



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Menace[®] 7.9% Flowable
EPA Reg. No.: 228-451
Product Type: Insecticide

Company Name: Nufarm Americas Inc.
 11901 S. Austin Avenue
 Alsip, IL 60803
 1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
 Call CHEMTREC Day or Night: 1-800-424-9300
 For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

PHYSICAL HAZARDS:

None

HEALTH HAZARDS:

Acute toxicity – Oral	Category 4
Acute toxicity – Inhalation	Category 4
Skin corrosion/irritation	Category 2
Eye damage/irritation	Category 2B

ENVIRONMENTAL HAZARDS:

Hazardous to the aquatic environment, acute hazard	Category 1
--	------------

SIGNAL WORD:

WARNING

HAZARD STATEMENTS:

Harmful if swallowed. Harmful if inhaled. Causes skin irritation. Causes eye irritation. Very toxic to aquatic life.



PRECAUTIONARY STATEMENTS

Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves (such as Natural Rubber, Selection Category A). If swallowed: Rinse mouth.

If on skin: Wash with plenty of water. Specific treatment: see product label and Section 4 for First Aid instructions. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

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.

Avoid breathing mist/vapors/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/doctor if you feel unwell. See product label and Section 4 for emergency medical advice/attention.

Dispose of contents/container in accordance with State and Federal Regulations. See product label for disposal instructions.

Avoid releases to the environment. Collect spillage.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Bifenthrin	82657-04-3	7.50 – 8.30
Propylene glycol	57-55-6	9.50 – 10.50
Other ingredients	Trade Secret	Trade Secret

Synonyms: (2-methyl[1,1'-biphenyl]-3-yl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

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 do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

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 further treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 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 to 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.

Most Important symptoms/effects, acute and delayed: Brief skin exposure may cause moderate irritation. Prolonged exposure or overexposure may cause paresthesia (rash, tingling, numb, or burning sensation) which is characteristic of overexposure to the skin to pyrethroid insecticides. Dermal absorption is typically minimal. Systemic intoxication resulting from overexposure to the skin is not expected. Eye exposure may cause mild irritation.

Indication of Immediate medical attention and special treatment if needed, if necessary: Seek immediate medical attention for overexposure resulting in stupor, rapid breathing and heartbeat, profuse sweating and/or seizures

Note to Physician: This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils or alcohol may increase absorption and so should be avoided.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: Slightly combustible, and may support combustion at elevated temperatures. If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as hydrogen chloride, hydrogen fluoride, carbon oxides and unidentified organic compounds.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Clean-Up and Disposal: Avoid creation of dusty conditions. If dry, sweep or scoop up material and place into container for disposal. If wet, pump any free liquid into an appropriate closed container. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING:

Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE:

Keep out of reach of children and animals, Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. **DO NOT** put concentrate or dilute material into food or drink container. In case of spill, avoid contact, isolate area, and keep out animals and unprotected persons. Confine spills. Call CHEMTREC: 1-800-424-9300.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

Eye/Face Protection: To avoid contact with eyes or when handlers are working in a non-ventilated space, wear chemical goggles or safety glasses with front, brow and temple protection. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, shoes, socks and chemical-resistant gloves. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: If vapors or mists exceed acceptable levels or when working in a non-ventilated space, wear a NIOSH approved respirator with any R, P or HE filter or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P, or HE prefilter.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) Do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Bifenthrin	NE	NE	NE	NE	
Propylene Glycol	10 (WEEL)	NE	NE	NE	mg/m ³
Other Ingredients	NE	NE	NE	NE	

WEEL = AIHA Workplace Environmental Exposure level

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white colored liquid
Odor:	Faint odor
Odor threshold:	No data available
pH:	6-8 (1% Solution)
Melting point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.017 g/ml
Solubility(ies):	Dispersible
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	573.897 cSt (20°C); 381.811 cSt (40° C)
VOC Emission Potential (%)	9.76

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Stable under normal conditions of use.

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Incompatible Materials: Potassium permanganate..

Hazardous Decomposition Products: Under fire conditions, may produce gases such as hydrogen chloride, hydrogen fluoride, carbon oxides and unidentified organic compounds.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, eye and skin contact.

Symptoms of Exposure: Skin contact with bifenthrin causes slight irritation. Overexposure to the skin may produce skin sensations such as rash, numbness, burning or tingling. These skin sensations are reversible and usually subside within 12 hours. Causes mild eye irritation. Systemic effects are not expected from skin exposure. Overexposure (inhalation or ingestion) may result in tremors, convulsions, incoordination, decreased locomotion and nasal discharge, including bleeding.

Delayed, immediate and chronic effects of exposure: None presently known.

Toxicological Data:

Oral, Rat LD₅₀: 975.5 mg/kg

Dermal, Rat or Rabbit LD₅₀: >5,000 mg/kg

Inhalation, Rat 4-hr LC₅₀: >2.04 mg/l (No mortalities at highest dose tested)

Eye Irritation, Rabbit: Mildly irritating

Skin Irritation, Rabbit: Slightly irritating (PDHII = >0 - 2.0)

Skin Sensitization, Guinea Pig: Not considered a sensitizer

Subchronic (Target Organ) Effects: Ingestion of large amounts of propylene glycol has resulted in symptoms of reversible central nervous system depression including stupor, rapid breathing and heartbeat, profuse sweating and seizures.

Carcinogenicity / Chronic Health Effects: Bifenthrin has produced an increased incidence of urinary bladder tumors in male mice at the highest dose level tested. This response, however, was considered equivocal and not evidence of a clear compound related effect. The U.S. EPA has classified bifenthrin as a Class C carcinogen (a

possible human carcinogen). Repeated overexposure to propylene glycol can produce central nervous system depression, hemolysis and minimal kidney damage.

Reproductive Toxicity: In studies with animals, bifenthrin did not cause reproductive toxicity.

Developmental Toxicity: Animal tests with bifenthrin have not demonstrated developmental effects.

Genotoxicity: Tests with bifenthrin have shown an absence of genotoxicity.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Environmental Hazards:

This product is toxic to fish and aquatic invertebrates.

Ecotoxicity:

Data from EPA ECOTOX website for Bifenthrin Technical:

Bluegill 96-hour LC ₅₀ :	0.344 ug/l	Bobwhite Quail Oral LD ₅₀ :	4450 ppm
Rainbow Trout 96-hour LC ₅₀ :	0.15 ug/l	Mallard Duck 8-day Dietary LC ₅₀ :	1280 ppm
Daphnia 48-hour EC ₅₀ :	1.6 ug/l	Honey Bee Oral LD ₅₀ :	0.0146 ug/bee

Environmental Fate:

In the soil, bifenthrin is stable over a wide pH range and degrades at a slow rate that is governed by soil characteristics. Bifenthrin will also persist in aquatic sediments. Bifenthrin has a high Log Pow (>6.0), a high affinity for organic matter, and is not mobile in soil. Therefore, there is little potential for movement into ground water. There is the potential for bifenthrin to bioconcentrate (BCF = 11,750).

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

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

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: 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 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. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

Nonrefillable containers larger than 5 gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** 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 containers larger than 5 gallons: 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% full with water and, if possible, spray all sides while adding water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Refillable Container: Refill this container with pesticide only. Do not reuse this container for any other purpose. Close all openings and replace all caps. Contact Nufarm's Customer Service Department at 1-800-345-3330 to arrange for return of the empty refillable container.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this SDS.

DOT

Non Regulated – See 49 CFR 173.132(b)(3)

IMDG

UN3082, Environmentally Hazardous substances, liquid, n.o.s. (bifenthrin), 9, PG III, Marine Pollutant

IATA

UN3082, Environmentally Hazardous substances, liquid, n.o.s. (bifenthrin), 9, PG III, Marine Pollutant

15. REGULATORY INFORMATION**U.S. Federal Regulations:**

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:**Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):**

Immediate, Delayed

Section 313 Toxic Chemical(s):

Bifenthrin (CAS No. 82657-04-3) - 7.5 – 8.30% by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:

None specified.

RCRA Waste Code:

None

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not Listed

16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use or of reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Menace is a registered trademark of Nufarm Americas Inc.

Date of Issue: March 18, 2015

Supersedes: December 2, 2014

Menace is a registered trademark of Nufarm Americas Inc.