

PermaSeaseTM UC 20-20

Controls adult mosquitoes (including organophosphate resistant mosquitoes), midges (biting and non-biting) and blackflies.

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.

- Quick knockdown and effective control of target insects.
- ULV, thermal, and barrier applications using ground and aerial equipment for control of adult mosquitoes and other biting flies.
- For surface and barrier applications using handheld equipment.
- May be applied undiluted or diluted with water or oil.
- For ULV applications at rates up to 0.007 lbs. a.i. per acre.
- For barrier application at rates up to 0.1 lbs. a.i. per acre.
- Can be used with injector mixing systems or other insecticide mixing systems.
- For use in residential mosquito misting systems.

ACTIVE INGREDIENTS:

*Permethrin:20.6%

**Piperonyl Butoxide Technical:20.6%

OTHER INGREDIENTS:58.8%

TOTAL:100.0%

*(3-phenoxyphenyl) methyl (+/-) Cis/ trans 3-(2,2-dichloroethenyl)2,2-Dimethyl cyclopropane carboxylate. Cis/trans ratio: min. 35% (+/-) cis and max. 65% (+/-) trans.

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

Contains 1.75 pounds of Permethrin and 1.75

pounds of Piperonyl Butoxide per gallon.

KEEP OUT OF REACH OF CHILDREN CAUTION

See Inside Booklet for Additional Precautionary Statements.

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

(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:

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 eye. 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 Poison Control Center at 800-222-1222 for emergency medical treatment information.

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



PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

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

Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are barrier laminate, nitrile rubber greater or equal to 14 mils or neoprene rubber greater or equal to 14 mils. If you want more options, follow the instructions for category E on an EPA chemical-resistance category selection chart.

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

- 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.

Applicators using ULV cold foggers or fog/mist generators in outdoor spaces must wear:

- Long-sleeve shirt and long pants,
- Shoes plus socks, and
- 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 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.

Engineering Controls

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticide [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 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.

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 foraging 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.

Physical and 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. Except when applying as a wide area mosquito adulticide application, only protected handlers may be in the area during application. Except when applying as a wide area mosquito adulticide application, do not apply this product in a way that will contact workers or other persons, either directly or through drift.

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

HOW TO APPLY AND WHERE TO USE

PermaSease™ UC 20-20 is designed for application as an Ultra-Low Volume (ULV) or thermal aerosol to control adult mosquitoes and flies of nuisance, public health or disease vector importance in areas such as but not limited to: residential areas, industrial areas, commercial areas, urban areas, parks, campgrounds, woodlands, athletic fields, golf courses, playgrounds, recreational areas, overgrown waste areas, roadsides, corrals, feedlots, animal confinements/houses, swine lots and zoos and other areas, where adult mosquitoes and flies may be found.

PermaSease™ UC 20-20 is recommended for application with ULV cold aerosol generators, mist-blowers, backpack sprayers, or handheld sprayers. Mist-blowers, backpack sprayers, handheld sprayers and low-pressure hand sprayers may be used for barrier or surface applications.

For best results treat when mosquitoes or insects are most active and weather conditions are conducive to keeping the fog near the ground e.g. cool temperatures, and consistent wind speeds are not greater, than 10 mph. Applications during cool hours of night or early morning are usually preferable.

Do not retreat site more than once in 3 days. Do not exceed 25 applications at 0.007 lbs. permethrin per acre per application or 0.025 lbs. PBO per acre per application, or 0.18 lbs. of permethrin per acre per season or 2.0 lbs. PBO per acre per year. When targeting *Aedes taeniorhynchus* and other difficult species applications of PBO may be made up to 0.08 lbs. PBO per acre. More frequent treatments may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

PermaSease™ UC 20-20 can be applied over specific growing crops and range grasses prior to harvest for the control of adult mosquitoes and biting flies within or adjacent to these areas. Application can only be made where the following crops are present:

Almonds	Celery	Leafy vegetables (except Brassica)	Pepper, bell
Apples	Cherries		Range grasses
Broccoli	Corn, fodder	Lettuce, head	Soybeans
Brussels Sprouts	Corn, forage	Mushrooms	Tomatoes
Cabbage	Corn, grain	Onions, dry bulb	Vegetables, cucurbit
Cauliflower	Eggplant	Peaches	
		Pears	Walnuts

Do not allow spray treatment to drift on pastureland, cropland, (other than crops listed) or water supplies. In treatment of corrals, feedlots, animal confinements/houses, swine lots and zoos, cover any exposed drinking water, drinking fountains and animal feed before application.

PermaSease™ UC 20-20 provides effective control of adult mosquitoes, black flies, gnats, biting and non-biting midges, stable flies, horse flies, deer flies, sheep flies, horn and heel flies, and nuisance flying insects such as houseflies.

Air temperatures should be greater than 50° F when conducting all types of applications.

GROUND APPLICATION

Vehicle-Mounted ULV Cold Aerosol Generators (Cold Fog)

Apply through non-thermal ULV application equipment and base all acreage calculations on the equipment manufacturers recommended swath width. Spray equipment must be adjusted so the volume median diameter or mass median diameter is less than 30 microns (Dv 0.5 < 30 µm) and that 90% of the spray is contained in droplets smaller than 48 microns (Dv 0.9 < 48 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 rates(s) are properly calibrated. Apply at a rate not to exceed 0.007 pounds of permethrin per acre. An optimum swath is created when **PermaSease™ UC 20-20** is applied from a truck being driven perpendicular to the wind direction. Direct the spray head of the equipment to ensure an optimum distribution of the spray cloud throughout the area. For best results, apply when insects are most active and meteorological conditions are conducive to keeping the spray cloud near the ground. An inversion of air temperatures and a light breeze of approximately 1 to 3 mph is preferable. During applications consistent ground wind speeds should not exceed 10 mph. Application of this product during cooler hours of the night or early morning is recommended.

PermaSease™ UC 20-20 may be applied through all ULV Cold Aerosol Generators, or other similar equipment designed for non-thermal ULV aerosol applications. The desired application rate may be obtained from the chart below or by altering the dilution rate of **PermaSease™ UC 20-20**, the flow rate of the insecticide from the application equipment and the vehicle speed. Some examples are provided in the following chart. When an alternate rate is required, adjust the flow rate, accordingly, provided the droplet size and spectrum remain within the label specifications.

FLOW RATE (Fluid Ounces Per Minute)						
Dilutions Based on a 15 Gallon Tank*						
Application Rate (Pounds of a.i./Acre)	Vehicle Speed (mph)	Undiluted	Diluted 1: 3	Diluted 1:4.5	Diluted 1:6.5	Diluted 1: 9
0.0015	10	0.7	2.8	3.7	5.25	6.7
	15	1.05	4.2	5.5	7.88	10.0
	20	1.4	5.6	7.3	10.50	14.0
0.0035	10	1.55	6.2	8.6	11.7	15.6
	15	2.35	9.3	12.8	17.5	23.3
	20	3.1	12.5	17.2	23.4	--
0.007	10	3.1	12.4	17.0	23.2	--
	15	4.65	18.6	25.5	--	--
	20	6.2	24.7	--	--	--

*Dilution Instructions: Fill tank with the recommended amount of water, start agitation then add the correct amount of **PermaSease™ UC 20-20**. The use of metering pumps, injector systems or other mixing systems is optional. Note: When using oil as a diluent, agitate well before use. Where dense vegetation is present, use higher rates of application and/or a slower speed for best results. All applications should be conducted when temperatures are greater than 50° F.

Backpack or Handheld Sprayer Application

Apply through non-thermal ULV application equipment and base acreage calculations on a 300-foot swath. To apply undiluted at 0.007 pounds of permethrin per acre adjust equipment to an output rate of 1.24 ounces per minute and walk at 4 mph. To apply 0.0035 pounds of permethrin per acre, dilute 1-part **PermaSease™ UC 20-20** with 5 parts of diluent and apply at a rate of 3.8 ounces per minute and walk at 4 mph.

Thermal Aerosol Application

For use in truck-mounted, handheld or other thermal fogging equipment. Spray equipment must be adjusted so the volume median diameter or mass median diameter is less than 30 microns (Dv 0.5 < 30 µm) and that 90% of the spray is contained in droplets smaller than 48 microns (Dv 0.9 < 48 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 product acceptable droplet size

spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rates(s) are properly calibrated. Apply this product mixed with water or oil at a rate not to exceed 0.007 lbs. per acre. Base acreage calculations on a 300 feet swath. For best results, direct the thermal fog into and allow to drift through areas where adult mosquitoes are found.

Barrier Applications

To exclude and control resting or flying adult mosquitoes in areas such as animal quarters, roadsides, urban areas, residential areas, commercial areas, industrial areas, golf courses, parks, recreational areas, tire piles and all public areas where adult mosquitoes occur or find harborage. May be used to treat aggregation and harborage areas such as the perimeter of residential buildings, commercial buildings, storage buildings, crawl spaces, transport trailers, abandoned or uninhabited buildings and other areas where adult mosquitoes find harborage.

When this product is applied as a barrier application using low pressure hand sprayers, hydraulic sprayers or ground ULV equipment, do not apply within 100 feet (30 meters) of lakes and streams.

To apply this product using low pressure hand sprayers or other similar equipment, for the control of mosquitoes on resting or aggregation surfaces, mix 0.126 oz. (3.73 ml) in one gallon of water and apply sufficient spray to dampen the surface - approximately 700-750 square feet of treated area. Use equipment that is capable of delivering an even distribution of the labeled rate over the treatment area. For application using backpack or truck-mounted mist-blower equipment apply **PermaSease™ UC 20-20** undiluted at a rate not to exceed 7.3 oz. per acre. If diluted apply at a rate not to exceed 0.1 lbs. permethrin a.i. per acre. Diluted or undiluted applications may be made onto foliage at the perimeter of areas such as recreational areas, parks or golf courses from which mosquitoes or flies are to be excluded. Applications may be directed into harborage areas or other resting areas where adult mosquitoes or flies may be found.

Urban ULV Mosquito Control Applications

For control of resting or flying adult mosquitoes, biting flies and biting midges in harborage areas such as but not limited to utility tunnels, sewers, storm drains and catch basins, pipe tunnels, basements, underground passages, parking decks, crawl spaces under buildings, abandoned buildings or uninhabited buildings. Apply **PermaSease™ UC 20-20** diluted or undiluted using mechanical foggers, hand-held or truck mounted ULV equipment, thermal foggers or other spray equipment suitable for this type of application. **PermaSease™ UC 20-20** may be applied at rates up to but not exceeding 0.007 lbs. permethrin per acre. 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.

AERIAL APPLICATION

Apply **PermaSease™ UC 20-20** either diluted or undiluted at rates up to 0.007 lbs. Permethrin/PBO per acre by fixed wing or rotary aircraft equipped with a spraying system capable of making a ULV application. For aerial applications of **PermaSease™ UC 20-20**, use ULV equipment and nozzles such as rotary atomizers or similar spray equipment. Spray equipment must be adjusted so 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 100 microns (Dv 0.9 < 115 µm). 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 rates(s) are properly calibrated. The effects of flight speed and, for non-rotary nozzles, nozzle angle on the droplet size spectrum must be considered.

Aerial application made at >200 feet above ground elevation: Spray equipment must be adjusted so that the volume median diameter product is less than 70 microns (Dv 0.5 < 70 µm) and that 90% of the spray is contained in droplets smaller than 145 microns (Dv 0.9 < 145 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.

Aerial application of **PermaSease™ UC 20-20** shall be made at altitudes ranging from 100 feet to 300 feet. Do not apply when ground wind speed equals 0 MPH or when ground wind exceeds 10 MPH. Aerial applications of **PermaSease™ UC 20-20** shall only be made when recommended by public health officials and trained personnel of mosquito abatement districts and other mosquito control programs. To ensure best results applications shall be made when temperatures are greater than 50° F.

For best results, apply **PermaSease™ UC 20-20** when insects are most active and meteorological conditions are conducive to keeping the spray cloud near the ground. Aerial applications using aircraft equipped with global positioning systems (GPS) may be needed to compensate for windy conditions and to ensure drift into target areas.

In Florida: Do not apply by aircraft unless approved by the Florida Department of Agriculture and Consumer Services.

DIRECTIONS FOR USE IN OUTDOOR RESIDENTIAL MISTING SYSTEMS

When using this product, installers and service technicians must comply with the license, certification, or registration requirements of the state(s), tribe(s), or local authority(ies) where they are installed.

Do not apply this pesticide when people, pets, and/ or food are present.

Do not make applications during rain.

Do not use in an evaporative cooling system.

Direct nozzles to spray towards the target area and away from swimming pools, water bodies, or eating and cooking areas.

Do not set nozzles to direct mist near outside air condition systems or other home air intakes.

If used in a system with a reservoir tank for the end use dilution, the system reservoir tank must be locked. Securely attach the end use pesticide label and a dilution statement to the system reservoir tank in a weather protected area or plastic sleeve. The dilution statement must be phrased as follows. This container holds __ parts **PermaSease™ UC 20-20** to __ parts water.

If used in a direct injection system, the pesticide container must be locked. Securely attach the end use label to the pesticide container in a weather protected area or plastic sleeve.

If the system works on an automatic timer, set the timing for application when people, pets, and/ or food are unlikely to be present.

If the system works when a person operates a remote activation device, then application of this pesticide when people, pets, and/ or food are present is prohibited.

Contact the system manufacturer for guidance or assistance to ensure compliance with the following requirement:

This product must only be used in systems that have been calibrated to apply no more than the maximum application rate of 0.05 grams (0.00011 lbs permethrin) per 1000 cubic feet per day. This is the equivalent of 0.24 ml of product per 1000 cubic feet per day.

DILUTION TABLE FOR AUTOMATIC MISTING SYSTEMS		
Tank size (gallons)	Fluid ounces concentrate per gallon of water	Fluid ounces of concentrate to add to tank
1	For 1:100 dilution:	0.58
15		8.5
20		11.5
30		17.5
55		32
1	For 1:55 dilution:	1.16
15		17
20		23
30		35
55		64

TO REFILL PARTIALLY REFILLED TANK: Determine the amount of additional solution (in gallons) required to re-fill the tank. Multiply the number of gallons required to refill the tank times 1.16 to determine the amount of this concentrate to add when refilling (to achieve 0.09% synergized permethrin solution).

STORAGE AND DISPOSAL

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

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

Pesticide Disposal: Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of at or by an approved waste disposal facility.

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

Containers 5 gallons or less: Empty the remaining contents into application equipment and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Once cleaned, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill or by other procedures approved by State and local authorities. Do not cut or weld metal containers.

Containers larger than 5 gallons: Empty the remaining contents into application equipment. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Once cleaned, offer for recycling or reconditioning if appropriate.

Pressure rinse as follows (all sizes): Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable container: Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

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

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

Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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

WARRANTY STATEMENT

"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

Precision Control Technology Inc. is committed to providing high quality products. To the extent consistent with applicable law, Precision Control Technology Inc. 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, Precision Control Technology Inc., 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."

SAFETY DATA SHEET

PermaSease™ UC 20-20

1. IDENTIFICATION

Product name: **PermaSease™ UC 20-20**
Product type: Insecticide for effective control of Adult Mosquitoes
EPA Registration No.: 53883-274-86291
Chemical name of active ingredient(s): **Permethrin:** 3-(Phenoxyphenyl)methyl(±)cis-trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate
Piperonyl Butoxide: 5-[[2-(2-butoxyethoxy) ethoxy]methyl]-6-propyl-1,3-benzodioxole
Manufacturer/Registrant: Precision Control Technology, Inc.
550 Aero Lane
Sanford, FL 32771
For fire, spill, and/or leak emergencies, contact Chemtrec: Phone: 1-800-424-9300
For medical emergencies and health and safety inquiries, contact Safety Call: Phone: 1-866-897-8050
Poison Control Center: Phone: 1-800-222-1222

2. HAZARDS IDENTIFICATIONS

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

Acute Toxicity:

Exposure Route	Acute oral	Acute dermal	Acute inhalation	Eye irritation	Skin irritation	Skin Sensitization
Category	4	NC	4	2B	2	1B

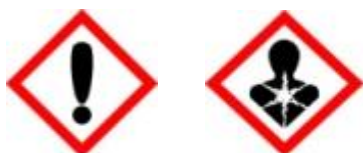
NC: Not classified

SIGNAL WORD: WARNING

HAZARD STATEMENTS:

- Harmful if swallowed
- Harmful if inhaled
- Causes eye irritation
- Causes skin irritation
- May cause allergic skin reaction
- Combustible liquid
- Suspected of causing cancer (Carcinogenicity- Category 2)

PICTOGRAMS:



PRECAUTIONARY STATEMENTS:

- Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed: Immediately call a poison center or a doctor. Rinse mouth.
- Avoid breathing mist, vapors or spray. Use only outdoors or in a well-ventilated area. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell.

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- Wash hands thoroughly after handling. Wear protective gloves. If on skin, wash with plenty of water. If skin irritation occurs: Get medical advice. Take off contaminated clothing and wash it before reuse.
- Wash hands thoroughly after handling. 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.
- Avoid breathing mist, vapors and spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. If on skin: wash with plenty of water. If skin irritation or rash occurs: get medical advice. Take off contaminated clothing and wash it before reuse.
- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Keep away from flames and hot surfaces. No smoking. Wear protective gloves and eye protection. In case of Fire: Use water fog, CO₂, foam, or dry chemical to extinguish. Store in well ventilated place. Keep Cool.

PHYSICAL AND CHEMICAL HAZARDS: Combustible. Do not use or store near heat or open flame. GHS classification Category 4

Contact Safety Call® International for emergency medical treatment at (866) 897-8050.

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA TWA	ACGIH STEL	OTHER	NTP/IARC/OSHA (Carcinogen)
Permethrin*	52645-53-1	20.6	NE	NE	NA	IARC – 3**
Piperonyl Butoxide	51-03-6	20.6	NE	NE	NA	IARC – 3**
di-Limonene	5989-27-5	15 - 20	30ppm	30 ppm	NA	IARC – 3**

NE= Not established; NA= Not applicable

* *cis/trans* ratio: minimum 35% (±) *cis* and maximum 65% *trans*

**IARC Group 3: The agent (mixture or exposure circumstance) is unclassifiable as to carcinogenicity to humans.

4. FIRST AID MEASURES

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none">• Immediately Call a poison control center or doctor.• Do not induce vomiting unless told to do so by the poison control center or doctor.• Have person sip a glass of water if able to swallow.• Do not give anything by mouth to an unconscious person.
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.• 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. For information on this product, contact the National Pesticide Information Center, 1-800-858-7378, Monday-Friday, 7:30 AM-3:30 PM PST. You may also contact the National Poison Control Center, 1-800-222-1222, day or night, for emergency medical treatment information or SafetyCall® at (866) 897-8050. FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300.	

5. FIRE FIGHTING MEASURES

FLASH POINT: > 141°F (61°C) (TCC)

FLAMMABLE LIMITS: Not determined

EXTINGUISHING MEDIA: Water fog, CO₂, foam, dry chemical. Soft stream water of fog only if necessary.

UNUSUAL FIRE & EXPLOSION HAZARDS: Pesticide fires have potential to emit hazardous decomposition products.

FIRE-FIGHTING PROCEDURES: Foam fire-extinguishing system is preferred because uncontrolled water can spread possible contamination. Do not allow fire-fighting water to escape into waterways or sewers. Toxic irritating gases can be formed.

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HAZARDOUS DECOMPOSITION PRODUCTS: Under fire conditions hydrogen chloride, oxides of chlorine, carbon dioxide, carbon monoxide, and asphyxiants can be formed.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILLS OR LEAKS: Wear protective clothing as described in Section 8 of this MSDS. Absorb liquid with material such as clay, sand, sawdust, or dirt. Sweep up and place in a suitable container for disposal and label the contents. Area can be washed down with a suitable solution of bleach or soda ash and an appropriate alcohol (methanol, ethanol, or isopropanol). Follow this by washing with a strong soap and water solution. Absorb any excess liquid as indicated above, and add to the disposal container. Keep product, contaminated materials and wash water out of streams and sewers. Wash exposed body areas thoroughly after handling.

7. HANDLING AND STORAGE

Do not contaminate water, food, or feed by storage or disposal. Do not use or store near heat or open flame.

PRECAUTIONS TO BE TAKEN IN HANDLING: Avoid dermal contact. Take precautions to avoid damaging containers. Avoid cross contamination. Always wash hands thoroughly after handling pesticides and before eating, drinking, or smoking. Clean water should be available to rinse eyes and skin in case of chemical exposure.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store upright at room temperature. Avoid exposure to extreme temperatures. Store in a locked area out of reach of children and domestic animals. In case of spillage or leakages, soda up with an absorbent material such as same, sawdust, earth, Fuller's earth, etc. Dispose of with chemical waste.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

SKIN PROTECTION: Wear coveralls or long-sleeved shirt and long pants, chemical protective gloves (nitrile, neoprene, or Viton® brand), head covering and shoes plus socks.

EYE PROTECTION: Protective eyewear or chemical safety glasses with side shields or chemical goggles when working in non-ventilated spaces.

RESPIRATOR REQUIREMENTS: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if the exposure guideline is exceeded, use an air-purifying respirator approved for pesticides (U.S. NIOSH/MSHA, EU CEN, or comparable certification organization).

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline. Ventilate all transport vehicles prior to unloading.

WORK HYGIENIC PRACTICES:

Clean water should be available to rinse eyes and skin in case of chemical exposure. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

ADDITIONAL PROTECTIVE MEASURES:

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

USER SAFETY RECOMMENDATIONS:

Users Should:

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

EXPOSURE GUIDELINES: Refer to Section 3.

ENGINEERING CONTROLS: Use only in adequately ventilated areas.

SAFETY DATA SHEET

PermaSease™ UC 20-20

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear yellow liquid

ODOR: Citrus or Orange

pH: 4.25 – 5.75

FLASH POINT: > 141°F (61°C) (TCC)

SPECIFIC GRAVITY: 0.99 – 1.01 g/ml

BULK DENSITY: 8.26 - 8.43 lbs/gal

SOLUBILITY IN WATER: Does not disperse in water

VISCOSITY: 600 cps

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

CONDITIONS AND MATERIALS TO AVOID: Strong oxidizers. Avoid heating above 140° F (60° C). Contains a petroleum distillate solvent which can burn.

HAZARDOUS DECOMPOSITION PRODUCTS: Under fire conditions hydrogen chloride, oxides of chlorine, carbon dioxide, carbon monoxide, and asphyxiants can be formed.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

Acute Oral LD₅₀ (Rat): >500 mg/kg to ≤5,000 mg/kg

Acute Dermal LD₅₀ (Rabbit): >2,000 mg/kg

Acute Inhalation LC₅₀ (Rat): >2.06 mg/L/4 hr

Eye Irritation: Mild or slightly irritating

Skin Irritation: Mild or slightly irritating

Dermal Sensitization: Positive - Permethrin is a skin sensitizer in some individuals.

ROUTES OF EXPOSURE: Skin, eye, inhalation, ingestion.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Excessive exposure may produce effects on the nervous system such as sensitivity to touch and sound, tremors, abnormal movement, and clonic convulsions. Long-term studies with permethrin in laboratory animal resulted in increased liver and kidney weights, induction of the liver microsomal drug metabolizing enzyme system, and histopathological changes in the lungs and liver. Long-term studies with piperonyl butoxide indicated increased organ weights in the liver, kidney, and adrenal glands.

CHRONIC TOXICITY:

Permethrin caused neurobehavioral effects (e.g., tremors) and/or organ effects (liver, lung, and kidney) in chronic studies in rats, mice and dogs.

Piperonyl butoxide caused decreased body weights and/or increased organ weights (liver, kidney, adrenal) in chronic studies in rats and dogs.

CARCINOGENICITY:

Permethrin has low oncogenic potential in mice and no oncogenic potential in rats, therefore, EPA has concluded the likelihood of oncogenicity effects in humans from permethrin to be extremely low or nonexistent.

Piperonyl butoxide gave no evidence of a carcinogenic potential in a lifetime feeding study in rats. In an oncogenicity study in mice, piperonyl butoxide caused an increased incidence of liver tumors. The US EPA has categorized piperonyl butoxide as a group C carcinogen, possible human carcinogen, based on limited evidence of cancer in laboratory animals.

REPRODUCTIVE TOXICITY:

Permethrin was not a reproductive toxicant in multi-generation reproduction studies in rats.

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Piperonyl butoxide was not a reproductive toxicant in a two-generation study in rats.

DEVELOPMENTAL TOXICITY:

Permethrin was not a primary developmental toxicant in rats, mice and rabbits. Developmental effects (e.g., decreased fetal weights) were observed in rats and rabbits but were considered secondary to maternal toxicity.

Piperonyl butoxide did not cause developmental, embryotoxic or teratogenic effects in developmental toxicity studies in rats and rabbits.

NEUROTOXICITY:

Permethrin caused neurobehavioral effects (e.g., tremors) in an acute and subchronic neurotoxicity screening study in rats without any correlating neuropathological changes.

Piperonyl butoxide did not demonstrate the potential to cause neurotoxicity in standard toxicity studies submitted to the Agency. EPA has concluded that there is not a concern for neurotoxicity resulting from exposure to piperonyl butoxide.

MUTAGENICITY:

Permethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo mutagenicity studies. Piperonyl butoxide does not have significant potential for mutagenicity based on sufficient evidence.

12. ECOLOGICAL INFORMATION

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.

Bee Warning: This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply to blooming crops or weeds while bees are visiting the treatment areas

BIOACCUMULATION (Permethrin & Piperonyl butoxide): Will not bioaccumulate.

ENVIRONMENTAL FATE

Permethrin: The average half-life of permethrin in aerobic soils is 39.5 days, with a range from 11.6 to 113 days. Permethrin binds tightly to soil and is broken down primarily by microorganisms, but also by photolysis.

Piperonyl Butoxide: Reported to have a maximum half-life of 4.3 days in soil and from 0.55 to 1.64 days in aqueous environments. Gravitational settling removes piperonyl butoxide released in the atmosphere as an aerosol. Gaseous piperonyl butoxide degrades in the atmosphere with an estimated half-life of 3.4 hours.

ECOTOXICOLOGICAL INFORMATION

Permethrin: (EPA Ecotox Database)

Rain trout LC₅₀ (96-h): 0.62 µg/L

Bluegill LC₅₀ (96-h): 0.79 µg/L

Bobwhite quail LD₅₀ (8-day): 5,200 ppm

Piperonyl Butoxide: (Based on Piperonyl Butoxide Technical)

Rainbow trout LC₅₀ (96-h): 6.12 ppm

Bluegill Sunfish LC₅₀ (96-h): 5.37 ppm

Bobwhite Quail LD₅₀ (Oral): > 2,250 mg/kg

Bobwhite Quail LC₅₀ (5-day dietary): > 5,620 ppm

Mallard Duck LC₅₀ (5-d dietary): > 5,620 ppm

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Do not contaminate water, food, or feed by storage or disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Dispose of excess or waste pesticide by use according to label directions, or contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

SAFETY DATA SHEET

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CONTAINER DISPOSAL: Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

UN2319, Terpene Hydrocarbon Solution, (Permethrin 20.6%), Class 3, PG III, Marine Pollutant

INTERNATIONAL TRANSPORTATION:

IMO (vessel): UN2319, Terpene Hydrocarbons, N.O.S. (D-Limonene, Permethrin 20.6%), Class 3, PG III, marine pollutant

IATA (air): UN2319, Terpene Hydrocarbons, N.O.S. (D-Limonene, Permethrin 20.6%), Class 3, PG III

15. REGULATORY INFORMATION

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 for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

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

SARA TITLE III CLASSIFICATION:

Section 302: Not applicable.

Section 311/312: Acute health hazard (immediate)

Chronic health hazard (delayed)

Section 313: Permethrin (20.6%) CAS #:52645-53-1

Piperonyl Butoxide (20.6%) CAS #: 51-03-6

CA PROPOSITION 65: Not applicable

CERCLA RQ: Not applicable.

RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

HAZARD RATINGS	NFPA	HMIS	
HEALTH:	1	1	0 MINIMAL
FLAMMABILITY:	2	2	1 SLIGHT
REACTIVITY:	0	0	2 MODERATE
			3 HIGH
			4 SEVERE

MSDS DATE: 07-05-2013. Supersedes version dated 08-09-2011. Changes made to all sections.

The information and recommendations contained herein are based upon data believed to be correct. However, no warranty of any kind, expressed or implied, is made with respect to the information contained herein.