
Color	Pale amber.	Odor	Slight solvent and licorice.
General Properties			
Boiling Point	No data available	Melting Point/Freezing Point	No data available
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	1.08 - 1.09 g/cc (9.01 - 9.10 lb/gal)	Water Solubility	Insoluble
Viscosity	No data available		
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available		
Flammability			
Flash Point	260°F (127°C)	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

- Non-reactive under normal handling and storage conditions.

Chemical stability

- Stable

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Avoid storage with or near toxic substances. Direct sunlight. Excessive heat >110°F.

Incompatible materials

- Heat, strong acids, strong bases and oxidizing agents.

Hazardous decomposition products

- Decomposes upon heating to produce toxic vapors/gases which may include oxides of carbon and nitrogen, hydrogen chloride.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Permethrin (31%)	52645-53-1	Acute Toxicity: Ingestion/Oral-Rat LD50 • 500 mg/kg; Inhalation-Rat LC50 • 2.65 mg/L 4 Hour(s); Skin-Rabbit LD50 • >2000 mg/kg; Irritation: Eye-Rabbit • Mild irritation; Skin-Rabbit • Essentially non-irritating
Piperonyl butoxide (66%)	51-03-6	Acute Toxicity: Ingestion/Oral-Rat • 4300 mg/kg; Inhalation-Rat • >5 mg/L 4 Hour(s); Skin-Rat LD50 • >2000 mg/kg; Irritation: Eye-Rabbit • Essentially non-irritating; Skin-Rabbit • Essentially non-irritating

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Acute Toxicity - Dermal - Classification criteria not met; Acute Toxicity - Inhalation 4; Acute Toxicity - Oral 4
Skin corrosion/Irritation	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	OSHA HCS 2012 • Classification criteria not met
Skin sensitization	OSHA HCS 2012 • Skin Sensitizer 1
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met
STOT-SE	OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 1
STOT-RE	OSHA HCS 2012 • Classification criteria not met

Route(s) of entry/exposure • Inhalation, skin, eye, and ingestion.

Potential Health Effects

Inhalation

Acute (Immediate)

- Harmful if inhaled. Permethrin affects nervous system. Symptoms of overexposure to permethrin include diarrhea, salivation, tremors, convulsions, hyperactivity and hypersensitivity.

Chronic (Delayed)

- No data available

Skin

Acute (Immediate)

- May cause an allergic reaction in individuals with a sensitivity to piperonyl butoxide. Contact with permethrin may cause reversible skin sensations (paresthesia) which may include numbing, burning or tingling.

Chronic (Delayed)

- No data available

Eye

Acute (Immediate)

- Under normal conditions of use, no health effects are expected.

Chronic (Delayed)

- No data available

Ingestion

Acute (Immediate)

- Harmful if ingested. Permethrin affects nervous system. Symptoms of overexposure to permethrin include diarrhea, salivation, tremors, convulsions, hyperactivity and hypersensitivity.

Chronic (Delayed)

- No data available

Mutagenic Effects

- Permethrin was not mutagenic in a battery of in vitro and in vivo tests. Piperonyl butoxide was not mutagenic in a battery of tests.

Carcinogenic Effects

- Permethrin is not classified as carcinogen by NTP, IARC and OSHA. Piperonyl butoxide is not classified as carcinogen by NTP, IARC and OSHA.

Reproductive Effects

- Permethrin does not cause developmental or reproductive effects. Piperonyl butoxide did not produce any birth defects or adverse effects on reproductive parameters in tests with rats and rabbits.

Section 12 - Ecological Information

Toxicity

Components		
Permethrin (31%)	52645-53-1	Aquatic Toxicity-Fish: 96 Hour(s) LC50 <i>Blue gill</i> 0.00079 mg/L [Acute] 96 Hour(s) LC50 <i>Atlantic silverside</i> 0.0022 mg/L [Acute] NOEC <i>Fathead minnow</i> 0.0003 mg/L [Chronic] NOEC <i>Sheepshead minnow</i> 0.00083 mg/L [Chronic] Aquatic Toxicity-Crustacea: NOEC <i>Daphnia magna</i> 0.000039 mg/L [Chronic] NOEC <i>Mysid shrimp</i> 0.000011 mg/L [Chronic] LC50 <i>Hexagenia bilineata</i> 0.0001 mg/L [Acute] 96 Hour(s) LC50 <i>Mysid shrimp</i> 0.000019 mg/L [Acute]
Piperonyl butoxide (66%)	51-03-6	Aquatic Toxicity-Fish: LC50 <i>Rainbow Trout</i> 1.9 mg/L [Acute] LC50 <i>Sheepshead minnow</i> 3.94 mg/L [Acute] NOEC <i>Fathead minnow</i> 0.04 mg/L [Chronic] Aquatic Toxicity-Crustacea: LC50 <i>Gammarus fasciatus (amphipod)</i> 0.51 mg/L [Acute] LC50 <i>Mysid shrimp</i> 0.49 mg/L [Acute] NOEC <i>Daphnia magna</i> 0.03 mg/L [Chronic]

Persistence and degradability

- Permethrin has a moderate rate of degradation in soil and half-life is related to soil type, microbial population, concentration in the soil and the aerobic condition of the soil.

Bioaccumulative potential

- Permethrin has a Log Pow of 6.1, but because of the ease with which biological systems degrade the molecule, the potential for bioconcentration and accumulation in the environment is low (BCF = 500). Permethrin: Bioconcentration factor (BCF) 300; Does not bioaccumulate.

Mobility in Soil

- Permethrin has a high affinity for organic matter ($K_{oc} = 86,000$), there is little potential for movement in soil or entry into groundwater. Permethrin: Immobile in soil.

Other adverse effects**Potential Environmental Effects**

- This pesticide is extremely toxic to aquatic organisms including fish and invertebrates. Care should be taken to avoid contamination of the aquatic environment. This product is highly toxic to bees.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. Do not allow entry into storm drains, drainage ditches, gutters or surface waters.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. See product label for disposal instructions.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	UN3082	Bulk packaging only: Environmentally hazardous substance, liquid, n.o.s (Permethrin and Piperonyl butoxide)	9	III	Marine Pollutant
IMO/IMDG	UN3082	Packaging 5 L or greater: Environmentally hazardous substance, liquid, n.o.s (Permethrin and Piperonyl butoxide)	9	III	Marine Pollutant
IATA/ICAO	UN3082	Packaging 5 L or greater: Environmentally hazardous substance, liquid, n.o.s (Permethrin and Piperonyl butoxide)	9	III	Acute Aquatic Toxicity

Special precautions for user • None specified.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • No data available

Other information

IMO/IMDG • No data available

IATA/ICAO • No data available

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • SARA Title III Section 313, Acute

FIFRA – Pesticide Labeling

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION

Hazard Statements • KEEP OUT OF REACH OF CHILDREN

Precautionary Statements •

Hazards to Humans and Domestic Animals

Harmful if swallowed. Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Prolonged or repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or the toilet. Remove contaminated clothing and wash before reuse.

First Aid •

If swallowed• Call a poison control center or doctor immediately• Do not induce vomiting unless told to by a poison control center or doctor• Do not give any liquid to the person• Do not give anything by mouth to an unconscious person• If on skin or clothing• 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• If in eyes• 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• If inhaled• Move person to fresh air• If person is not breathing call 911 or an ambulance then give artificial respiration preferably by mouth to mouth if possible• Call a poison control center or doctor for treatment advice.

Environmental Hazards •

This product is extremely toxic to aquatic organisms including fish and invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and other aquatic organisms. Before making the first application of the 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. 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 water when disposing of equipment washwaters. This pesticide 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 treatment area.

Physical or Chemical Hazards • Do not use or store near heat or open flame.

Inventory		
Component	CAS	TSCA
Permethrin	52645-53-1	No
Piperonyl butoxide	51-03-6	Yes

United States

Environment

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Permethrin	52645-53-1	1.0 % de minimis concentration
• Piperonyl butoxide	51-03-6	1.0 % de minimis concentration

Section 16 - Other Information

Revision Date

• 07/March/2016

Last Revision Date

- 07/March/2016

Preparation Date

- 07/March/2016

Disclaimer/Statement of Liability

- The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.



Altosid[®] BRIQUETS



A SUSTAINED RELEASE MOSQUITO GROWTH REGULATOR TO PREVENT ADULT MOSQUITO EMERGENCE (INCLUDING THOSE WHICH MAY TRANSMIT WEST NILE VIRUS)

SPECIMEN LABEL

ACTIVE INGREDIENT:

(S)-Methoprene (Dry Weight Basis)
(CAS #65733-16-6) 8.62%

OTHER INGREDIENTS: 91.38%
Total 100.00%

This product contains water, therefore the weight of the briquet and percent by weight of active ingredient will vary with hydration. The Ingredient Statement is expressed on a dry weight basis.

EPA Reg. No. 2724-375 EPA Est. No. 2724-TX-1

KEEP OUT OF REACH OF CHILDREN
CAUTION

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS **CAUTION**

Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

FIRST AID

Call a poison control center or doctor for treatment advice.

- | | |
|-------------------|--|
| If in eyes | <ul style="list-style-type: none">• 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. |
|-------------------|--|

FIRST AID (CONTINUED)

- | | |
|-------------------------------|--|
| If on skin or clothing | <ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes. |
|-------------------------------|--|

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-248-7763 for emergency medical treatment information.

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of unused product.

DIRECTIONS FOR USE

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

Note to User: Do not remove **ALTOSID[®] Briquets** from container except for immediate use.

Because of the unique mode of action of **ALTOSID[®] Briquets**, users must be familiar with special techniques for accurate evaluation of treatments. See Application Rates and Intervals section of this label or consult local Mosquito Abatement Agency. Effective use of **ALTOSID[®] Briquets** in sites subjected to periodic heavy flow of water requires careful attention to briquet placement and to the possible need for retreatment. Use of the product in storm drains, waste treatment and settling ponds, and similar systems should therefore be limited to experienced pesticide applicators, such as personnel of Mosquito Abatement Districts and Public Health Agencies.

Introduction: The **ALTOSID[®] Briquet** is a formulation designed to release effective levels of **ALTOSID[®]** Insect Growth Regulator up to 30 days under typical environmental conditions. Release of **ALTOSID[®]** Insect Growth Regulator is effected by dissolution of the **ALTOSID[®] Briquet**. If briquets become covered by obstructions such as debris, vegetation, and loose

sediment as a result of high rainfall or flow, normal dispersion of the active ingredient can be inhibited. Water flow may increase the dissolution of the briquet thus reducing the residual life of the briquet. Inspect areas of water flow to determine appropriate retreatment intervals. To assure positive results, place **ALTOSID® Briquets** where they will not be swept away by flushing action. **ALTOSID® Briquets** prevent the emergence of adult mosquitoes including *Anopheles*, *Culex*, *Culiseta*, *Coquilleltidia*, and *Mansonia* spp., as well as those of the floodwater mosquito complex (*Aedes*, *Ochlerotatus*, and *Psorophora* spp.) from treated water. Treated larvae continue to develop normally to the pupal stage where they die.

APPLICATION TIMING

Apply **ALTOSID® Briquets** at the beginning of the mosquito season. **ALTOSID® Briquets** provide up to 30 days residual control. Continue treatment through the last brood of the season. Apply at any stage of larval development. **ALTOSID® Briquets** may be applied as a pre-flood treatment prior to wetting events. **ALTOSID® Briquets** will be unaffected in dry down situations and will begin working again during subsequent wetting events until the briquet is exhausted.

NOTE: This insect growth regulator has no effect on mosquitoes which have reached the pupal or adult stage prior to treatment.

APPLICATION SITES

ALTOSID® Briquets are designed to control mosquitoes in small bodies of water. Examples of application sites are: storm drains, catch basins, roadside ditches, fish ponds, ornamental ponds and fountains, other artificial water-holding containers, animal watering troughs, cesspools and septic tanks, waste treatment and settling ponds, flooded crypts, transformer vaults, abandoned swimming pools, tires, construction and other manmade depressions, cattail marshes, water-hyacinth beds, vegetation-choked phosphate pits, pastures, meadows, rice fields, freshwater swamps and marshes, salt and tidal marshes, treeholes, woodland pools, floodplains, and dredging spoil sites. For application sites connected by a water system, i.e., storm drains or catch basins, treat all of the water holding sites in the system to maximize the efficiency of the treatment program.

APPLICATION RATES AND INTERVALS

For mosquito control in non-(or low-) flow, shallow depressions (up to two ft in depth), treat on the basis of surface area placing one **ALTOSID® Briquet** per 100 sq ft. For applications in storm water drainage areas, sewers, and catch basins: Place one **ALTOSID® Briquet** into each catch basin. Follow the chart below to determine the number of **ALTOSID® Briquets** to use in large catch basins. Place one **ALTOSID® Briquet** per 100 sq ft of surface area up to two feet deep for storm water drainage areas. Use one additional **ALTOSID® Briquet** per two feet of water depth in areas deeper than two feet.

ALTOSID® BRIQUET APPLICATION CHART

Number of Briquets	Catch Basin Size	Water Depth (Feet)
1	0–1,500	0–2
2	1,500–3,000	2–4
3	3,000–4,500	4–6
4	4,500–6,000	6–8

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. **Storage:** Store in cool, dry place. **Pesticide Disposal:** Wastes resulting from use of this product may be disposed of on site or at an approved waste disposal facility. **Container Disposal:** Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling, if available, or dispose of empty bag and box in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

To the fullest extent permitted by law, Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Always read the label before using this product.

For more information call **1-800-248-7763**.

www.altosid.com

Wellmark International
1501 East Woodfield Road 200W
Schaumburg, Illinois 60173



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March, 2010
Schaumburg, IL



Zoecon Altosid Briquets

Safety Data Sheet

Date of issue: 11/01/2003

Revision date: 04/14/2020

Supersedes: 07/23/2015

Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : Zoecon Altosid Briquets
Synonyms : EPA Reg. No.: 2724-375, 37060F, 37090C, ProLink Briquets

1.2. Recommended use and restrictions on use

Recommended use : Insect growth regulator.
Restrictions on use : Avoid contact with eyes and clothing. Do not use or store near heat or open flame. Keep out of reach of children.

1.3. Supplier

Wellmark International
1501 E. Woodfield Road, Suite 200W
Schaumburg, IL 60173 - United States
www.centralmosquitocontrol.com

1.4. Emergency telephone number

Emergency number : 1-888-914-2082
1-800-424-9300 - CHEMTREC
1-703-527-3887 - CHEMTREC - Outside North America - Collect Calls Accepted

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation Category 2B	Causes eye irritation
Carcinogenicity Category 1A	May cause cancer
Combustible Dust	May form combustible dust concentrations in air

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



GHS08

Signal word (GHS US)	: Danger
Hazard statements (GHS US)	: May form combustible dust concentrations in air Causes eye irritation May cause cancer
Precautionary statements (GHS US)	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash hands, forearms and face thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. Store locked up. Dispose of contents/container to in accordance with local/regional/national/international regulations.
Supplemental information	: Exposure to silica dust from the finished product is not expected to occur due to the manner in which the constituents are bound. Finished product is not considered carcinogenic.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

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2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
(s)-Methoprene Technical	(CAS-No.) 65733-16-6	8.62
Silica, crystalline - quartz	(CAS-No.) 14808-60-7	< 0.73
Plaster of paris	(CAS-No.) 26499-65-0	71.84
Activated Carbon	(CAS-No.) 7440-44-0	17.53
Non-hazardous and/or does not meet criteria for classification	(CAS-No.) N/A	Balance

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice and attention.
- First-aid measures after ingestion : IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting unless directed to do so by medical personnel.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after eye contact : Causes mild eye irritation.
- Chronic symptoms : May cause cancer.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Carbon dioxide. Water spray. Dry chemical. Foam.
- Unsuitable extinguishing media : Avoid heavy hose streams.

5.2. Specific hazards arising from the chemical

- Explosion hazard : Dust cloud can be ignited by a spark. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- Reactivity : This material is friable and can create small dust particles during any handling, processing, and transfer operations. This material can form explosive dust/air suspensions that are ignitable under some conditions.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Combustible dust - use low-pressure medium fog streams to avoid dust clouds. Ventilate closed spaces before entering. Eliminate ignition sources.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel. Contain spill and monitor for excessive dust accumulation. Turn off electric power to area. No flames, no sparks. Eliminate all sources of ignition. Wear appropriate personal protective equipment, avoid direct contact.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: Exposure controls/personal protection.

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- Emergency procedures : Contain spill and monitor for excessive dust accumulation. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Ventilate closed spaces before entering. Turn off electric power to area. As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Evacuate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Sweep or scoop spills, dispose of any unusable material in approved landfill. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Non-sparking tools should be used. Use appropriate PPE.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Avoid dust formation. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Take all necessary technical measures to avoid or minimize the release of the product on the workplace.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Store locked up.
- Incompatible materials : Heat, sparks, open flame. Strong oxidizers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Silica, crystalline - quartz (14808-60-7)		
ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ (respirable particulate matter)
OSHA	OSHA PEL (TWA) (mg/m ³)	50 µg/m ³
IDLH	US IDLH (mg/m ³)	50 mg/m ³ (respirable dust)
NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ (respirable dust)
Plaster of paris (26499-65-0)		
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Activated Carbon (7440-44-0)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ Inhalable; 3 mg/m ³ Respirable
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ Total dust; 5 mg/m ³ Repirable

8.2. Appropriate engineering controls

- Appropriate engineering controls : Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values. It is recommended that dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

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Safety glasses

Skin and body protection:

If prolonged exposure is anticipated, it is recommended for handlers to wear appropriate clothing to prevent skin contact.

Respiratory protection:

In case of insufficient ventilation, use NIOSH approved respiratory protection.



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Gray to black solid
Color	: Gray to black
Odor	: Slight hydrocarbon
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non-flammable
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: Not applicable
Bulk density	: 1.04 g/cc (64.9 lb/ft3)
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: Combustible Dust
Oxidizing properties	: Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is friable and can create small dust particles during any handling, processing, and transfer operations. This material can form explosive dust/air suspensions that are ignitable under some conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur. May form combustible dust concentrations in the air.

10.4. Conditions to avoid

Avoid dust formation. Heat. No flames, no sparks. Eliminate all sources of ignition.

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10.5. Incompatible materials

Heat, sparks, open flame. Strong oxidizing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Zoecon Altosid Briquets	
LD50 oral	> 5100 mg/kg
LD50 dermal rabbit	> 2100 mg/kg

Silica, crystalline - quartz (14808-60-7)	
Listed on IARC (International Agency for Research on Cancer), Listed as carcinogen on NTP (National Toxicology Program)	
IARC group	1 - Carcinogenic to humans
National Toxicity Program (NTP) Status	Known Human Carcinogens
In OSHA Hazard Communication Carcinogen list?	Yes

GHS-US Properties	Classification
Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified
Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Causes eye irritation.
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	May cause cancer.
Reproductive toxicity	Not classified
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified
Aspiration hazard	Not classified

Potential health effects

Inhalation

- Acute : Exposure to dust may cause respiratory irritation. Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss.
- Chronic : Repeated and prolonged exposure to crystalline silica containing materials may cause irritation and/or lung damage silicosis, fibrosis, inflammation, cancer.

Skin

- Acute : Exposure to dust may cause mechanical irritation.

Eye

- Acute : Causes mild eye irritation.

Ingestion

- Acute : Under normal conditions of use, no health effects are expected.

Mutagenicity

- : (s)-Methoprene has been tested and found negative for mutagenicity potential.

Carcinogenicity

- : (s)-Methoprene is not classified as a carcinogen by NTP, IARC or OSHA. Crystalline silica (quartz) inhaled from occupational sources is classified as carcinogenic to humans. Exposure to respirable crystalline silica dust from the finished product is not expected to occur due to the manner in which the constituents are bound, thus the finished product is not considered carcinogenic under conditions of normal use.

Reproductive Effects

- : (s)-Methoprene is not a reproductive toxin and does not cause birth defects.

SECTION 12: Ecological information

12.1. Toxicity

(s)-Methoprene Technical (65733-16-6)	
LC50 Acute fish 1	0.76 mg/l (Exposure time: 96h - Rainbow trout)

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(s)-Methoprene Technical (65733-16-6)

LC50 Acute fish 2	> 0.37 mg/l (Exposure time: 96h - Blue gill)
LC50 Acute crustacea 1	0.11 mg/l (Exposure time: 96h - Mysid shrimp)
LC50 Acute crustacea 2	0.36 mg/l (Exposure time: 48h - Daphnia magna)
NOEC Chronic fish 1	0.048 mg/l (Fathead minnow)
NOEC Chronic crustacea 1	0.014 mg/l (Mysid shrimp)

12.2. Persistence and degradability

(s)-Methoprene Technical (65733-16-6)

Persistence and degradability	(s)-Methoprene degrades rapidly in sunlight, both in water and on inert surfaces. The pesticide also is metabolized rapidly in soil and does not leach. Thus, it should not persist in soil or contaminate ground water.
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12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

(s)-Methoprene Technical (65733-16-6)

Mobility in soil	Rapidly metabolized in soil under both aerobic and anaerobic conditions (half-life 10-14 days).
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12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

SECTION 14: Transport information

	UN number	Proper Shipping Name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	Not regulated	Not regulated	Not regulated	Not regulated	Not applicable
IMDG	Not regulated	Not regulated	Not regulated	Not regulated	Not applicable
IATA	Not regulated	Not regulated	Not regulated	Not regulated	Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Silica, crystalline - quartz (14808-60-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Activated Carbon (7440-44-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

FIFRA Labelling

EPA Registration Number	2724-375
This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.	
FIFRA Signal word	Caution
FIFRA Precautionary Statement	KEEP OUT OF REACH OF CHILDREN.
FIFRA Hazards to Humans and Domestic Animals	Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin and clothing. Wash thoroughly with soap and water after handling.

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FIFRA First Aid	If in eyes: 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. If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes.
FIFRA Environmental Hazards	Do not contaminate water when disposing of unused product.

15.2. US State regulations

No additional information available

SECTION 16: Other information

Date of issue	: 01 November 2003
Revision date	: 14 April 2020
Supersedes	: 23 July 2015

SDS US (GHS HazCom 2012) - CGP

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.



DUET®

Dual-Action Adulticide

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.

A Quick Knockdown, Oil Soluble Synergized Synthetic Pyrethroid for Effective Control of Adult Mosquitoes, Gnats, Biting and Non-Biting Midges, and Blackflies in Outdoor Residential and Recreational Areas.

ACTIVE INGREDIENTS:

Prallethrin: (RS)-2-methyl-4-oxo-3-(2-propenyl) cyclopent-2-enyl-(1RS)-cis, trans-chrysanthemate	1.00%
Sumithrin®: 3-Phenoxybenzyl-(1RS, 3RS, 1RS, 3SR)-2,2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate	5.00%
* Piperonyl Butoxide	5.00%
** OTHER INGREDIENTS	89.00%
	100.00%

Contains 0.0717 pounds of Prallethrin/Gallon, 0.359 pounds of Sumithrin®/Gallon and 0.359 pounds of Piperonyl Butoxide (PBO)/Gallon

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

**Contains petroleum distillate

KEEP OUT OF REACH OF CHILDREN

CAUTION

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

FIRST AID

IF SWALLOWED:

- Immediately call a poison control center or doctor.
- Do not induce vomiting unless told to do so by a poison control center or a doctor.
- Do not give any liquid to the person.
- Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Contains petroleum distillates - vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-740-8712.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE) Mixers, loaders, applicators, and other handlers must wear the following: long-sleeved shirt, long pants, shoes and socks. 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 material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

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. As soon as possible, wash thoroughly and change into clean clothing.

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 applications is limited to the use of the Global Positioning System (GPS) or mechanical flaggers.

ENVIRONMENTAL HAZARDS

This pesticide is highly 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. 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. 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.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not

apply to or allow drift onto blooming crops or weeds when bees are foraging in the treatment 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 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.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

USE RESTRICTIONS

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.

IN CALIFORNIA: This product is to be applied by County Health Department, State Department of Health Services, Mosquito and Vector Control or Mosquito Abatement District personnel only.

IN FLORIDA: Aerial applications of this product require trained personnel to perform industry accepted assays to monitor resistance formation in targeted mosquitoes.

Do not treat a site with more than 0.0036 lb. of each a.i., Sumithrin and piperonyl butoxide and 0.00072 lbs. prallethrin per acre in a single application or in any 24-hour period. Do not apply more than 0.0108 lb. each of Sumithrin and piperonyl butoxide and 0.0022 lb. prallethrin to the same treatment area in a 7 day period. Do not apply more than 0.0216 lb. each of Sumithrin and piperonyl butoxide and 0.0043 lb. prallethrin to the same treatment area in 1 month. Do not exceed 0.1 lb. of Sumithrin or piperonyl butoxide or 0.02 lb. prallethrin per acre in any site in one year. More frequent applications 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.

NOTE: When rotating products with other insecticides containing piperonyl butoxide, do not exceed 2 lbs. PBO per acre per year.

Not for use in outdoor residential misting systems. Not for use in metered release systems.

DUET cannot be diluted in water. Dilute this product with light mineral oil if dilution is preferred.

USE INFORMATION

DUET is approved for application as a thermal aerosol and as an Ultra Low Volume (ULV) nonthermal aerosol (cold fog) in mosquito adulticiding programs involving outdoor residential, urban, industrial, and recreational areas where adult mosquitoes are present in annoying numbers, and in vegetation surrounding parks, woodlands, swamps, marshes, overgrown areas and golf courses.

DUET may be applied over crops or to areas favoring drift over crops, including row, tree, fruit, citrus, pasture and other areas where agricultural enterprises take place.

SPRAY DROPLET SIZE DETERMINATION

Ground-based, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter (VMD) is less than 30 microns (Dv 0.5 < 30 um) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50 um). 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.

Aerial Equipment, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns (Dv 0.5 < 60 um) and that 90% of the spray is contained in droplets smaller than 115 microns (Dv 0.9 < 115 um). The effects of flight speed and, for non-rotary atomizers, 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.

GROUND ULV APPLICATION

To control Mosquitoes and other listed insects, apply DUET at a flow rate of 2.6 to 7.8 fluid ounces per minute at an average vehicle speed of 10 mph using a swath width of 300 feet for acreage calculations (see chart below). For best results, apply when mosquitoes are most active and meteorological conditions are conducive to keeping the spray cloud close to the ground. Certain mosquito species such as *Aedes aegypti* and *Aedes albopictus*, are most active during the day. Application in calm air conditions is to be avoided. Apply only when ground wind speed is greater than or equal to 1 mph. All types of applications should be conducted at temperatures above 50 °F. Under normal residential conditions a flow rate of 4.8 fluid ounces per minute at an average vehicle speed of 10 mph is recommended. If a different vehicle speed is used, adjust rate accordingly. These rates are equivalent to 0.00024 to 0.00072 pounds of Prallethrin and 0.0012 to 0.0036 pounds of Sumithrin® and Piperonyl Butoxide per acre. Vary flow rate according to vegetation density and mosquito population. Use higher flow rate

in heavy vegetation or when populations are high. DUET may also be diluted with a suitable solvent such as mineral oil and applied by GROUND ULV equipment so long as 1.28 fluid ounces per acre of DUET is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of DUET. Use the following tables to calculate application rates:

Pounds a.i./Acre			DUET Fl.oz./Acre	Flow Rates in fluid oz./minute at truck speeds of:			
Prallethrin	Sumithrin®	PBO		5 MPH	10 MPH	15 MPH	20 MPH
0.00072	0.0036	0.0036	1.28	3.9	7.8	11.7	15.6
0.00044	0.0022	0.0022	0.79	2.4	4.8	7.1	9.5
0.00036	0.0018	0.0018	0.64	1.9	3.9	5.8	7.8
0.00024	0.0012	0.0012	0.43	1.3	2.6	3.9	5.2

DUET may be applied through truck mounted thermal fogging equipment. Do not exceed the maximum rates listed above. May be applied at speeds of 5 to 20 mph. To reduce oil requirement and sludge buildup in equipment, use a 60-100-second viscosity mineral "fog" oil or other fuel-type oil. Use a clean, well-maintained and properly calibrated fogger. Do not wet foliage since oil base formulations may be phytotoxic.

Urban ULV Mosquito Control: DUET may be applied for control of resting or flying adult mosquitoes in urban and industrial areas such as utility tunnels, pipe chases, underground basements, underground passages, parking decks, open parking garages, abandoned warehouses, crawl spaces, uninhabited buildings, rail yards, waste yards, junkyards, tire dumps, and other areas where adult mosquitoes may be found. Apply using mechanical-foggers, or truck-mounted ULV equipment, or other spray equipment suitable for this application. Apply at rates up to but not exceeding 0.0036 lb of each a.i., Sumithrin and piperonyl butoxide and 0.00072 lbs. prallethrin per acre in a single application or in any 24-hour period.

AERIAL APPLICATION

DUET may be applied at rates of 0.43 to 1.28 fluid ounces of DUET per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. Appropriate spray systems include rotary atomizers, flat fan, high pressure, and high pressure impaction nozzles characterized and oriented to achieve the droplet characteristics specified in this label. DUET may also be diluted with a suitable solvent such as mineral oil and applied by aerial ULV equipment so long as 1.28 fluid ounces per acre of DUET is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of DUET. Do not apply by fixed wing aircraft at a height less than 100 feet above the ground or canopy, or by helicopter at a height less than 75 feet above the ground or canopy unless specifically approved by the state or tribe based on public health needs. When making aerial application at an altitude of less than 100 feet, apply only when wind speed at altitude is greater than or equal to 5 mph. When making application at an altitude of 100 feet or greater, apply only when wind speed at altitude is greater than or equal to 3 mph.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a cool, dry place. Keep container closed.

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:

[For 2.5-gallon Jugs]: 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 1/4 full with mineral oil and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse 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 if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

[For refillable drums & totes]: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

FOR MORE INFORMATION CALL 1-800-323-5727

NOTICE: To the extent provided by law, Seller makes no warranty, expressed or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use and/or handling of this material when use and/or handling is contrary to label instructions.

Sumithrin® - Registered Trademark of Sumitomo Chemical Company, Ltd.

Duet® - Registered Trademark of Clarke Mosquito Control Products, Inc.

MANUFACTURED FOR:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 N. GARDEN AVENUE
ROSELLE, ILLINOIS 60172

DILUTION CALCULATIONS

For a 4% Sumithrin product, dilute 1 gallon DUET with 0.25 gallon oil. Finished spray contains 0.29 lbs Sumithrin & PBO and 0.06 pounds Prallethrin per gallon.

Dosage Description	Pounds a.i./Acre			Fluid oz. Finished spray/Acre	Flow Rates in fluid oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	1.61	4.9	9.7	14.6	19.5
Recommended	0.00044	0.0022	0.0022	0.98	3.0	5.9	8.9	11.9
Light Population	0.00036	0.0018	0.0018	0.80	2.4	4.9	7.3	9.7
	0.00024	0.0012	0.0012	0.54	1.6	3.2	4.9	6.5

For a 2.5% Sumithrin product, dilute 1 gallon DUET with 1 gallon oil. Finished spray contains 0.179 lbs Sumithrin & PBO and 0.036 pounds Prallethrin per gallon.

Dosage Description	Pounds a.i./Acre			Fluid oz. Finished spray/Acre	Flow Rates in fluid oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	2.57	7.8	15.6	23.4	31.1
Recommended	0.00044	0.0022	0.0022	1.57	4.8	9.5	14.3	19.0
Light Population	0.00036	0.0018	0.0018	1.28	3.9	7.8	11.7	15.6
	0.00024	0.0012	0.0012	0.86	2.6	5.2	7.8	10.4

For a 2% Sumithrin product, dilute 1 gallon DUET with 1.5 gallons oil. Finished spray contains 0.143 lbs Sumithrin & PBO and 0.029 pounds Prallethrin per gallon.

Dosage Description	Pounds a.i./Acre			Fluid oz. Finished spray/Acre	Flow Rates in fluid oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	3.21	9.7	19.5	29.2	38.9
Recommended	0.00044	0.0022	0.0022	1.96	5.9	11.9	17.8	23.8
Light Population	0.00036	0.0018	0.0018	1.61	4.9	9.7	14.6	19.5
	0.00024	0.0012	0.0012	1.07	3.2	6.5	9.7	13.0

AVAILABLE PACKAGING: 2.5 GAL, 30 GAL, 55 GAL, 275 GAL TOTE

LOT NO.: Marked on Container Label

EPA REG. NO.: 1021-1795-8329

EPA EST. NO.: _____

AL0477



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SECTION 1. Identification of the Substance/Mixture and of the Company

Product Identifier

Formulation Identifier: DUET[®] Dual-Action Adulticide

EPA Registration Number: 1021-1795-8329

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant identified uses: An insecticide for mosquito and vector control

Uses advised against: See product label for use restrictions

Details of the Supplier

Clarke Mosquito Control Products, Inc.
675 Sidwell Court
St. Charles, IL 60174 U.S.A.
+1 (630) 894-2000
Email: Clarke@clarke.com

Emergency Telephone Number

24 Hour MEDICAL Emergency: SafetyCall@: (888) 740-8712 or (952) 852-9509

24 Hour TRANSPORTATION Emergency: CHEMTREC@: (800)-424-9300

International: (703) 527-3887

SECTION 2. Hazards identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture

Acute Toxicity (Inhalation): Category 4

Aspiration Toxicity: Category 1

Pictogram:



Signal Word: DANGER

Hazard Statements: Harmful if inhaled.

May be fatal if swallowed and enters airways.

Precautionary Statements:

PREVENTION: Avoid breathing mist/vapors/spray. Use only outdoors or in well-ventilated area.

RESPONSE: IF INHALED- Remove victim to fresh air and keep at rest in a position for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Immediately call a poison center/doctor. Do NOT induce vomiting.

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

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

Other Hazards Not Classifiable Under OSHA 2012 HCS - Not applicable



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Comments: This material is considered hazardous by the 2012 OSHA Hazard Communication Standard [29 CFR 1910.1200(a)(1)], and the GHS

SECTION 3. Composition/Information on Ingredients

Components

Substance Name	CAS No.	Concentration % w/w
ETOC [®] (Prallethrin)	23031-36-9	1.0
SUMITHRIN [®] (d-Phenothrin)	26002-80-2	5.0
Piperonyl Butoxide	51-03-6	5.0
Petroleum Distillates, hydrotreated light	64742-47-8	10-20 *
White Mineral Oil	8042-47-5	50-75 *

* The exact percentage (concentration) of composition has been withheld as trade secret.

Ingredients not identified are non-hazardous and/or are not required to be disclosed pursuant to 29 CFR 1910.1200 (2012), and are withheld as trade secret.

SECTION 4. First Aid Measures

Description of First Aid Measures

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

Skin Contact: 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.

Ingestion: If swallowed, IMMEDIATELY call a poison control center or doctor for treatment advice. DO NOT give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Never give anything by mouth to an unconscious person.

Inhalation: Remove affected person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Indication of Immediate Medical Attention and Special Treatment

Notes to Physician: Contains Pyrethroids and Petroleum Distillates – vomiting may pose an aspiration hazard. For skin effects, a highly efficient therapeutic agent for Pyrethrin/Pyrethroid exposure is topical application of Tocopherol Acetate (Vitamin E).

SECTION 5. Fire-Fighting Measures

Extinguishing Media

Suitable Extinguishing Media: Water Fog, Carbon Dioxide (CO₂), Dry Chemical, foam

Unsuitable Extinguishing Media: Do not use water jet.

Special Hazards Arising From the Substance or Mixture

Specific Hazards: No information available.

Explosion data:

Sensitivity to Mechanical Impact: None

Sensitivity to static discharge: Yes, use proper bonding and/or grounding procedures.

Special Protective Equipment and Precautions for Fire-Fighters

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

Special Procedures: Treat as oil fire. Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents



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appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Use appropriate protection (see section 8). Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required.

Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities.

Methods and Material for Containment and Cleaning Up

Methods for containment: Prevent further leakage of spillage if safe to do so. Move containers from spill area.

Small spill: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Large Spill: Prevent entry into sewers, water courses, basements or confined areas. Dam up and soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7. Handling and Storage

Precautions for Safe Handling

Protective measures: Wear a long-sleeved shirt, long pants, shoes and socks. Take prudent precautions to avoid contact with skin, eyes, and clothing. Mechanical ventilation should be used when handling this product in enclosed spaces. Do not contaminate water, food or feedstuffs, by storage, handling, or by disposal.

Hygiene Measures: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a cool, dry place. Keep container closed. Always store pesticides in the original container. Store away from food and pet food. Keep out of reach of children.

Electrostatic Accumulation Hazard: This product contains petroleum distillates for which there is potential for the accumulation of static electricity. Consideration should be given to bonding and grounding of equipment during loading, unloading, and transfer of this product.

SECTION 8. Exposure Controls / Personal Protection

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

Control Parameters

Component Name	CAS No.	List	Type	Value
ETOC [®] (Prallethrin)	23031-36-9	OSHA; ACGIH		None
SUMITHRIN [®] (d-Phenothrin)	026002-80	OSHA; ACGIH		None
Piperonyl Butoxide	51-03-6	OSHA; ACGIH		None
Petroleum Distillates	64742-47-8	OSHA & ACGIH	TLV/TWA (as oil-mist, if generated)	5 mg/m ³



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Mineral Oil	8042-47-5	OSHA & ACGIH	PEL / TLV, TWA (oil mist, mineral)	5 mg/m ³
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Exposure controls

Engineering Controls: Use with adequate ventilation. Local exhaust ventilation may be necessary for some operations..

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Safety Glasses, Goggles or Face Shield. Take prudent precautions to avoid contact with eyes.

Skin Protection: Wear a long-sleeved shirt and long pants, shoes and socks.

Hand Protection: It is good industrial hygiene practice to minimize skin contact. If required or preferred, use suitable protective chemical resistant gloves such as latex, nitrile, or neoprene.

Respiratory Protection: None required. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

SECTION 9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance:	Clear, yellow-colored liquid
Color:	1.0 on Gardner Scale
Odor:	Solvent odor
Odor Threshold:	No information available
pH:	Not applicable. Product is not miscible in water
Melting Point:	No information available
Freezing Point:	No information available
Initial Boiling Point:	No information available
Flash Point:	>93.3°C (>200°F) (Tag Closed Cup)
Evaporation Rate:	No information available
Flammability:	No information available
Explosion limits [U/L]:	No information available
Vapor Pressure:	No information available
Vapor Density (Air =1):	Heavier than air
Relative Density:	No information available
Specific Gravity (Water = 1)	0.860 @ 20°C (68°F)
Solubility:	Immiscible
Partition Coefficient:	No information available
Auto-Ignition Temperature:	No information available
Viscosity:	18 cPs @ 22.0°C (71.6°F) Brookfield
Decomposition Temperature:	No information available
Explosive Properties:	No information available
Oxidizing Properties:	No information available
VOC Content (%):	<1.000%

SECTION 10. Stability and Reactivity

Reactivity

No data available

Chemical Stability



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Stable under recommended normal storage conditions

Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions

Hazardous Polymerization: Hazardous polymerization does not occur

Conditions to avoid Extremes of temperature and direct sunlight

Incompatible materials Not compatible with strong acids and bases. Not compatible with oxidizing agents.

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

SECTION 11. Toxicological information

Information on Likely Routes of Exposure

Routes of entry: Oral, Dermal, Inhalation

May be fatal if swallowed and enters airways due to petroleum distillate. Vomiting may cause aspiration pneumonia.

Information on Toxicological Effects

Acute Toxicity / Effects

Assessment of acute toxicity: Slightly toxic after ingestion. Relatively non-toxic after short-term inhalation. Moderately toxic after short term skin contact. Some or all of the toxicity data reported is bridged from a substantially similar formula.

Oral, (Rat) LD₅₀ >5,000 mg/kg

Dermal, (Rabbit) LD₅₀ >2,000 mg/kg

Inhalation, Rat LC₅₀ >2.04 mg/l (4 hours)

Skin Corrosion/Irritation: Slight irritation at 72 hours. Irritation Index = 0.92

Serious Eye Damage/Irritation: Irritation clearing in 24 hours.

Skin Sensitization: Negative; Not considered to be a dermal sensitizer (Buehler).

Conditions aggravated by exposure: None known

Chronic Toxicity / Effects

Assessment of repeated dose toxicity: No significant signs or symptoms indicative of any adverse health effects are expected to occur.

Germ Cell Mutagenicity This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not carcinogenic. This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Marginally higher incidences of benign liver tumors in mice were observed following lifetime high dose exposures to PBO. The significance of these observations is undetermined and under review. The doses at which tumors were observed for PBO greatly exceeded potential exposure from labeled uses.

Reproductive Effects: This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% produce a fertility impairing effect. No indication of a developmental toxic / teratogenic effect.

STOT – Single exposure Not classified

STOT – Repeated exposure Not classified

SECTION 12. Ecological Information

Ecotoxicity:

Product specific data is not available. Data referenced is in relation to active ingredients, d-Phenothrin and PBO



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Toxicity to Fish:	d-Phenothrin 96-hr Acute LC ₅₀ 16.7 µg/L (rainbow trout), 15.8 µg/L (bluegill sunfish) PBO: 96-hour Acute LC ₅₀ 6/12 ppm (rainbow trout) Prallethrin LC ₅₀ 0.012 mg/L (rainbow trout)
Toxicity to Aquatic Invertebrates:	d-Phenothrin 48-hr LC ₅₀ 4.4 µg/L <i>Daphnia magna</i> d-Phenothrin 48-hr LC ₅₀ 0.025 µg/L <i>Mysidopsis bahia</i> PBO: 96-hr LC ₅₀ 0.49 ppm, <i>Americamysis bahia</i> Prallethrin 48-hr EC ₅₀ 0.0062 mg/L <i>Daphnia</i>
Toxicity to Plants:	No data available
<u>Persistence and Degradability</u>	
Product specific data not available. Data referenced is in relation to the active ingredients, d-Phenothrin and PBO	
Biodegradability:	Not readily biodegradable (by OECD criteria)
Bioconcentration Factor:	d-Phenothrin: 592 (edible), 4,000 (non-edible) PBO: 2, 175 Prallethrin: no data available
Log Kow:	d-Phenothrin: 6 PBO: 4.95 Prallethrin: 4.49
Depuration:	d-Phenothrin, PBO: 2-4 days
Mobility in Soil:	d-Phenothrin has low water solubility and binds tightly to soil. Based on these properties, d-phenothrin is relatively immobile in soil and its potential to contaminate groundwater is low. PBO is not very soluble in water and adheres moderately to soil with organic matter. Prallethrin is not very water soluble and adheres moderately with organic material. The hazard for prallethrin to move off the site of application with rain or irrigation is rated moderate.

SECTION 13. Disposal Considerations

Waste Treatment and Disposal methods

Pesticide wastes are regulated. Consult product label for chemical substance and container disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of Federal law. If these wastes cannot be disposed or 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: Rinse thoroughly in accordance with label instructions.

SECTION 14. Transport Information

DOT (US)

Proper Shipping Name: Agricultural Insecticide. N.O.I. Non-Hazardous

Primary Hazard Class/Division: Non-Hazardous

In Non-Bulk quantities (i.e., less than or equal to 119 Gallons / 450 Liters): This material is not regulated by the DOT as a hazardous material.

In Bulk Quantities (more than 119 Gallons / 450 Liters):

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

IMDG (Vessel)



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UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

ICAO/IATA (Air transport)

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

SECTION 15. Regulatory Information

FIFRA Information: This chemical is a pesticide product regulated 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 for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal word: CAUTION

KEEP OUT OF REACH OF CHILDREN

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS AND DOMESTIC ANIMALS: CAUTION. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE): Mixers, loaders, applicators, and other handlers must wear the following: long-sleeve shirt, long pants, shoes and socks. 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 material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

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. As soon as possible, wash thoroughly and change into clean clothing.

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 applications is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

FIRST AID

If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or a doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Note to physician: Contains petroleum distillates. Vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents call 1-888-740-8712.

Other Federal Regulations

SARA TITLE III CLASSIFICATION

Section 302: None

Section 311/312: Immediate (acute) health hazard

Section 313: This product contains the following chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CAS Number	Chemical Name	% by wt.
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26002-80-2
51-03-6

d-phenothrin
piperonyl butoxide

5.0
5.0

CERCLA RQ: None

U.S. California Proposition 65: Not listed

STATE RIGHT-TO-KNOW: National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16. Other Information

DISCLAIMER OF LIABILITY: The information in this SDS was obtained from sources we believe to be reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared as is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

NFPA Health Hazards 2
Flammability 1
Instability 0
Physical and Chemical Properties –

HMIS Health Hazards 1
Flammability 1
Physical Hazards 0
Personal Protection X

[™] DUET is a Trademark of Clarke Mosquito Control Products, Inc.
® Sumithrin is a Registered Trademark of Sumitomo Company Ltd.
® ETOC is a Registered Trademark of Sumitomo Company Ltd.

End of document



ULV Mosquito Master 412

A Quick Knockdown Combination to Control Adult Mosquito Populations in Outdoor Residential and Recreational Areas.

Active Ingredients	
Chlorpyrifos	
[0.0-diethyl 0-(3,5,6-trichloro 2-pyridyl) phosphorothioate	12.0%
*Permethrin	
(3-Phenoxyphenyl) methyl (±) cis, trans-3-(2,2-dichloroethenyl)-	
2,2-dimethyl-cyclopropanecarboxylate	4.0%
Other Ingredients	84.0%
	100.0%

* Cis/trans isomer ratio: min. 35% (+) cis and max. 65% (+) trans

Contains petroleum distillate

The product density is 7.62 pounds per gallon, which contains active ingredients chlorpyrifos and permethrin at 0.9 and 0.3 pounds per gallon, respectively.

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID

Have product container or label with you when calling a poison control center or doctor, or going for treatment. For Medical Emergencies, call the International Poison Control Center at 1-800-214-7753.

IF SWALLOWED: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: 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.

IF IN EYES: 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 the eye. Call a poison control center or doctor for treatment advice.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth. Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine. This product contains petroleum distillate. Vomiting may cause aspiration pneumonia.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Caution. Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing of mist. Do not contaminate food or feed products. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

Personal Protective Equipment (PPE): Mixers and loaders involved in ground application must wear coveralls over long-sleeved shirt and long pants, shoes plus socks, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, and a minimum of a NIOSH approved filtering face piece respirator with any R or P filter (TC-84A). You can also use other NIOSH approved particulate respirators that offer more protection such as a half face or full face respirator with any filter or a powered air purifying respirator with an HE filter. Applicators

involved in ground ULV application must use an enclosed cab as described in the Engineering Controls section of this label and must wear long-sleeved shirt and long pants, shoes plus socks, and chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils. Aerial applicators and pilots must use an enclosed cockpit and wear long-sleeved shirt, long pants, shoes, and socks.

Engineering Controls: Ground applicators must use an enclosed cab that has a nonporous barrier that totally surrounds the occupants and prevents contact with pesticides outside the cab. Applicators must be provided and have immediately available for use in an emergency when they must exit the cab in the treated area: coveralls, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, and a respirator of the type specified in the PPE section of this labeling. Take off any PPE that was worn in the treated area before reentering the cab and store all such PPE in a chemical-resistant container, such as a plastic bag, to prevent contamination of the inside of the cab.

Mixers and loaders involved in aerial application must use a closed system designed by the manufacturer to enclose the pesticide to prevent it from contacting handlers or other people and which is used and maintained in accordance with the manufacturer's written operating instructions. Mixers and loaders using a closed system must wear protective eyewear if the system operates under pressure, and must have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown coveralls, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, chemical-resistant footwear, chemical-resistant apron and a respirator of the type specified in the PPE section of this labeling.

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.

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 product 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. 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. 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 wash waters.

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 treatment 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 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.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

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.

Do not contaminate food or feed products. Do not allow spray treatment to drift onto cropland, poultry ranges or potable water supplies. Do not use on crops for food or forage. In treatment of corrals, feed lots, swine lots, and zoos, cover any exposed drinking water, drinking water fountains and animal feed before application.

Not for use in outdoor residential misting systems.

ULV MOSQUITO MASTER 412 is formulated for application as an ultra low volume (ULV) nonthermal aerosol (cold fog) to control adult mosquitoes in outdoor residential and recreational areas where these insects are a problem. For best results treat when mosquitoes are most active and weather conditions are conducive to keeping the spray cloud close to the ground. An inversion of air temperatures and a light breeze are preferable. Application in calm air conditions is to be avoided. Apply only when ground wind speed is greater than 1 mph. Air temperatures should be greater than 50 °F when conducting applications.

Do not treat a site with more than 0.01 lb. chlorpyrifos and 0.003 lb. permethrin per acre in a twenty-four hour period. Do not exceed 0.26 lb chlorpyrifos and 0.08 lb permethrin per acre per year. More frequent applications 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.

SPRAY DROPLET SIZE DETERMINATION

Ground-based Application: Spray equipment must be adjusted so that the volume median diameter (VMD) is between 8 and 30 microns ($8 \leq D_v 0.5 \leq 30 \mu m$) and that 90% of the spray is contained in droplets smaller than 50 microns ($D_v 0.9 < 50 \mu m$). 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.

Aerial Application made at less than or equal to 200 feet above ground elevation: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns ($D_v 0.5 < 60 \mu m$) and that 90% of the spray is contained in droplets smaller than 100 microns ($D_v 0.9 < 100 \mu m$). The effects of flight speed and, for nonrotary 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 ($D_v 0.5 < 70 \mu m$) and that 90% of the spray is contained in droplets smaller than 145 microns ($D_v 0.9 < 145 \mu m$). 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.

GROUND ULV APPLICATION

Apply ULV MOSQUITO MASTER 412 through standard ULV cold aerosol or non-thermal aerosol (Cold Fog) generators undiluted at a flow rate of 4.5 to 8.6 fluid ounces per minute at an average vehicle speed of 10 mph. This is equivalent to 0.005 to 0.01 pounds of chlorpyrifos and 0.0017 to 0.003 pounds of permethrin per acre. If a different vehicle speed is used, adjust rate accordingly. An accurate flow meter must be used to ensure the proper flow rate. Vary flow rate according to vegetation

density and mosquito population. Use higher flow rate in heavy vegetation or when populations are high.

Pounds/Acre (Chlorpyrifos/Permethrin)	Application Rate (Fl. Oz./Minute)			Fl. oz. per acre
	5 MPH	10 MPH	15 MPH	
0.01 / 0.003	4.3	8.6	12.9	1.42
0.005 / 0.0017	2.25	4.5	6.75	0.74

For proper application, mount the 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.

AERIAL APPLICATION

ULV MOSQUITO MASTER 412 may be applied undiluted at rates up to 1.42 fluid ounces ULV MOSQUITO MASTER 412 per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. Do not apply by fixed wing 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.

IN FLORIDA: Aerial applications of this product require trained personnel to perform industry accepted assays to monitor resistance formation in targeted mosquitoes.

STORAGE & DISPOSAL

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

Pesticide Storage: Store in a dry and cool place away from food and feed.

Pesticide Disposal: Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of according to applicable Federal, State or local guidelines.

Container Handling: 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. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

NOTICE: To the extent provided by law, seller makes no warranty, expressed or implied concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use and/or handling of this material when use and/or handling is contrary to label instructions.

FOR MORE INFORMATION CALL: 1-800-323-5727

**IN CASE OF MEDICAL EMERGENCY, CALL THE INTERNATIONAL
POISON CONTROL CENTER 1-800-214-7753**

IN CASE OF TRANSPORTATION EMERGENCY, CALL INFO-TRAC 1-800-553-5053

Manufactured For:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 N. GARDEN AVENUE
ROSELLE, ILLINOIS 60172 U.S.A.

EPA Reg. No.: 8329-36

EPA Est. No: _____

Net Contents: [] 30 GAL [] 55 GAL [] 275 GAL

Lot No.:

AL0522



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SECTION 1. Identification of the Substance/Mixture and of the Company

1.1 Product Identifier

Formulation Identifier: ULV MOSQUITOMASTER® 412

EPA Registration Number: 8329-36

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant identified uses: Insecticide for control of adult mosquitoes

Uses advised against: See product label for use restrictions

1.3 Details of the Supplier of the Safety Data Sheet

Clarke Mosquito Control Products, Inc.
675 Sidwell Court
St. Charles, IL 60174 U.S.A.
+1 (630) 894-2000
Email: Clarke@clarke.com

1.4 Emergency Telephone Number

Poison Control Center (medical emergency): 1-800-214-7753
INFOTRAC (Transportation/Spill Emergency): 1-800-535-5053

SECTION 2. Hazards identification

United States (US)
According to OSHA 29 CFR 1910.1200 HCS (2012)

2.1 Classification of the Substance or Mixture

Classification

Aspiration Hazard, Category 1
STOT, Repeated Exposure: Category 1

Carcinogenicity, Category 2
STOT, Single Exposure, Category 2

Acute Toxicity, Oral, Category 4
Flammable Liquid, Category 4

Hazard Statements

May be fatal if swallowed and enters airways
Causes damage to organs (brain, central nervous system, respiratory system, skin, and/or eyes) through prolonged or repeated exposure via ingestion, inhalation, eye contact, and/or skin contact.

Suspected of causing cancer
May cause damage to organs (brain, central nervous system, skin, and eyes via inhalation, ingestion, eye contact, and/or skin contact)

Harmful if swallowed
Combustible liquid

Pictograms:



Signal Word: Danger

Precautionary Statements:

PREVENTION: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Do not breathe spray.



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Wear protective gloves, protective clothing, eye protection, and face protection.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Keep away from flames and hot surfaces.-No smoking.

RESPONSE: If swallowed: Immediately call a poison control center or doctor. Do NOT induce vomiting. Rinse mouth.

If exposed or concerned: Call a poison control center or doctor, and get medical advice/attention if you feel unwell. Treatment – See first aid statements in Section 4. Treat according to symptoms (decontamination, vital functions).

In case of fire: Use foam, dry chemical or carbon dioxide (CO₂) to extinguish.

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

DISPOSAL: Dispose of contents and container in accordance with local/regional/national regulations.

2.2 Other Hazards Not Classifiable Under OSHA 2012 HCS

See product label for any additional hazards

SECTION 3. Composition/Information on Ingredients

3.1 Components

Substance Name	CAS No.	Concentration % w/w
Chlorpyrifos	2921-88-2	12.00
Permethrin	52645-53-1	4.00
Light Aromatic Solvent Naphtha	64742-95-6	5 – 7 *
1,2,4 Trimethylbenzene	95-63-6	< 1.74
Xylene	1330-20-7	< 0.17
White Mineral Oil	8042-47-5	< 77 *

* The exact percentage (concentration) of composition has been withheld as trade secret.

Ingredients not identified are non-hazardous and/or are not required to be disclosed pursuant to 29 CFR 1910.1200 (2012), and are withheld as trade secret.

SECTION 4. First Aid Measures

4.1 Description of First Aid Measures

Eye contact: Immediately flush eyes with water. Flush eyes with water for a minimum of 5 minutes, occasionally lifting and lowering upper lids. Get medical attention promptly. Remove contact lenses if worn.

Skin contact: Immediately flush skin with plenty of water. Remove clothing. Get medical attention immediately. Wash clothing separately and clean shoes before reuse.

Inhalation: Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention. To prevent aspiration, keep head below knees.

Ingestion: DO NOT induce vomiting. Do not give liquids. Obtain emergency medical attention.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed.

Chlorpyrifos is a cholinesterase inhibitor. Symptoms of overexposure to this product can include systematic poisoning, excessive sweating, weakness, salivation, nausea, diarrhea, bradycardia, tachycardia, bronchorrhea, small pupils, central nervous system (CNS) depression, fasciculation, and convulsions. If poisoning is probable, treat the patient immediately.



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Eyes:	Acute exposure may cause mild eye irritation.
Skin:	Can be absorbed through skin, and produce CNS effects. May dry the skin leading to discomfort and dermatitis.
Inhalation:	Saturated vapors can be encountered in confined spaces and/or under conditions of poor ventilation. Vapors can cause irritation of the respiratory tract. May cause headache, nausea, weakness, lightheadedness, dizziness, drowsiness, and or stupor (CNS depression).
Ingestion:	May result in systematic poisoning. May cause gastrointestinal tract irritation, which may result in nausea and diarrhea. Small amounts of liquid aspirated into the lungs from ingestion or from vomiting (after ingestion) may cause chemical pneumonitis or pulmonary edema. May be fatal if liquid is aspirated into lungs.

4.3 Indication of Immediate Medical Attention and Special Treatment

Treatment (Note to Physician):

Chlorpyrifos is a cholinesterase inhibitor. Pralidoxime chloride (2-PAM, PROTOPAM chloride) may be effective as an adjunct to atropine. Use according to label directions. Before administering pralidoxime chloride, obtain a blood sample for cholinesterase analysis. Adjusting for age and weight, pralidoxime may be administered as a continuous infusion after a loading dose or using a bolus method. Clear airway and provide oxygen before administering atropine. Give atropine intramuscularly or intravenously, depending on severity of poisoning. Atropine may be administered through an alternative route such as an endotracheal tube. The dosage for atropine is as follows: 1 to 2 mg/kg initially IV in adults (or 0.05 mg/kg in children under 12 years) then give appropriate doses every 5 minutes until excessive secretions and sweating have been controlled. Use soap (preferably Tincture Green Soap) and water or dilute hypochlorite solution for decontaminating skin. Avoid opiates, parasympathomimetic agents (e.g. succinylcholine), theophylline, reserpine and or phenothiazines. Suction oral secretions and emesis to avoid aspiration. Artificial respiration or oxygen administration may be necessary. A slurry of activated charcoal may be medically warranted at an oral dose appropriate for adult, child or infant. For seizures, give benzodiazepine intravenously. Observe patient continuously for a least 72 hours. Allow no further exposure until cholinesterase generation has taken place as determined by blood tests.

Contains petroleum distillate. May pose an aspiration pneumonia hazard.

SECTION 5. Fire-Fighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media: Carbon Dioxide (CO₂), Dry Chemical, Foam

Unsuitable Extinguishing Media: Water jet

5.2 Special Hazards Arising From the Substance or Mixture

Specific Hazards: Liquids and vapors are flammable. Vapors may cause flash fire or explosion. Vapors can travel to a source of ignition and flash back. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Also, do not reuse container without commercial cleaning or reconditioning. Closed container may explode under extreme heat. Under fire conditions some components may decompose. Combustion products may include CO, CO₂, hydrogen chloride, sulfur oxide, PO_x, NO_x, chlorides, and sulfides.

5.3 Special Protective Equipment and Precautions for Fire-Fighters

Protection Against Fire: Wear positive pressure, self-contained breathing apparatus and protective firefighting clothing (includes fire-fighting helmet, coat, pants, boots, and gloves).

Special Procedures: Treat as oil fire. Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.



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SECTION 6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Avoid contact with spilled material.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H₂S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

Environmental Precautions: Prevent product from entering into drains and waterways. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities. See Section 12 for additional ecological information.

6.2 Methods and Material for Containment and Cleaning Up

Clean Up Methods: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Recover by pumping or with suitable absorbent.

SECTION 7. Handling and Storage

7.1 Precautions for Safe Handling

Handling: Keep out of reach of children. Use only in a well ventilated area. Avoid breathing vapor, fumes or mist. Avoid contact with eyes, skin, and clothing. Take precautionary measures against static discharge. When transferring, follow proper grounding procedures. Use spark-resistant tools. Always open containers slowly to allow any excess pressure to vent. Follow all SDS/label precautions even after containers are emptied because they may contain product residues.

Hygiene Measures: Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove soiled clothing immediately and clean thoroughly before using again.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage: Product should be stored in compliance with local regulations. Keep away from heat, sparks, and flame. Store containers in a cool, well ventilated place. Keep container closed when not in use. Protect from direct sunlight. Static Discharge: materials can accumulate static discharge which can cause an incendiary electrical discharge. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge. Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilizers. Keep out of reach of children.



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SECTION 8. Exposure Controls / Personal Protection

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

8.1 Control Parameters

Component Name	CAS No.	List/Source	Type	Value
Chlorpyrifos	2921-88-2	ACGIH	TLV	0.2 mg/m ³ , A4 skin
Permethrin	52645-53-1	ACGIH	TWA	5 mg/m ³
		NIOSH	REL	5 mg/m ³
		OSHA	PEL	5 mg/m ³
1,2,4 Trimethylbenzene	95-63-6	ACGIH	TLV-TWA	25 ppm
		OSHA	PEL-TWA	25 ppm
Xylene	1330-20-7	ACGIH	TLV-TWA	100 ppm
		OSHA	PEL-TWA	100 ppm
White Mineral Oil	8042-47-5	ACGIH	TLV-TWA	5 mg/m ³ Inhalable Fraction
		OSHA	PEL-TWA	5 mg/m ³
		NIOSH	REL-TWA	5 mg/m ³ Mist

8.2 Exposure controls

Engineering Controls: Use with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Wash hands thoroughly after handling. Wash clothing before re-using.

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Wear safety glasses with side shields, tightly fitting safety goggles (chemical goggles), or glasses with face shield.

Skin Protection: Wear suitable protective clothing including long-sleeve shirt, long pants, shoes and socks. Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, coveralls.

Hand Protection: Wear suitable protective chemical resistant gloves. Protective glove selection must be based on the user's assessment of the workplace hazards.

Respiratory Protection: In case of insufficient ventilation, use a NIOSH approved filtering face piece respirator with any R or P filter (TC-84A). You can also use other NIOSH approved particulate respirators that offer more protection such as a half face or full face respirator with any filter or a powered air purifying respirator with an HE filter.

SECTION 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Appearance:	Liquid
Color:	Yellow
Odor:	Strong pesticide smell
Odor Threshold:	Not Available
pH:	Not Determined
Melting Point:	Not Applicable
Freezing Point:	Not Determined
Initial Boiling Point:	Not Determined
Flash Point:	62.0° C
Evaporation Rate:	Not Determined
Flammability:	Not Determined
Explosion limits [U/L]:	Not Applicable
Vapor Pressure:	Not Determined



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Vapor Density:	Not Determined
Density:	7.61 lbs/gal
Solubility:	Not Determined
Partition Coefficient:	Not Determined
Auto-Ignition Temperature:	Not Determined
Viscosity:	8.25 cSt at 40° C
Decomposition Temperature:	Not Available
Explosive Properties:	Not Available
Oxidizing Properties:	Not Available

SECTION 10. Stability and Reactivity

10.1 Reactivity

Not Available

10.2 Chemical Stability

Stable under normal conditions

10.3 Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions

Hazardous Polymerization: Not known to occur

10.4 Conditions to avoid

Protect from open flames, high energy ignition sources, excessive heat, and direct sunlight.

10.5 Incompatible materials

Avoid contact with strong oxidizing agents, strong acids, strong bases

10.6 Hazardous decomposition products

None known under normal conditions of storage and use. Under fire conditions some components may decompose. Combustion products may include CO, CO₂, hydrogen chloride, sulfur oxide, PO_x, NO_x, chlorides, and sulfides.

SECTION 11. Toxicological information

11.1 Information on Likely Routes of Exposure

See Section 4.2

11.2 Information on Toxicological Effects

Acute Toxicity

Oral, Male Rat LD₅₀ 1,836 mg/kg-bw

Dermal, Rat LD₅₀ > 2,000 mg/kg-bw

Inhalation, Rat LC₅₀ > 5.0 mg/L

Skin Corrosion/Irritation: U.L.V. MOSQUITOMASTER® 412 is not classified as a skin irritant according to the OSHA 2012 HCS. Mild skin irritation may occur from prolonged or repeated exposure to this product.

Eye Damage/Irritation: U.L.V. MOSQUITOMASTER® 412 is not classified as an eye irritant according to the OSHA 2012 HCS. Mild eye irritation may occur from direct exposure to the product.

Skin Sensitization: U.L.V. MOSQUITOMASTER® 412 is not a skin sensitizer.

Germ Cell Mutagenicity: Chlorpyrifos and Permethrin are not mutagenic. U.L.V. MOSQUITOMASTER® 412 is not expected to be mutagenic.



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Carcinogenicity:	<p>The product has not been tested. The product classification is derived from the properties of the individual components:</p> <p>Chlorpyrifos did not cause cancer in long-term animal studies.</p> <p>Permethrin caused at high dose levels an increased incidence of tumours in mice in the following organ(s): liver, Lungs. The mechanism that triggers tumours in rodents is not relevant for the low exposures encountered under normal use conditions.</p> <p>Permethrin is classified by IARC as Group 3 – Not classifiable as to its carcinogenicity to humans.</p> <p>Contains Xylene: Classified as Carcinogenic, Category 2 (suspected Carcinogen) according to the OSHA 2012 HCS, IARC Group 3</p>
Reproductive Effects:	<p>The product has not been tested. The product classification is derived from the properties of the individual components.</p> <p>Chlorpyrifos did not interfere with fertility in reproduction studies in laboratory animals. Some evidence of toxicity to the offspring occurred, but only at a dose high enough to produce significant toxicity to the parent animals.</p> <p>Teratogenicity (Chlorpyrifos): Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals. Other effects were seen in the fetus only at doses which caused toxic effects to the mother.</p> <p>Permethrin did not cause reproductive toxicity in a two-generation study in rats.</p>
STOT – Single Exposure:	<p>The product has not been tested. The product classification is derived from the properties of the individual components:</p> <p>Vapors can cause irritation of the respiratory tract. High concentrations can cause headache, nausea, weakness, lightheadedness, and stupor (CNS depression).</p> <p>Chlorpyrifos is a cholinesterase inhibitor. Overexposure can result in systematic poisoning, excessive sweating, weakness, salivation, nausea, diarrhea, bradycardia, tachycardia, bronchorrhea, small pupils, central nervous system (CNS) depression, fasciculation, and convulsions.</p> <p>Contains Light Aromatic Solvent Naphtha: STOT-SE Category 2</p> <p>Contains 1,2,4 Trimethylbenzene: STOT-SE Category 2, Category 3-RTI</p> <p>Contains Xylene: STOT-SE Category 3, RTI</p>
STOT – Repeated Exposure:	<p>The product has not been tested. The product classification is derived from the properties of the individual components:</p> <p>May cause damage to organs (brain, central nervous system, respiratory system, skin, and/or eyes) through prolonged or repeated exposure via ingestion, inhalation, eye contact, and/or skin contact.</p> <p>Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis.</p> <p>Significant exposure to this chemical may adversely affect people with chronic disease of the respiratory system, central nervous system, skin, and/or eyes.</p> <p>Contains Light Aromatic Solvent Naphtha: STOT-RE Category 1</p> <p>Contains Xylene: STOT-RE Category 2</p>

SECTION 12. Ecological Information



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12.1 Ecotoxicity

Product specific data is not available. Data referenced is in relation to the active ingredients, Chlorpyrifos and Permethrin.

Toxicity to Fish:	Chlorpyrifos: 96-hr Acute LC ₅₀ 25 µg/L, Rainbow Trout Permethrin: 96-hr Acute LC ₅₀ 0.79 ppb, Bluegill Sunfish
Toxicity to Aquatic Invertebrates:	Chlorpyrifos: 48-hr LC ₅₀ 1.7 µg/L, Daphnia magna Permethrin: 96-hr LC ₅₀ 0.019 ppb, Mysid Shrimp
Toxicity to Aquatic Plants:	Chlorpyrifos: 72-hr NOEC >0.4 mg/L, Algae Permethrin: 72-hr EC ₅₀ 0.5 mg/L, Algae

12.1 Persistence and Degradability

Product specific data not available. Data referenced is in relation to the active ingredients, Chlorpyrifos and Permethrin.

Biodegradability:	Chlorpyrifos: Not readily biodegradable Permethrin: Not rapidly biodegradable
Log K _{ow} :	Chlorpyrifos: 4.70
Partition Coefficient, K _{oc} :	Chlorpyrifos: 360 – 31,000 Permethrin: 100,000
Bioaccumulation:	Chlorpyrifos does not bioaccumulate in aquatic organisms Bioconcentration (BCF) Permethrin: 300; does not bioaccumulate
Mobility in Soil:	Chlorpyrifos: Immobile in soil Permethrin: Immobile in soil

SECTION 13. Disposal Considerations

13.1 Waste Treatment and Disposal methods

Pesticide wastes are regulated. Consult product label for chemical substance and container disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of Federal law. If these wastes cannot be disposed or 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: Rinse thoroughly in accordance with label instructions.

SECTION 14. Transport Information

14.1 DOT (US)

UN Number:	3082
Hazard Class:	9
Packing Group:	III
Proper Shipping Name:	Environmentally Hazardous Substances, Liquid, N.O.S. (Chlorpyrifos,)
Marine Pollutant:	Yes

14.2 IMDG (Vessel)

UN Number:	3082
Hazard Class:	9
Packing Group:	III
Proper Shipping Name:	Environmentally Hazardous Substances, Liquid, N.O.S. (Chlorpyrifos, Permethrin)
Marine Pollutant:	Yes

14.3 ICAO/IATA (Air transport)

UN Number:	3082
Hazard Class:	9
Packing Group:	III
Proper Shipping Name:	Environmentally Hazardous Substances, Liquid, N.O.S. (Chlorpyrifos, Permethrin)
Marine Pollutant:	Yes



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SECTION 15. Regulatory Information

FIFRA Information: This chemical is a pesticide product regulated 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 for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal Word: CAUTION

KEEP OUT OF REACH OF CHILDREN

FIRST AID	
Have product container or label with you when calling a poison control center or doctor, or going for treatment. For Medical Emergencies, call the International Poison Control Center at 1-800-214-7753.	
IF SWALLOWED:	Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	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.
IF IN EYES:	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 the eye. Call a poison control center or doctor for treatment advice.
IF INHALED:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth. Call a poison control center or doctor for further treatment advice.
NOTE TO PHYSICIAN: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine. This product contains petroleum distillate. Vomiting may cause aspiration pneumonia.	

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Caution. Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing of mist. Do not contaminate food or feed products. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

Personal Protective Equipment (PPE): Mixers and loaders involved in ground application must wear coveralls over long-sleeved shirt and long pants, shoes plus socks, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, and a minimum of a NIOSH approved filtering face piece respirator with any R or P filter (TC-84A). You can also use other NIOSH approved particulate respirators that offer more protection such as a half face or full face respirator with any filter or a powered air purifying respirator with an HE filter. Applicators involved in ground ULV application must use an enclosed cab as described in the Engineering Controls section of this label and must wear long-sleeved shirt and long pants, shoes plus socks, and chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils. Aerial applicators and pilots must use an enclosed cockpit and wear long-sleeved shirt, long pants, shoes, and socks.

Engineering Controls: Ground applicators must use an enclosed cab that has a nonporous barrier that totally surrounds the occupants and prevents contact with pesticides outside the cab. Applicators must be provided and have immediately available for use in an emergency when they must exit the cab in the treated area: coveralls, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, and a respirator of the type specified in the PPE section of this labeling. Take off any PPE that was worn in the treated area before reentering the cab and store all such PPE in a chemical-resistant container, such as a plastic bag, to prevent contamination of the inside of the cab.

Mixers and loaders involved in aerial application must use a closed system designed by the manufacturer to enclose the pesticide to prevent it from contacting handlers or other people and which is used and maintained in accordance with the manufacturer's written operating instructions. Mixers and loaders using a closed system must wear protective eyewear if the system operates under pressure, and must have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown coveralls, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile



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Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, chemical-resistant footwear, chemical-resistant apron and a respirator of the type specified in the PPE section of this labeling.

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.

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.

Other Federal Regulations

SARA TITLE III CLASSIFICATION

Section 302: None

Section 311/312: **Fire. Immediate Health. Delayed Health.**

Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372

Chlorpyrifos	CAS# 2921-88-2	12.00%
Permethrin	CAS# 52645-53-1	4.00%
1,2,4 Trimethylbenzene	CAS# 95-63-6	≤ 1.75 %

CERCLA RQ: Chlorpyrifos, CAS# 2921-88-2, RQ 1 lb. RQ is obtained in a 1.1-gallon spill.
Spills exceeding RQ must be reported to the National Response Center.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. California Proposition 65: Not listed.

STATE RIGHT-TO-KNOW: National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

SECTION 16. Other Information

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources we believe to be reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared as is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

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ANVIL® 10+10 ULV

Contains an Oil Soluble Synergized Synthetic Pyrethroid for Control of Adult Mosquitoes (Including Organophosphate-Resistant Species) Midges, and Black Flies in Outdoor Residential and Recreational Areas.

ACTIVE INGREDIENTS:

3-Phenoxybenzyl-(1RS, 3RS; 1RS, 3SR)-2,2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate	10.00%
*Piperonyl Butoxide	10.00%
**OTHER INGREDIENTS	80.00%
	100.00%

Contains 0.74 lbs. Technical SUMITHRIN®/Gallon and 0.74 lbs. PBO/Gallon
*(butylcarbityl)(6-propylpiperonyl) ether and related compounds
**Contains petroleum distillate

KEEP OUT OF REACH OF CHILDREN

CAUTION

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

FIRST AID

IF SWALLOWED:

- Immediately call a poison control center or doctor.
- Do not induce vomiting unless told to do so by a poison control center or a doctor.
- Do not give **any** liquid to the person.
- Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:

- 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.

NOTE TO PHYSICIAN

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-740-8712.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Harmful if absorbed through the skin. Avoid contact with skin, eyes and clothing. In case of contact, flush with plenty of water. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are: barrier laminate, nitrile rubber, neoprene rubber or Viton. Mixers, loaders, applicators, and other handlers must wear long-sleeved shirt, long pants, shoes and socks. In addition, all handlers **except** for applicators using motorized ground equipment, pilots, and flaggers, must wear chemical-resistant gloves. 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 material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. User should remove clothing/PPE immediately if pesticide gets inside, then wash thoroughly and put on clean clothing. User should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

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 applications is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic organisms, including fish and invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates. 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. Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fishing 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 wash waters.

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 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.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

USE RESTRICTIONS:

For use 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.

IN CALIFORNIA: This product is to be applied by County Health Department, State Department of Health Services, Mosquito and Vector Control or Mosquito Abatement District personnel only.

IN FLORIDA: Aerial applications of this product require trained personnel to perform industry accepted assays to monitor resistance formation in targeted mosquitoes.

Do not treat a site with more than 0.0036 lbs of Sumithrin® or 0.0036 lbs of PBO per acre in a 24-hour period. Do not exceed 0.1 lb of Sumithrin® or PBO per acre in any site in any year. More frequent applications 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.

NOTE: When rotating products with other insecticides containing PBO, do not exceed 2 lbs PBO per acre per year.

Not for use in outdoor residential misting systems.

USE INFORMATION

ANVIL 10+10 ULV is approved for application as a thermal aerosol and an Ultra Low Volume (ULV) nonthermal aerosol (cold fog) in mosquito adulticiding programs involving outdoor residential and recreational areas where adult mosquitoes are present in annoying numbers in vegetation surrounding parks, woodlands, swamps, marshes, overgrown areas and golf courses. ANVIL 10+10 ULV may be applied over agricultural areas for the control of adult mosquitoes within or adjacent to the treatment areas.

For best results, apply when mosquitoes are most active and weather conditions are conducive

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to keeping the fog close to the ground. Application in calm air conditions is to be avoided. Apply only when wind speed is greater than or equal to 1 mph. All types of applications should be conducted at temperatures above 50 °F.

NOTE: ANVIL 10+10 ULV cannot be diluted in water. Dilute this product with light mineral oil if dilution is preferred.

SPRAY DROPLET SIZE DETERMINATION

Ground-based, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter is less than 30 microns (Dv 0.5 < 30 µm) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50 µm). 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.

Aerial Equipment, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns (Dv 0.5 < 60 µm) and that 90% of the spray is contained in droplets smaller than 80 microns (Dv 0.9 < 80 µm). 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.

GROUND ULV APPLICATION

Apply ANVIL 10+10 ULV through a standard ULV cold aerosol or non-thermal aerosol (cold fog) generator. Consult the following table for examples of various dosage rates using a swath width of 300 feet for acreage calculations. Vary flow rate according to vegetation density and mosquito population. Use higher flow rate in heavy vegetation or when populations are high.

Dosage Rate of each a.i. (Lbs. Sumithrin® and PBO per acre)	Fl.oz. ANVIL 10+10 ULV per Acre	Flow Rates in fluid oz./minute at truck speeds of:			
		5 MPH	10 MPH	15 MPH	20 MPH
0.0036	0.62	1.9	3.8	5.7	7.6
0.0024	0.42	1.3	2.5	3.8	5.1
0.0012	0.21	0.6	1.3	1.9	2.5

ANVIL 10+10 ULV may also be applied with non-thermal, portable, motorized backpack equipment adjusted to deliver ULV particles of less than 100 microns VMD. Use 0.21 to 0.62 fl. oz. of the undiluted spray per acre (equal to 0.0012 to 0.0036 lb. a.i./acre) as a 50 ft. (15.2 m) swath while walking at a speed of 2 mph (3.2 kph). Dilute with a suitable mineral oil if dilution is preferred. Do not exceed 0.62 fl. oz. of the undiluted spray per acre. Do NOT use portable backpack equipment for application in enclosed spaces.

ANVIL 10+10 ULV may be applied through truck mounted thermal fogging equipment. Do not exceed the maximum rates listed above. May be applied at speeds of 5 to 20 mph. To reduce oil requirement and sludge buildup in equipment, use a 60 - 100-second viscosity mineral “fog” oil, or other fuel-type oil. Use a clean, well-maintained and properly calibrated fogger. Do not wet foliage since oil base formulations may be phytotoxic. For use with hand carried foggers, use same rates of active ingredient per acre and a swath width of 50 ft with a walking speed of 2 mph. Fog downwind, with the wind at your back. Do NOT use hand-carried foggers for application in enclosed spaces.

AERIAL APPLICATION

ANVIL 10+10 ULV may be applied at rates of 0.21 to 0.62 fluid ounces ANVIL 10+10 ULV per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. ANVIL 10+10 ULV may also be diluted with a suitable solvent such as mineral oil and applied by aerial ULV equipment so long as 0.62 fluid ounces per acre of ANVIL 10+10 ULV is not exceeded. Do not apply by fixed wing aircraft at a height less than 100 feet above the ground or canopy, or by helicopter at a height less than 75 feet above the ground or canopy unless specifically approved by the state or tribe based on public health needs.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a cool, dry place. Keep container closed.

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

CONTAINER HANDLING: Nonrefillable 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 1/4 full with mineral oil and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse 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 if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

CONTAINER HANDLING: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

NOTICE: To the extent provided by law, seller makes no warranty, expressed or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use and/or handling of this material when use and/or handling is contrary to label instructions.

ANVIL™ is a Trademark of Clarke Mosquito Control Products, Inc.
Sumithrin® is a Trademark of Sumitomo Chemical Co, Ltd.

Manufactured For
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 N. GARDEN AVENUE
ROSELLE, ILLINOIS 60172 U.S.A
FOR MORE INFORMATION CALL: 1-800-323-5727



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SECTION 1. Identification of the Substance/Mixture and of the Company

Product Identifier

Formulation Identifier: ANVIL[®] 10+10 ULV

EPA Registration Number: 1021-1688-8329

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant identified uses: Insecticide for control of adult mosquitoes.

Uses advised against: See product label for use restrictions

Details of the Supplier

Clarke Mosquito Control Products, Inc.

675 Sidwell Court

St. Charles, IL 60174 U.S.A.

+1 (630) 894-2000

Email: Clarke@clarke.com

Emergency Telephone Number

24 Hour MEDICAL Emergency: SafetyCall[®]: (888) 740-8712 or (952) 852-9509

24 Hour TRANSPORTATION Emergency: CHEMTREC[®]: (800)-424-9300

International: (703) 527-3887

SECTION 2. Hazards identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS (2012)

Classification of the Substance or Mixture

Acute Toxicity (Inhalation): Category 4

Aspiration Toxicity: Category 1

Pictogram:



Signal Word: DANGER

Hazard Statements: Harmful if inhaled
May be fatal if swallowed and enters airways.

Precautionary Statements:

PREVENTION: Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in well-ventilated area

RESPONSE: IF INHALED- Remove victim to fresh air and keep at rest in a position for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

STORAGE: Store in a well ventilated place. Keep container tightly closed.

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

Other Hazards Not Classifiable Under OSHA 2012 HCS - Not applicable

SECTION 3. Composition/Information on Ingredients



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Components

Substance Name	CAS No.	Concentration % w/w
SUMITHRIN [®] (d-Phenothrin)	26002-80-2	10.0
Piperonyl Butoxide (PBO)	51-03-6	10.0
Petroleum distillates, hydrotreated light	64742-47-8	5 – 10 *
White mineral oil	8042-47-5	50 – 75 *

* The exact percentage (concentration) of composition has been withheld as trade secret.

Ingredients not identified are non-hazardous and/or are not required to be disclosed pursuant to 29 CFR 1910.1200 (2012), and are withheld as trade secret.

SECTION 4. First Aid Measures

Description of First Aid Measures

- Eye contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing. Call a poison control center/doctor for treatment advice.
- Skin Contact: 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.
- Ingestion: If swallowed, IMMEDIATELY call a poison control center or doctor for treatment advice. DO NOT give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Never give anything by mouth to an unconscious person.
- Inhalation: Remove affected person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
- Treatment: For skin effects, a highly efficient therapeutic agent for Pyrethrin/Pyrethroid exposure is topical application of Tocopherol Acetate (Vitamin E).

Most Important Symptoms and Effects, both Acute and Delayed

The most important known symptoms and effects are described in section 2 and/or in section 11.

Indication of Immediate Medical Attention and Special Treatment

No data available.

SECTION 5. Fire-Fighting Measures

Extinguishing Media

Suitable Extinguishing Media: Water Fog, Carbon Dioxide (CO₂), Dry Chemical, foam

Unsuitable Extinguishing Media: Do not use water jet.

Special Hazards Arising From the Substance or Mixture

Specific Hazards: No information available.

Explosion data:

Sensitivity to Mechanical Impact: None

Sensitivity to static discharge: None

Special Protective Equipment and Precautions for Fire-Fighters

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

Special Procedures: Treat as oil fire. Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.



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SECTION 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Use appropriate protection (see section 8). Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required.

Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities.

Methods and Material for Containment and Cleaning Up

Methods for containment: Prevent further leakage of spillage if safe to do so. Move containers from spill area.

Small spill: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Large Spill: Prevent entry into sewers, water courses, basements or confined areas. Dam up and soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7. Handling and Storage

Precautions for Safe Handling

Advice on safe handling: Use with local exhaust ventilation. Use personal protective equipment as required. Avoid breathing mist/vapors/spray.

Handling: Keep out of reach of children. Do not take internally. Avoid contact with skin and eyes.

Hygiene Measures: Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove soiled clothing immediately and clean thoroughly before using again.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in accordance with local regulations. Keep containers tightly closed in a cool, well-ventilated place. Protect from excessive heat and cold. Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilizers. Keep in properly labeled containers.

SECTION 8. Exposure Controls / Personal Protection

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

Control Parameters

Component Name	CAS No.	List	Type	Value
Petroleum Distillates	64742-47-8	ACGIH	TLV/TWA (skin exposure)	200 mg/m ³
Mineral Oil	8042-47-5	OSHA & ACGIH	PEL / TLV, TWA (oil mist)	5 mg/m ³

Exposure controls

Engineering Controls: Use with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Wash hands thoroughly after handling. Wash clothing before re-using.

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Safety Glasses, Goggles or Face Shield

Skin Protection: Wear suitable protective gloves and clothing.



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Hand Protection:	It is good industrial hygiene practice to minimize skin contact. If required or preferred, use suitable protective chemical resistant gloves such as latex, nitrile, or neoprene.
Respiratory Protection:	None required. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

SECTION 9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance:	Clear, Liquid
Color:	Colorless (1.0 Gardner Scale)
Odor:	Solvent, mineral oil
Odor Threshold:	No information available
pH:	No information available, immiscible in water
Melting Point:	No information available
Freezing Point:	No information available
Initial Boiling Point:	No information available
Flash Point:	>93.3°C (>200°F), Tag Closed Cup
Evaporation Rate:	No information available
Flammability:	No information available
Explosion limits [U/L]:	No information available
Vapor Pressure:	No information available
Vapor Density (Air =1):	Heavier than air
Density:	0.887 g/cm ³ @ 20 °C
Solubility:	Immiscible in water
Partition Coefficient:	No information available
Auto-Ignition Temperature:	No information available
Dynamic Viscosity:	25 cPs @ 24.0°C (Brookfield)
Refractive Index:	1.4769 @ 25 °C
Decomposition Temperature:	No information available
Explosive Properties:	No information available
Oxidizing Properties:	No information available
VOC Content (%):	0.4

SECTION 10. Stability and Reactivity

Reactivity

No data available

Chemical Stability

Stable under recommended normal storage conditions

Possibility of Hazardous Reactions

Hazardous Reactions:	None under normal conditions
Hazardous Polymerization:	Hazardous polymerization does not occur

Conditions to avoid Extremes of temperature and direct sunlight

Incompatible materials Not compatible with strong acids and bases. Not compatible with oxidizing agents.

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)



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SECTION 11. Toxicological information

Information on Likely Routes of Exposure

Routes of entry: Oral, Dermal and Inhalation

May be fatal if swallowed and enters airways due to petroleum distillate. Vomiting may cause aspiration pneumonia.

Information on Toxicological Effects

Acute Toxicity / Effects

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

Oral, (Rat) LD₅₀ > 5,000 mg/kg

Dermal, (Rabbit) LD₅₀ > 2,000 mg/kg

Inhalation, Rat LC₅₀ > 3.76 mg/l (4 hours)

Skin Corrosion/Irritation: Irritation cleared in 72 hours, skin irritation index 0.04

Serious Eye Damage/Irritation: Minor irritation clearing in 48 hours

Skin Sensitization: Not a sensitizer (Buehler, Guinea Pig)

Conditions aggravated by exposure: None known

Chronic Toxicity / Effects

Assessment of repeated dose toxicity: No significant signs or symptoms indicative of any adverse health effects are expected to occur.

Germ Cell Mutagenicity This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not carcinogenic. This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Marginally higher incidences of benign liver tumors in mice were observed following lifetime high dose exposures to PBO. The significance of these observations is undetermined and under review. The doses at which tumors were observed for PBO greatly exceeded potential exposure from labeled uses.

Reproductive Effects: This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% produce a fertility impairing effect. No indication of a developmental toxic / teratogenic effect.

STOT – Single exposure Not classified

STOT – Repeated exposure Not classified

SECTION 12. Ecological Information

Ecotoxicity:

Product specific data is not available. Data referenced is in relation to active ingredients, d-Phenothrin and PBO

Toxicity to Fish: d-Phenothrin 96-hr Acute LC₅₀ 16.7 µg/L (rainbow trout), 15.8 µg/L (bluegill sunfish)
PBO: 96-hour Acute LC₅₀ 6/12 ppm (rainbow trout)

Toxicity to Aquatic Invertebrates: d-Phenothrin 48-hr LC₅₀ 4.4 µg/L *Daphnia magna*
d-Phenothrin 48-hr LC₅₀ 0.025 µg/L *Mysidopsis bahia*
PBO: 96-hr LC₅₀ 0.49 ppm, *Americamysis bahia*

Toxicity to Plants: No data available

Persistence and Degradability

Product specific data not available. Data referenced is in relation to the active ingredients, d-Phenothrin and PBO

Biodegradability: Not readily biodegradable (by OECD criteria)



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Bioconcentration Factor: d-Phenothrin: 592 (edible), 4,000 (non-edible)
PBO: 2, 175

Log Kow: d-Phenothrin: 6
PBO: 4.95

Depuration: d-Phenothrin, PBO: 2-4 days

Mobility in Soil: d-Phenothrin has low water solubility and binds tightly to soil. Based on these properties, d-phenothrin is relatively immobile in soil and its potential to contaminate groundwater is low.
PBO is not very soluble in water and adheres moderately to soil with organic matter.

SECTION 13. Disposal Considerations

Waste Treatment and Disposal methods

Pesticide wastes are regulated. Consult product label for chemical substance and container disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of Federal law. If these wastes cannot be disposed or 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: Rinse thoroughly in accordance with label instructions.

SECTION 14. Transport Information

DOT (US) Not regulated in non-bulk packagings [packagings which have a maximum capacity of 450 L (119 gallons) or less].

When transported in bulk packagings [exceeding 119 gallons capacity]:

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

IMDG (Vessel)

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

ICAO/IATA (Air transport)

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

SECTION 15. Regulatory Information

FIFRA Information: This chemical is a pesticide product regulated 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 for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal word: CAUTION

KEEP OUT OF REACH OF CHILDREN

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS AND DOMESTIC ANIMALS: CAUTION. Harmful if absorbed through the skin. Avoid contact with skin, eyes and clothing. In case of contact, flush with plenty of water. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.



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Personal Protective Equipment (PPE): Some materials that are chemical-resistant to this product are: barrier laminate, nitrile rubber, neoprene rubber or Viton. Mixers, loaders, applicators, and other handlers must wear long-sleeve shirt, long pants, shoes and socks. In addition, all handlers except for applicators using motorized ground equipment, pilots, and flaggers, must wear chemical-resistant gloves. 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 material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

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. As soon as possible, wash thoroughly and change into clean clothing.

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 applications is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

FIRST AID

If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or a doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

If on skin or clothing: 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.

Note to physician: Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents call 1-888-740-8712.

Other Federal regulations

SARA TITLE III CLASSIFICATION

Section 302: None

Section 311/312: Immediate (acute) health hazard

Section 313: This product contains the following chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CAS Number	Chemical Name	% by wt.
26002-80-2	d-phenothrin	10.0
51-03-6	piperonyl butoxide	10.0

CERCLA RQ: None

US California Proposition 65: Not listed

STATE RIGHT-TO-KNOW : National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16. Other Information

DISCLAIMER OF LIABILITY: The information in this SDS was obtained from sources we believe to be reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared as is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.



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NFPA Health Hazards 2
Flammability 1
Instability 0
Physical and Chemical Properties –

HMIS Health Hazards 1
Flammability 1
Physical Hazards 0
Personal Protection X

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[®] Sumithrin is a Registered Trademark of Sumitomo Company Ltd.

End of document



AquaANVIL™

Water-Based Adulticide

ACTIVE INGREDIENTS:

Sumithrin®: 3-Phenoxybenzyl-(1RS, 3RS, 1RS, 3SR)-2,2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate.....	10.00%
*Piperonyl Butoxide	10.00%
OTHER INGREDIENTS	80.00%
	100.00%

Contains 0.847 pounds of Technical SUMITHRIN®/Gallon and 0.847 pounds of Piperonyl Butoxide (PBO)/Gallon
*(butylcarbityl)(6-propylpiperonyl) ether and related compounds

KEEP OUT OF REACH OF CHILDREN CAUTION

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

FIRST AID

IF IN EYES:	<ul style="list-style-type: none">• 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.
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Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-740-8712.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators, and other handlers must wear the following: -long-sleeved shirt, -long pants, -shoes and socks. 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 material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

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 the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

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 the Global Positioning System (GPS) or mechanical flaggers.

ENVIRONMENTAL HAZARDS

This product is 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. 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. 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 wash waters.

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 treatment 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 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.

DIRECTIONS FOR USE

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

USE RESTRICTIONS: For use 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.

IN CALIFORNIA: This product is to be applied by County Health Department, State Department of Health Services, Mosquito and Vector Control or Mosquito Abatement District personnel only.

IN FLORIDA: Aerial applications of this product require trained personnel to perform industry accepted assays to monitor resistance formation in targeted mosquitoes.

Do not treat a site with more than 0.0036 lbs of Sumithrin® and Piperonyl Butoxide (PBO) per acre in a twenty-four hour period. Do not exceed 0.1 lb of Sumithrin® or PBO per acre in any site in one year. 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.

NOTE: When rotating products with other insecticides containing PBO, do not exceed 2 lbs PBO per acre per year.

Not for use in outdoor residential misting systems. AquaANVIL™ cannot be mixed with oil. Use only clean water. SHAKE OR AGITATE THOROUGHLY BEFORE DILUTING. Diluted product must be thoroughly agitated before use. Avoid storing excess formulation in equipment.

USE INFORMATION: For use in mosquito adulticiding programs involving outdoor residential and recreational areas where adult mosquitoes are present in annoying numbers, and in vegetation surrounding parks, woodlands, swamps, marshes, overgrown areas and golf courses. AquaANVIL™ may be applied over agricultural areas for the control of adult mosquitoes within or adjacent to these areas.

For best results, apply when mosquitoes are most active and meteorological conditions are conducive to keeping the spray cloud close to the ground. Application in calm air conditions is to be avoided. Apply only when wind speed is greater than or equal to 1 mph. Air temperature should be greater than 50 °F when conducting all types of applications.

SPRAY DROPLET SIZE DETERMINATION

Ground-Based, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter (VMD) is less than 30 microns (Dv 0.5 < 30 um) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50 um). 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.

Aerial wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns (Dv 0.5 < 60 um) and that 90% of the spray is contained in droplets smaller than 80 microns (Dv 0.9 < 80 um). 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.

GROUND U.L.V. APPLICATION

Apply AquaANVIL undiluted at a flow rate of 1.1 to 3.3 fluid ounces per minute at an average vehicle speed of 10 mph using a swath width of 300 feet for acreage calculations (see chart below). Under normal residential conditions a flow rate of 2.2 fluid ounces per minute is recommended. If a different vehicle speed is used, adjust rate accordingly. These rates are equivalent to 0.0012 to 0.0036 pounds of Sumithrin® and Piperonyl butoxide per acre. Vary flow rate according to vegetation density and mosquito population. Use high flow rate in heavy vegetation or when populations are high.

AquaANVIL™ may also be diluted with water and applied so as not to exceed the 0.0036 lbs of each a.i., Sumithrin® and PBO per acre as shown in the dilutions tables on this label. If an alternative dilution rate is used, adjust the flow rate accordingly, provided the droplet size and spectrum remains within label specifications.

Rates to use AquaANVIL™ Undiluted for Mosquito Control:

Pounds a.i./Acre		AquaANVIL™ Fl.oz./Acre	Flow Rates in fluid oz./minute at truck speeds of:			
Sumithrin®	PBO		5 MPH	10 MPH	15 MPH	20 MPH
0.0036	0.0036	0.54	1.6	3.3	4.9	6.6
0.0024	0.0024	0.36	1.1	2.2	3.3	4.4
0.0012	0.0012	0.18	0.5	1.1	1.6	2.2

AquaANVIL may also be applied with non-thermal, portable, motorized backpack equipment adjusted to deliver ULV particles of less than 100 microns VMD. Use 0.18 to 0.54 fl.oz. of the undiluted spray per acre (equal to 0.0012 to 0.0036 lb a.i./acre) as a 50 ft (15.2 m) swath while walking at a speed of 2 mph (3.2 kph). Dilute only with water if dilution is preferred. Do not exceed 0.54 fl.oz. of the undiluted spray per acre. Do NOT use portable backpack equipment for application in enclosed spaces.

AERIAL APPLICATION

AquaANVIL™ may be applied at rates of 0.18 to 0.54 fluid ounces of AquaANVIL™ per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. AquaANVIL™ may also be diluted with water and applied by aerial ULV equipment so long as 0.54 fluid ounces per acre of AquaANVIL™ is not exceeded.

RELEASE HEIGHT FOR AERIAL: Fixed Wing: Apply using a nozzle height of no less than 100 feet above the ground or canopy. Rotary Wing: Apply using a nozzle height of no less than 75 feet above the ground or canopy.

Reference the dilution charts on this label. If an alternative dilution is used, adjust the flow rate accordingly, provided the droplet size and spectrum remains within label specifications.

Rates to use diluted (1 to 1 dilution ratio) AquaANVIL™ (Finished spray is a 5% by weight

Sumithrin, and contains 0.424 lbs of each a.i., Sumithrin and PBO per gallon)

Pounds a.i./Acre		Finished Spray Fluid oz./Acre	Flow Rates in fluid oz./minute at truck speeds of:			
Sumithrin®	PBO		5 MPH	10 MPH	15 MPH	20 MPH
0.0036	0.0036	1.09	3.3	6.6	9.9	13.2
0.0024	0.0024	0.73	2.2	4.4	6.6	8.8
0.0012	0.0012	0.36	1.1	2.2	3.3	4.4

Rates to use diluted (1 to 2 dilution ratio) AquaANVIL™ (Finished spray is a 3.3% by weight Sumithrin, and contains 0.282 lbs of each a.i., Sumithrin and PBO per gallon)

Pounds a.i./Acre		Finished Spray Fluid oz./Acre	Flow Rates in fluid oz./minute at truck speeds of:			
Sumithrin®	PBO		5 MPH	10 MPH	15 MPH	20 MPH
0.0036	0.0036	1.63	4.9	9.9	14.8	19.8
0.0024	0.0024	1.09	3.3	6.6	9.9	13.2
0.0012	0.0012	0.54	1.6	3.3	4.9	6.6

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a cool, dry place. Keep container closed.

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:

[For 2.5-gallon Jugs]: Nonrefillable 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 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into applica- tion equipment or a rinse 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 if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

[For refillable drums & totes]: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

FOR MORE INFORMATION CALL 1-800-323-5727

NOTICE: To the extent provided by law, Seller makes no warranty, expressed or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use and/or handling of this material when use and/or handling is contrary to label instructions.

AquaANVIL™ - Trademark of Clarke Mosquito Control Products, Inc.

Sumithrin® - Trademark of Sumitomo Chemical Co., Ltd.

Manufactured For:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 N. GARDEN AVENUE
ROSELLE, ILLINOIS 60172

AVAILABLE PACKAGING: 2.5 GAL, 30 GAL, 55 GAL, 275 GAL, TOTE

Lot No.: Marked on Container Label

EPA Reg. No.: 1021-1807-8329

EPA Est. No.: _____



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SECTION 1. Identification of the Substance/Mixture and of the Company/Undertaking

Product Identifier

Formulation Identifier: AquaANVIL® Water-based Adulticide

EPA Registration Number: 1021-1807-8329

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant identified uses: Insecticide for control of adult mosquitoes.

Uses advised against: See product label for use restrictions

Details of the Supplier

Clarke Mosquito Control Products, Inc.
675 Sidwell Court
St. Charles, IL 60174 U.S.A.
+1 (630) 894-2000
Email: Clarke@clarke.com

Emergency Telephone Number

24 Hour MEDICAL Emergency: SafetyCall®: (888) 740-8712 or (952) 852-9509

24 Hour TRANSPORTATION Emergency: CHEMTREC®: (800)-424-9300

International: (703) 527-3887

SECTION 2. Hazards identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture

Acute Toxicity – Inhalation (dusts/Mists): Category 4

Pictogram:



Signal Word: Warning

Hazard Statements: Harmful if inhaled

Precautionary Statements:

PREVENTION: Avoid breathing mist/vapors/spray
Use only outdoors or in a well ventilated area

RESPONSE: IF INHALED: Remove victim to fresh air and keep at rest in a position for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell

STORAGE: Store in a well-ventilated place. Keep cool

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

Other Hazards Not Classifiable Under OSHA 2012 HCS - Not applicable



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Comments: This material is considered hazardous by the 2012 OSHA Hazard Communication Standard [29 CFR 1910.1200(a)(1), and the GHS

SECTION 3. Composition/Information on Ingredients

Components

Substance Name	CAS No.	Concentration % w/w
SUMITHRIN® (d-Phenothrin)	26002-80-2	10
Piperonyl Butoxide (PBO)	51-03-6	10

Ingredients not identified are non-hazardous and/or are not required to be disclosed pursuant to 29 CFR 1910.1200 (2012), and are withheld as trade secret.

SECTION 4. First Aid Measures

Description of First Aid Measures

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

Skin Contact: 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.

Ingestion: If swallowed, IMMEDIATELY call a poison control center or doctor for treatment advice. DO NOT give **any** liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Never give anything by mouth to an unconscious person.

Inhalation: Remove affected person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Indication of Immediate Medical Attention and Special Treatment

Notes to Physician: For skin effects, a highly efficient therapeutic agent for Pyrethrin/Pyrethroid exposure is topical application of Tocopherol Acetate (Vitamin E).

SECTION 5. Fire-Fighting Measures

Extinguishing Media

Suitable Extinguishing Media: Water Fog, Carbon Dioxide (CO₂), Dry Chemical, foam

Unsuitable Extinguishing Media: Do not use water jet.

Special Hazards Arising From the Substance or Mixture

Specific Hazards: No information available.

Explosion data:

Sensitivity to Mechanical Impact: None

Sensitivity to static discharge: None

Special Protective Equipment and Precautions for Fire-Fighters

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

Special Procedures: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.



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SECTION 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Use appropriate protection (see section 8). Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required.

Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities.

Methods and Material for Containment and Cleaning Up

Methods for containment: Prevent further leakage of spillage if safe to do so. Move containers from spill area.

Small spill: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Large Spill: Prevent entry into sewers, water courses, basements or confined areas. Dam up and soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7. Handling and Storage

Precautions for Safe Handling

Protective measures: Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. For more information, see product label.

Hygiene Measures: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. For more information, see product label. Keep out of reach of children.

SECTION 8. Exposure Controls / Personal Protection

Control Parameters

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

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Tight sealing safety goggles and face shield.

Skin Protection: Wear a long-sleeved shirt, long pants, socks and shoes.

Hand Protection: It is good industrial hygiene practice to minimize skin contact. If required or preferred, use suitable protective chemical resistant gloves such as latex, nitrile, or neoprene.

Respiratory Protection: None required. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.



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SECTION 9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Physical State:	Liquid
Appearance:	Milky white
Color (Gardner):	No information available
Odor:	Sweet
Odor Threshold:	No information available
pH:	4.1
Melting Point:	No information available
Freezing Point:	No information available
Initial Boiling Point:	No information available
Flash Point:	>93.3°C (>200°F) (Tag Closed Cup)
Evaporation Rate:	No information available
Flammability:	No information available
Explosion limits [U/L]:	No information available
Vapor Pressure:	No information available
Vapor Density (Air =1):	Heavier than air
Relative Density:	No information available
Density:	1.016 g/cm ³ @ 20°C
Specific Gravity (Water = 1)	No information
Solubility (Water/Alcohol):	Partially miscible
Partition Coefficient:	No information available
Auto-Ignition Temperature:	No information available
Dynamic Viscosity:	16 cPs @ 24.0° C Brookfield
Decomposition Temperature:	No information available
Explosive Properties:	No information available
Oxidizing Properties:	No information available
VOC Content (%):	10%

SECTION 10. Stability and Reactivity

Reactivity

No data available

Chemical Stability

Stable under recommended normal storage conditions

Possibility of Hazardous Reactions

Hazardous Reactions:	None under normal conditions
Hazardous Polymerization:	Hazardous polymerization does not occur

Conditions to avoid Extremes of temperature and direct sunlight

Incompatible materials Not compatible with strong acids and bases. Not compatible with oxidizing agents.

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)



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SECTION 11. Toxicological information

Information on Likely Routes of Exposure

Routes of entry: Oral, Dermal, Inhalation

Information on Toxicological Effects

Acute Toxicity / Effects

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

Oral, (Rat) LD₅₀ > 5,000 mg/kg

Dermal, (Rabbit) LD₅₀ > 5,000 mg/kg

Inhalation, Rat LC₅₀ > 2.0 mg/l (four hours)

Skin Corrosion/Irritation: Slight irritation - Irritation Index = 0.4

Serious Eye Damage/Irritation: Irritation clearing in 48 hours

Skin Sensitization: Negative – (guinea pig)

Conditions aggravated by exposure: None known

Chronic Toxicity / Effects

Assessment of repeated dose toxicity: No significant signs or symptoms indicative of any adverse health effects are expected to occur.

Germ Cell Mutagenicity This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not carcinogenic. This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Marginally higher incidences of benign liver tumors in mice were observed following lifetime high dose exposures to PBO. The significance of these observations is undetermined and under review. The doses at which tumors were observed for PBO greatly exceeded potential exposure from labeled uses.

Reproductive Effects: This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% produce a fertility impairing effect. No indication of a developmental toxic / teratogenic effect.

STOT – Single exposure Not classified

STOT – Repeated exposure Not classified

SECTION 12. Ecological Information

Ecotoxicity:

Product specific data is not available. Data referenced is in relation to active ingredients, d-Phenothrin and PBO

Toxicity to Fish: d-Phenothrin 96-hr Acute LC₅₀ 16.7 µg/L (rainbow trout), 15.8 µg/L (bluegill sunfish)
PBO: 96-hour Acute LC₅₀ 6/12 ppm (rainbow trout)

Toxicity to Aquatic Invertebrates: d-Phenothrin 48-hr LC₅₀ 4.4 µg/L *Daphnia magna*
d-Phenothrin 480hr LC₅₀ 0.025 µg/L *Mysidopsis bahia*
PBO: 96-hr LC₅₀ 0.49 ppm, *Americamysis bahia*

Toxicity to Plants: No data available

Persistence and Degradability

Product specific data not available. Data referenced is in relation to the active ingredients, d-Phenothrin and PBO



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Biodegradability:	Not readily biodegradable (by OECD criteria)
Bioconcentration Factor:	d-Phenothrin: 592 (edible), 4,000 (non-edible) PBO: 2, 175
Log Kow:	d-Phenothrin: 6 PBO: 4.95
Depuration:	d-Phenothrin, PBO: 2-4 days
Mobility in Soil:	d-Phenothrin has low water solubility and binds tightly to soil. Based on these properties, d-phenothrin is relatively immobile in soil and its potential to contaminate groundwater is low. PBO is not very soluble in water and adheres moderately to soil with organic matter.

SECTION 13. Disposal Considerations

Waste Treatment and Disposal methods

Pesticide wastes are regulated. Consult product label for chemical substance and container disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of Federal law. If these wastes cannot be disposed or 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: Rinse thoroughly in accordance with label instructions.

SECTION 14. Transport Information

DOT (US) Not regulated

IMDG (Vessel)

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

ICAO/IATA (Air transport)

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

SECTION 15. Regulatory Information

Difference between SDS and EPA (FIFRA) Pesticide Label: This chemical is a pesticide product regulated 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 for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal Word: CAUTION

Precautionary Statements: **Hazards to Humans and Domestic Animals:** CAUTION. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

Personal Protective Equipment (PPE): Mixers, loaders, applicators and other handlers must wear the following: long-sleeve shirt, long pants, shoes and socks. 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 material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.



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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.

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 the Global Positioning System (GPS) or mechanical flaggers.

FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies of pesticide incidents, call 1-888-740-8712.

If in eyes: 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.

Other Federal regulations

SARA TITLE III CLASSIFICATION

Section 302: None

Section 311/312 None

Section 313: This product contains the following chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CAS Number	Chemical Name	% by wt.
26002-80-2	d-phenothrin	10.0
51-03-6	piperonyl butoxide	10.0

CERCLA RQ: None

US California Proposition 65: Not listed

STATE RIGHT-TO-KNOW : National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16. Other Information

DISCLAIMER OF LIABILITY: The information in this SDS was obtained from sources we believe to be reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared as is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

NFPA	Health Hazards 2	Flammability 1	Instability 0	Physical and Chemical Properties –
HMIS	Health Hazards 1	Flammability 1	Physical Hazards 0	Personal Protection X

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