

PermaSeTM 4-4

For use as a spray by air and ground application to control adult mosquitoes, biting and non-biting midges, gnats, and black flies.

For use by federal, state, tribal, or local governmental 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 synergized permethrin formulation that provides quick knockdown and effective control of mosquitoes, black flies, gnats, biting and non-biting midges, as well as other biting flies in residential, recreational, urban, rural, and agricultural areas where mosquitoes and flies are found.

- ULV application provides excellent control at rates from 0.001 up to 0.007 pounds permethrin per acre.
- May be applied undiluted or diluted.

ACTIVE INGREDIENTS:

Permethrin: (3-phenoxyphenyl) methyl (+/-) Cis/trans 3-(2,2-dichloroethenyl)

2,2-Dimethyl-cyclopropanecarboxylate: 4.6%

Piperonyl Butoxide*: 4.6%

OTHER INGREDIENTS:** 90.8%

TOTAL: 100.0%

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

**Contains a Petroleum Distillate Solvent

Contains 0.3344 lb. A.I. Permethrin and 0.3344 lb. A.I. Piperonyl Butoxide per gallon

KEEP OUT OF REACH OF CHILDREN CAUTION

See Inside Attached Booklet for Additional Precautionary Statements.

PRECAUCION AL USUARIO: Si usted no lee inglés, 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.)

FIRST AID

IF SWALLOWED:	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 by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
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 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 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.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact SafetyCall® International (866) 897-8050 for emergency medical treatment information.

Note to Physician: Contains petroleum distillate-vomiting may cause aspiration hazard.



EPA Reg. No. 86291-3-96263
EPA Est. No. 53883-TX-002


ADAPCO[®]
Preserving Public Health

Distributed by:
ADAPCO LLC.
550 Aero Lane
Sanford, FL 32771

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

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

Environmental Hazards

This pesticide is extremely toxic to aquatic organisms, including fish and aquatic invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates.

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 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 and Chemical Hazards

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

DIRECTIONS FOR USE

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

While using or handling this product wear long sleeved shirt and long pants, socks, and shoes.

Conditions and Rates to Use for Mosquito Control

PermaSease™ 4-4 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 urban areas, commercial areas, woodlands, roadsides, parks, campsites, animal quarters, barns, athletic fields, golf courses, residential areas, municipalities, gardens, playgrounds, recreational areas, non-crop waste areas, and over listed crops, range land, and pastures where mosquitoes and flies may be found. **PermaSease™ 4-4** may also be applied to treat outdoor aggregation and harborage sites including storm drains, underground drainage pipes and pipe chases. For best results, treat when insects are most active and conditions are conducive to keeping the fog in the air column close to the ground, (e.g. cool temperatures of the evening, night or early morning and wind).

Do not apply more than 0.007 lb. ai/A per day. Do not apply more than 0.18 lb. ai/A 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. Apply when wind speed is greater than or equal to 1 mph.

Spray Drift Management for Wide Area Mosquito Abatement

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

Both ground and aerial applications should be made when meteorological conditions are conducive to keeping the spray cloud close to the ground, such as when an air temperature inversion is present. Applications during the cool hours of early morning or evening are preferable. Air temperatures should be greater than 50° F when conducting all types of applications. Application in calm air conditions is to be avoided. Apply when wind speed is greater than 1 mph.

PermaSease™ 4-4 can be applied over specific growing crops and range grasses prior to harvest for the control of adult mosquitoes and biting flies within or adjacent to these areas. Application can be made where the following crops are present:

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

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.

GROUND APPLICATION INSTRUCTIONS

Droplet Size Calibration for Ground Application Equipment

For ground-based application spray equipment must be adjusted so that the volume median diameter is less than 30 microns (Dv 0.5 < 30um) 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, or 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.

ULV Non-Thermal Aerosol (Cold Fog)

To control adult mosquitoes, midges, gnats, and black flies apply **PermaSease™ 4-4** diluted or undiluted using any standard ULV ground applicator capable of producing the required droplet spectrum. Apply the product to deliver 0.001 to 0.007 lb. permethrin per acre. Under normal conditions a 300ft swath width is recommended but in dense vegetation, high mosquito populations, or open areas the swath width can be adjusted accordingly to establish the proper flow rates. See Rate Charts below for some suggested application rates for ground ULV applications based on a 300 ft swath width.

When applying this product undiluted, apply at a flow rate of 2.7-18.7 ounces per minute at an average vehicle speed of 10 mph. These rates are equivalent to 0.001 to 0.007 pound of permethrin and 0.001 to 0.007 pounds of piperonyl butoxide per acre with an assumed 300ft swath width. If a different vehicle speed or swath width is used, adjust the rate accordingly to achieve a rate between 0.001 and 0.007 lbs. of permethrin per acre. Vary flow rates accordingly to vegetation density and mosquito population. Use of the maximum flow rates and application rates listed on this label is recommended to treat heavy vegetation or when target insect populations are high. An accurate flow rate control system must be used to ensure proper flow rate. For optimum ground application performance, apply at speeds of 5 to 20 mph.

Flow Rate Chart for Use of PermaSease™ 4-4 Diluted and Undiluted
PermaSease™ 4-4 may also be applied by diluting, 1 part to 1 part of a light mineral oil or suitable solvent, applied so as not to exceed 0.007 lbs. of permethrin per acre. If an alternate dilution rate is required, adjust the flow rate, accordingly, provided the droplet size and spectrum remain within label specifications.

Ground Application Rate Chart – For Use of PermaSease™ 4-4: Undiluted						
Conditions and Rates to PermaSease™ 4-4 Undiluted for Mosquito Control						
lbs. A.I. acre		Application Rates Fluid Ounces per Minute				Fluid Ounces and (milliliters) per acre
Permethrin	PBO	5 mph	10 mph	15 mph	20 mph	
0.001	0.001	1.2	2.3	3.5	4.6	0.38 (11.32 mL)
0.00175	0.00175	2.0	4.1	6.1	8.1	0.67 (19.81 mL)
0.0025	0.0025	2.9	5.8	8.7	11.6	0.96 (28.39 mL)
0.0035	0.0035	4.1	8.1	12.2	16.2	1.34 (39.63 mL)
0.005	0.005	5.8	11.6	17.4	23.2	1.91 (56.60 mL)
0.007	0.007	8.1	16.2	24.4	32.5	2.68 (79.26 mL)

Ground Application Rate Chart – Dilute (1) Part PermaSease™ 4-4 in (1) Part Mineral Oil						
Amounts to Use After Diluting 1 PermaSease™ 4-4 With 1 Parts Mineral Oil						
lbs. A.I. acre		Application Rates Fluid Ounces per Minute				Fluid Ounces and (milliliters) per acre
Permethrin	PBO	5 mph	10 mph	15 mph	20 mph	
0.001	0.001	2.3	4.6	7	9.3	0.77 (22.77 mL)
0.00175	0.00175	4.1	8.1	12.2	16.2	1.34 (39.63 mL)
0.0025	0.0025	5.8	11.6	17.4	23.2	1.91 (56.49 mL)
0.0035	0.0035	8.1	16.2	24.4	32.5	2.68 (79.26 mL)
0.005	0.005	11.6	23.2	34.8	46.4	3.83 (113.27 mL)
0.007	0.007	16.2	32.5	48.7	65.0	5.36 (158.52 mL)

Thermal Aerosol Fogging

Apply **PermaSease™ 4-4** diluted or undiluted with suitable thermal fogging equipment such as vehicle mounted or handheld thermal fog generators capable of making thermal fog applications. Use only well maintained and properly calibrated thermal fogging equipment to ensure optimum performance and effectiveness. If diluted, use a light mineral oil, or another suitable non-phytotoxic diluent, to reduce oil requirement and sludge buildup in equipment. Do not exceed the maximum rate of

0.007 lbs. of permethrin per acre. Apply **PermaSease™ 4-4** to deliver 0.001 to 0.007 lb. a.i. per acre. Droplet size of thermal fog will be very small usually in the 0.5 to 1.0 micron range. For best results, fog downwind by directing thermal fog into the air and allowing it to drift through areas with active mosquitoes or where mosquitoes find harborage. Do not thermal fog when winds exceed 10 mph. Do not fog wet foliage.

Vehicle Mounted: May be applied with vehicle mounted sprayers at speeds of 5 to 20 mph using a treatment swath width of 300 ft.

Portable or Hand Carried: For use with hand carried and/or portable thermal foggers, use a walking speed of 2 mph and a 50-foot swath.

Use as An Insect Barrier Treatment

For use in Non-Thermal ULV, motorized, portable, backpack, handheld, or vehicle mounted fogging equipment or fog type mist blower equipment, apply **PermaSease™ 4-4** with equipment adjusted to deliver ULV particles of 50 to 120 microns volume median diameter. **PermaSease™ 4-4** may be applied undiluted or diluted. If diluted, use a light mineral oil, or another suitable non-phytotoxic diluent. Do not apply more than 0.007 lbs. of permethrin per acre using an appropriate swath width based on the capabilities of your equipment, typically a 50ft swath width is used. Direct spray onto foliage at the perimeter of areas from which mosquitoes or flies are to be excluded or direct spray into harborage areas where adult mosquitoes or flies may be found. May be used to treat aggregation and harborage sites such as abandoned buildings, residential buildings, warehouses, storm drains, and underground drainage pipes where adult mosquitoes find harborage. When this product is applied as a barrier treatment, do not apply within 100 feet (30 meters) of lakes and streams.

AERIAL APPLICATION INSTRUCTIONS

PermaSease™ 4-4 may be applied diluted or undiluted at rates of 0.001 to 0.007 pounds of permethrin per acre by fixed wing or rotary aircraft that are capable of making an ULTRA LOW VOLUME (ULV) application. For fixed wing and rotary aircraft with flat fan or rotary nozzles, apply at a sufficient airspeed to deliver the appropriate amount of a.i./acre and to achieve the appropriate droplet range as prescribed by this label. Apply when wind speed is equal to or greater than 1 mph. In order to compensate for windy and meteorological conditions and ensure drift into the target area, aerial applications with aircraft equipped with Global Positioning Systems (GPS) and/or spray cloud drift optimization software is recommended.

Do not apply by fixed wing aircraft at a height less than 100 ft, or by helicopter at a height less than 75 feet unless specifically approved by the state or tribe based on public health needs.

Spray Droplet Size Calibration

For aerial applications made ≤ 200 ft above ground elevation: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns (Dv 0.5 < 60µm) and that 90% of the spray is contained in droplets smaller than 100 microns (Dv 0.9 < 100µm). For aerial applications made > 200 ft above ground elevation: Spray equipment must be adjusted so that the volume median diameter produced is less than 70 microns (Dv 0.5 < 70µm) and that 90% of the spray is contained in droplets smaller than 145 microns (Dv 0.9 < 145µm). 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, or 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.

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 Pest Control and the Florida Department of Agriculture and Consumer Services.

STORAGE AND DISPOSAL

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

Storage: Store product in its original labeled container in a cool, dry, locked place designated for such insecticides and out of reach of children. In case of spillage, soak up with absorbent material such as sawdust, or fullers 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 container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows:

For Containers equal to or less than 5 Gallons: 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 mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available. If recycling is not available then dispose of container in a sanitary landfill or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For Containers greater than 5 Gallons: 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. 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 back and forth several times. Turn the container over on its other end and tip back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Offer for recycling, if available. If recycling is not available then dispose of container in a sanitary landfill or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For Bulk Containers (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 the container into application equipment or mix tank. Fill the container about 10 percent full with mineral oil. Agitate vigorously or recirculate mineral oil with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing process two more times.

WARRANTY NOTICE

Read the entire Directions for Use and Warranty before using this product. By using this product, User or Buyer accepts the following warranty.

The Directions for Use of this product are believed to be adequate and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Unintended consequences may result because of unknown factors. All such risks shall be assumed by the User or Buyer.

ADAPCO LLC. is committed to providing high quality products. To the extent consistent with applicable law, ADAPCO LLC. makes no warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise that extend beyond statements on this label. To the extent consistent with applicable law, ADAPCO LLC., the Manufacturer, or the Seller shall not be liable for indirect, special, incidental or consequential damages. To the extent consistent with applicable law, the exclusive remedy of the User or Buyer shall not exceed the purchase price paid.

SECTION 1: IDENTIFICATION

Product Name: PERMASEASE® 4-4
Description: Insecticide
EPA Reg. No.: 86291-3-96263

Company Identification:
ADAPCO LLC.
550 Aero Lane
Sanford, FL 32771

Emergency Response Telephone Numbers

For Spills Call: 1-(800)-424-9300
For Medical Emergencies Call: 1-(866)-897-8050

SECTION 2: HAZARD IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200



Signal word: Danger

Hazard statements

May be fatal if swallowed and enters airways. Harmful if swallowed.
Harmful in contact with skin. Harmful if inhaled.

Precautionary statements

Prevention

Do not breathe mists. Wash hands thoroughly after handling. Avoid breathing mist and spray. Use only outdoors in a well-ventilated area. Wear protective gloves and clothes, eye, and face protection. Do not eat, drink, or smoke when using this product.

Response

If swallowed: Immediately call a poison center. Do NOT induce vomiting. Rinse mouth. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell. If on skin: Wash with plenty of water. Take off immediately all contaminated clothing and wash it before reuse.

Storage: Store locked up.

Disposal: Dispose of contents at approved chemical waste disposal facility. Dispose of empty containers after triple rinsing, or according to label directions, in regular waste (see section 13 for specific instructions).

Other hazards

90% of this mixture consists of ingredients of unknown acute toxicity.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:	CAS NO.	(% w/w)
Permethrin	52645-53-1	4.6%
Piperonyl Butoxide	51-03-6	4.6%
Aliphatic Petroleum Distillate	64741-89-5	90.8%

SECTION 4: FIRST AID MEASURES

FIRST AID

- If swallowed** 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 by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- 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 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 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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. **Hotline Number:** You may also contact SafetyCall® International (866) 897-8050 for emergency medical treatment information.

Note to Physician: Contains petroleum distillate-vomiting may cause aspiration hazard.

SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT: >230° F (>110° C)

AUTOIGNITION TEMPERATURE: N/A

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical, or ware fog

SPECIAL FIRE FIGHTING PROCEDURES: Wear full protective clothing and self-contained breathing apparatus. Evacuate non-essential personnel from the area to prevent exposure to fire, smoke, fumes, or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Smother to exclude air. Do not use water. Handle as an oil fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

NFPA HAZARD CLASSIFICATION: HEALTH FIRE REACTIVITY SPECIAL
 1 0 0 N/A

NFPA HAZARD RATING CODES: INSIGNIFICANT SLIGHT MODERATE HIGH EXTREME
 0 1 2 3 4

SPECIAL CODES: OX = oxidizer, SA = simple asphyxiant, ~~W~~ = reacts with water

SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: In case of spill or leakage, ventilate the area, wear chemical resistant gloves, and footwear. Retrieve and filter the liquid in some manner and use as directed on this label, or "soak-up" the liquid with absorbent material such as sawdust, soil, fuller's earth or, etc. Wear goggles with splash protection or face shield, rubber gloves (nitrile, neoprene, laminated, or Viton), rubber boots, long sleeves, and long pants to prevent contact with spilled product.

SMALL SPILLS: Cover spill with absorbent material, such as sand, sawdust, earth, etc.. Sweep up and place in an approved chemical waste container. Wash the spill area with water and detergent. Do not allow wash water into sewers or other bodies of water.

LARGE SPILLS: Contain spill and prevent it from reaching sewers or surface waters. Cover spill with absorbent material. Sweep up and place in an approved chemical waste container. Wash the spill area with water and detergent. Do not allow wash water into sewers or other bodies of water.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Do not contaminate water, food or feed by storage or disposal. Store upright at room temperatures. Do not expose to extreme temperatures. Store in well-ventilated, secure area, out of reach of children and animals. Do not store near food, beverages, or tobacco products. Prevent eating, drinking, tobacco use, and cosmetics application in areas where there is a potential for exposure to this product. Always wash thoroughly after handling. Do not contaminate water, food or feed by storage or handling. Store containers upright at room temperature. Avoid extreme temperatures.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENTS*:	CAS NO.	% WT	OSHA TWA	OSHA STEL	ACGIH TWA	ACGIH STEL	OTHER†
Permethrin	52645-53-1	4.6%	NE	NE	NE	NE	NE
Piperonyl Butoxide	51-03-6	4.6%	NE	NE	NE	NE	NE
Aliphatic Petroleum Distillate	64741-89-5	90.8%	NE	NE	NE	NE	NE

* All ingredients in quantities > 1.0 % (> 0.1 % for carcinogens or teratogens) that are potentially hazardous per OSHA definitions

† AIHA WEEL 8 hour TWA or NIOSH REL 8 hour TWA

N/A = not applicable NE = not established

ENGINEERING CONTROLS: 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.

EYE PROTECTION: Goggles for splash protection, or face shield.

SKIN PROTECTION: Some Materials that are chemical-resistant to this product are nitrile and neoprene. If you want more options, follow the instructions for category E on an EPA chemical-resistance category selection chart. Mixers, applicators, and other handlers must wear: Long-sleeve shirt and long pants; shoes plus socks; chemical-resistant gloves for all handlers (except for applicators using motorized ground equipment, pilots, and flaggers); chemical-resistant apron for mixers/loaders, persons cleaning equipment, and persons exposed to the concentrate. 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.

WORK HYGIENIC PRACTICES: User 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. 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	Very Light Yellow, Gardner 2
Physical State:	Liquid
Odor:	Very Faint Chemical Odor
Density:	0.862 g/cc @ 25° C
Flash Point:	> 230° F (>110° C)
Solubility:	Does not disperse in water
Viscosity:	19.87 CPS @ 25° C
pH:	4.05 (1% dispersion)
Stability:	Stable

SECTION 10: STABILITY AND REACTIVITY**Reactivity**

Thermal decomposition	No data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	No data available
Incompatible materials	Strong oxidizing agents
Hazardous decomposition Products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE ORAL EFFECTS: Oral LD50 (Rat): >500 to <5,000 mg./kg. (female) >5,000 mg./kg. (male)

ACUTE RESPIRATORY EFFECTS: Contains petroleum distillates, which create an aspiration hazard.

ACUTE DERMAL EFFECTS: Dermal LD50 (Rat): >2,000 mg/kg. Permethrin is a skin sensitizer in some individuals.

EYE EFFECTS: Minimally irritating

CARCINOGENICITY: Permethrin: A statistically significant increase of lung and liver tumors was observed in female mice receiving diets containing 375 and 750 mg/kg/day over 85 weeks. Piperonyl Butoxide: Marginally higher incidences of benign liver tumors in mice were observed following lifetime high dose exposures. The significance of this observation is questionable and under review. The doses at which tumors were observed greatly exceeded human dietary intake. At anticipated dietary exposure levels, it is highly unlikely that piperonyl butoxide would result in carcinogenic effects. IARC has also concluded that there is no evidence for the carcinogenicity of white oils when administered by routes other than by interperitoneal injection. The solvent is not carcinogenic according to the OSHA Hazard Communication Standard.

TERATOGENICITY (birth defects): Permethrin and Piperonyl Butoxide were not teratogenic when tested in rats.

REPRODUCTIVE TOXICITY: Permethrin and Piperonyl Butoxide were not reproductive toxins when tested in rats.

MUTAGENICITY (genetic effects): Permethrin and Piperonyl Butoxide did not produce any mutagenic effects when tested in the Ames test.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to aquatic organisms, including fish and invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash waters.

Under some conditions, it may also have a potential for transport into surface water runoff (primarily adsorbed to suspended soil particles), for several months or more after application. These include poorly drained or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, and areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlying tile drainage systems that drain to surface waters.

Bee Warning: 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 on blooming crops or weeds while bees are actively visiting the treatment areas, 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.

SECTION 13: DISPOSAL CONSIDERATIONS

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: Triple rinse (or equivalent) promptly after emptying. Do not reuse or refill this container. Offer for recycling if available. If recycling is not available then dispose of container in a sanitary landfill or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Follow directions on product label or booklet.

RCRA INFORMATION: Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State, and local laws and are the user's responsibility. RCRA classification may apply. When and if this material is determined to be a waste, if discarded, this material may carry RCRA waste code(s) **NON-RCRA**. State and local laws may vary and must be considered.

SECTION 14: TRANSPORTATION INFORMATION

49CFR Not dangerous goods / not hazardous material

IMDG

UN number	3082
Class	9
Packing group	III
Marine Pollutant	YES

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(PERMETHRIN, PIPERONYL BUTOXIDE SOLUTION)

IATA

UN number 3082
Class 9
Packing group III
Marine Pollutant YES
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(PERMETHRIN, PIPERONYL BUTOXIDE SOLUTION)

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

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

SECTION 15: REGULATORY INFORMATION**EPA/FIFRA Information:**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

CAUTION: Harmful if swallowed, inhaled, or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. While using or handling this product wear long sleeved shirt and long pants, socks, and shoes. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Remove contaminated clothing and wash clothing before reuse.

SARA TITLE III: Section 311/312: Acute Health Hazard – Yes; Chronic Health Hazard – Yes; Fire Hazard – No; Sudden release of pressure hazard – No; Reactivity hazard – No; Section 313 chemicals: Permethrin (4.6%) (CAS # 52645-53-1), Piperonyl Butoxide (4.6%) (CAS # 51-03-6)

CERCLA: N/A

INDIVIDUAL STATES: N/A None.

SECTION 16: OTHER INFORMATION

SDS Date: August 18, 2020

This document is prepared pursuant to the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)), revised in 2012. In addition, other substances not “Hazardous” per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state, and local laws and regulations. See SDS for health and safety information.