

Mosquito Program Products Used by the Stark County Health Department

Altosid Briquets, larvacide, (Label & SDS) an insect growth regulation hormone is an insect growth regulator that prevents the mosquito from passing onto the adult stage.

DUET, adulticide, (Label & SDS), a synthetic pyrethroid, applied as a spray to reduce possibly-disease carrying mosquitoes. It is relatively nontoxic to humans and other mammals.

FLIT 10EC, adulticide, (Label & SDS) Flit 10EC is used for spot treatment of an adulticiding agent. Normally applied to foliage to act as a mosquito barrier.

Natular G30, larvacide, (Label & SDS) contains the active ingredient spinosad, a product derived from a naturally occurring soil bacterium.

FourStar MBG, larvacide, (Label & SDS) Bs and Bti dual active ingredients providing up to 4 weeks of residual.



Altosid[®] BRIQUETS



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

SPECIMEN LABEL

ACTIVE INGREDIENT:

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

OTHER INGREDIENTS: 91.38%
Total 100.00%

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

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

KEEP OUT OF REACH OF CHILDREN
CAUTION

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

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

FIRST AID

Call a poison control center or doctor for treatment advice.

- | | |
|-------------------|--|
| If in eyes | <ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. |
|-------------------|--|

FIRST AID (CONTINUED)

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

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

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of unused product.

DIRECTIONS FOR USE

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

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

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

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

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

APPLICATION TIMING

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

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

APPLICATION SITES

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

APPLICATION RATES AND INTERVALS

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

ALTOSID® BRIQUET APPLICATION CHART

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

STORAGE AND DISPOSAL

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

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

Always read the label before using this product.

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

www.altosid.com

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



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March, 2010
Schaumburg, IL



Safety Data Sheet

Section 1: Identification

Product identifier

Product Name

- **Zoecon Altosid Briquets**

Synonyms

- 37060F; 37090C; EPA Reg. No.: 2724-375; ProLink Briquets

Product Description

- Gray to black solid.

Relevant identified uses of the substance or mixture and uses advised against**Recommended use**

- Insect growth regulator.

Restrictions on use

- Avoid contact with eyes, skin or clothing. Keep out of reach of children.

Details of the supplier of the safety data sheet**Manufacturer**

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

Emergency telephone number**Manufacturer**

- 1-800-424-9300 - CHEMTREC

Manufacturer

- 1-703-527-3887 - CHEMTREC - Outside North America - Collect Calls Accepted

Manufacturer

- 1-888-914-2082

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture**OSHA HCS 2012**

- Carcinogenicity 1A
Eye Mild Irritation 2B
Combustible Dust

Label elements**OSHA HCS 2012****DANGER**

Hazard statements • May cause cancer.
Causes eye irritation

May form combustible dust concentrations in air.

Precautionary statements

Prevention • Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not handle until all safety precautions have been read and understood.
Obtain special instructions before use.

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

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

Supplemental information • Exposure to silica dust from the finished product is not expected to occur due to the manner in which the constituents are bound. Finished product is not considered carcinogenic.

Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Section 3 - Composition/Information on Ingredients

Substances

- Material does not meet the criteria of a substance.

Mixtures

Composition		
Chemical Name	Identifiers	%
(s)-Methoprene	CAS:65733-16-6	8.62%
Plaster of paris	CAS:26499-65-0	71.84%
Silica, crystalline - quartz	CAS:14808-60-7	< 0.73%
Activated Carbon	CAS:7440-44-0	17.53%
Other ingredients	NDA	1.28%

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- IF INHALED: If breathing is difficult, remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin

- IF ON SKIN: 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 skin irritation occurs: Get medical advice/attention.

Eye

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

Ingestion

- IF SWALLOWED: call a poison center or doctor if you feel unwell. Rinse mouth. Never

give anything by mouth to an unconscious person. Call a physician or poison control center.

Most important symptoms and effects, both acute and delayed

- Causes eye irritation, may cause cancer.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

- Treat symptomatically and supportively.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media • SMALL FIRES: Dry chemical, CO₂, water spray or regular foam.
LARGE FIRE: Water spray, fog or regular foam.

Unsuitable Extinguishing Media • Avoid heavy hose streams.

Firefighting Procedures • Combustible dust - use low-pressure medium fog streams to avoid dust clouds. Eliminate ignition sources. Move combustibles out of path of advancing pool if you can do so without risk. Stay upwind.
LARGE FIRES: Dike fire control water for later disposal; do not scatter the material.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Hazardous Combustion Products • Decomposes upon heating to produce toxic vapors/gases which may include carbon oxides and nitrogen oxides.

Advice for firefighters

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

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions • Avoid contact with skin, eyes, and clothing. Use appropriate Personal Protective Equipment (PPE). Ventilate enclosed areas. Do not walk through spilled material. Keep all sources of ignition away and avoid creating dusty conditions.

Emergency Procedures • Stay upwind. Ventilate closed spaces before entering. Contain spill and monitor for excessive dust accumulation. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Turn off electric power to area.

Environmental precautions

- Contain and prevent from release into any waterway, sewer or drain.

Methods and material for containment and cleaning up

Containment/Clean-up Measures • Use appropriate Personal Protective Equipment (PPE). Avoid generating dust. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Sweep or scoop up spills, dispose of any unusable material in approved landfill. Non-sparking tools should be used.

Section 7 - Handling and Storage

Precautions for safe handling

Handling • Wash hands thoroughly with soap and water after handling. Read label before use. Avoid contact with skin or eyes. Avoid breathing dust. Avoid contact with heat and

ignition sources.

Conditions for safe storage, including any incompatibilities

- Storage**
- Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in cool, dry area, inaccessible to children. Store only in original container.

Section 8 - Exposure Controls/Personal Protection

Control parameters

- Exposure Limits/Guidelines**
- No data available.

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Silica, crystalline - quartz (14808-60-7)	TWAs	0.025 mg/m ³ TWA (respirable fraction)	0.05 mg/m ³ TWA (respirable dust)	Not established
Plaster of paris (26499-65-0)	TWAs	Not established	10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable dust)	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)

Exposure Limits Supplemental OSHA

- Silica, crystalline - quartz (14808-60-7): **Mineral Dusts:** ((30)/(%SiO₂ + 2) mg/m³ TWA, total dust; (250)/(%SiO₂ + 5) mppcf TWA, respirable fraction; (10)/(%SiO₂ + 2) mg/m³ TWA, respirable fraction)

Exposure controls

Engineering Measures/Controls

- Use adequate ventilation to remove vapors (fumes, dust etc)

Personal Protective Equipment

Pictograms



Respiratory

- If prolonged exposure is anticipated, it is recommended for handlers to wear an approved MSHA/NIOSH dust mask N-95.

Eye/Face

- Wear safety glasses.

Hands

- Wear appropriate gloves.

Skin/Body

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

General Industrial Hygiene Considerations

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Gray to black solid.
Color	Gray to black.	Odor	Slight hydrocarbon.
Odor Threshold	No data available		
General Properties			
Boiling Point	No data available	Melting Point/Freezing Point	No data available

Decomposition Temperature	No data available	pH	Not relevant
Specific Gravity/Relative Density	1.04 g/cc (64.9 lb/ft ³)	Water Solubility	No data available
Viscosity	Not relevant		
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available		
Flammability			
Flash Point	Not relevant	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

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

Chemical stability

- Stable under normal temperatures and pressures.

Possibility of hazardous reactions

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

Conditions to avoid

- Heat, sparks, open flame, other ignition sources, and oxidizing conditions.

Incompatible materials

- No data available. Strong acids. Strong oxidizing agents.

Hazardous decomposition products

- Thermal decomposition may produce toxic vapors and/or gases.

Section 11 - Toxicological Information

Information on toxicological effects

	CAS	
Zoecon Altosid Briquets	NDA	Acute Toxicity: Ingestion/Oral-Rat LD50 • >5100 mg/kg; Skin-Rabbit LD50 • >2100 mg/kg; Irritation: Eye-Rabbit • Mild irritation; Skin-Rabbit • Essentially non-irritating

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Acute Toxicity - Dermal - Classification criteria not met; Acute Toxicity - Inhalation - Classification criteria not met; Acute Toxicity - Oral - Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Carcinogenicity 1A

Germ Cell Mutagenicity	OSHA HCS 2012 • Not classified - data lacking
Skin corrosion/Irritation	OSHA HCS 2012 • Classification criteria not met
Skin sensitization	OSHA HCS 2012 • Classification criteria not met
STOT-RE	OSHA HCS 2012 • Classification criteria not met
STOT-SE	OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	OSHA HCS 2012 • Eye Mild Irritation 2B

Route(s) of entry/exposure • Inhalation, Ingestion, Eyes, and Skin

Potential Health Effects

Inhalation

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • Exposure to respirable crystalline silica is not expected during normal use of this product. However, prolonged overexposure to respirable crystalline silica may cause lung disease (silicosis).

Skin

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • No data available.

Eye

- Acute (Immediate)** • Causes eye irritation.
- Chronic (Delayed)** • No data available.

Ingestion

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • No data available.

Carcinogenic Effects

- Exposure to respirable crystalline silica dust from the finished product is not expected to occur due to the manner in which the constituents are bound, thus the finished product is not considered carcinogenic under conditions of normal use.

Section 12 - Ecological Information

Toxicity

Component	CAS	Data
(s)-Methoprene (8.62%)	65733-16-6	Crustacea: NOEC Crustacea <i>Mysid shrimp</i> 0.014 mg/L [Chronic]; 96 Hour(s) LC50 Crustacea <i>Mysid shrimp</i> 0.11 mg/L [Acute]; 48 Hour(s) LC50 Crustacea <i>Daphnia magna</i> 0.36 mg/L [Acute]; Fish: 96 Hour(s) LC50 Fish <i>Rainbow Trout</i> 0.76 mg/L [Acute]; 96 Hour(s) LC50 Fish <i>Blue Gill</i> >0.37 mg/L [Acute]; NOEC Fish <i>Fathead minnow</i> 0.048 mg/L [Chronic]

Persistence and degradability

- No data available.

Bioaccumulative potential

- No data available.

Mobility in Soil

- No data available.

Other adverse effects

- No data available.

Section 13 - Disposal Considerations

Waste treatment methods

- Product waste**
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
- Packaging waste**
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	N/A	Not regulated	N/A	N/A	N/A
IMO/IMDG	N/A	Not regulated	N/A	N/A	N/A
IATA/ICAO	N/A	Not regulated	N/A	N/A	N/A

Special precautions for user

- None specified.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not relevant.

Other information

IMO/IMDG • No data available

IATA/ICAO • No data available

Key to abbreviations

= N/A = Not applicable.

Section 15 - Regulatory Information

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

SARA Hazard Classifications

- Acute, Chronic

FIFRA – Pesticide Labeling

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

CAUTION

Precautionary Statements

- Keep out of reach of children.

Hazards to Humans and Domestic Animals

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

First Aid

- 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.
- If on skin or clothing: • Takeoff contaminated clothing. • Rinse skin immediately with

plenty of water for 15 - 20 minutes.

Environmental Hazards • Do not contaminate water when disposing of unused product.

Inventory		
Component	CAS	TSCA
(s)-Methoprene	65733-16-6	No
Plaster of paris	26499-65-0	No
Silica, crystalline - quartz	14808-60-7	Yes

Section 16 - Other Information

Last Revision Date • 23/July/2015

Preparation Date • 23/July/2015

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



DUET®

Dual-Action Adulticide

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

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

ACTIVE INGREDIENTS:

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

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

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

**Contains petroleum distillate

KEEP OUT OF REACH OF CHILDREN

CAUTION

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

FIRST AID

IF SWALLOWED:

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

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

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

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

PERSONAL PROTECTIVE EQUIPMENT (PPE) Mixers, loaders, applicators, and other handlers must wear the following: long-sleeved shirt, long pants, shoes and socks. See engineering controls for additional requirements.

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

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

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

ENVIRONMENTAL HAZARDS

This pesticide is highly toxic to aquatic organisms, including fish and aquatic invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates. Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist. Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or washwaters.

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

apply to or allow drift onto blooming crops or weeds when bees are foraging in the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

USE RESTRICTIONS

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

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

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

Do not treat a site with more than 0.0036 lb. of each a.i., Sumithrin and piperonyl butoxide and 0.00072 lbs. prallethrin per acre in a single application or in any 24-hour period. Do not apply more than 0.0108 lb. each of Sumithrin and piperonyl butoxide and 0.0022 lb. prallethrin to the same treatment area in a 7 day period. Do not apply more than 0.0216 lb. each of Sumithrin and piperonyl butoxide and 0.0043 lb. prallethrin to the same treatment area in 1 month. Do not exceed 0.1 lb. of Sumithrin or piperonyl butoxide or 0.02 lb. prallethrin per acre in any site in one year. More frequent applications may be made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

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

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

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

USE INFORMATION

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

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

SPRAY DROPLET SIZE DETERMINATION

Ground-based, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter (VMD) is less than 30 microns (Dv 0.5 < 30 um) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50 um). Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

Aerial Equipment, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns (Dv 0.5 < 60 um) and that 90% of the spray is contained in droplets smaller than 115 microns (Dv 0.9 < 115 um). The effects of flight speed and, for non-rotary atomizers, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

GROUND ULV APPLICATION

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

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

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

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

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

AERIAL APPLICATION

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

STORAGE AND DISPOSAL

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

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

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

CONTAINER DISPOSAL:

[For 2.5-gallon Jugs]: Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with mineral oil and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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

FOR MORE INFORMATION CALL 1-800-323-5727

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

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

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

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

DILUTION CALCULATIONS

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

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

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

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

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

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

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

LOT NO.: Marked on Container Label

EPA REG. NO.: 1021-1795-8329

EPA EST. NO.: _____

AL0477



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DUET[®] Dual-Action Adulticide

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

Product Identifier

Formulation Identifier: DUET[®] Dual-Action Adulticide

EPA Registration Number: 1021-1795-8329

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

Relevant identified uses: An insecticide for mosquito and vector control

Uses advised against: See product label for use restrictions

Details of the Supplier

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

Emergency Telephone Number

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

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

International: (703) 527-3887

SECTION 2. Hazards identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture

Acute Toxicity (Inhalation): Category 4

Aspiration Toxicity: Category 1

Pictogram:



Signal Word: DANGER

Hazard Statements: Harmful if inhaled.

May be fatal if swallowed and enters airways.

Precautionary Statements:

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

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

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

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

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

Other Hazards Not Classifiable Under OSHA 2012 HCS - Not applicable



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

SECTION 3. Composition/Information on Ingredients

Components

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

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

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

SECTION 4. First Aid Measures

Description of First Aid Measures

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

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

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

Indication of Immediate Medical Attention and Special Treatment

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

SECTION 5. Fire-Fighting Measures

Extinguishing Media

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

Unsuitable Extinguishing Media: Do not use water jet.

Special Hazards Arising From the Substance or Mixture

Specific Hazards: No information available.

Explosion data:

Sensitivity to Mechanical Impact: None

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

Special Protective Equipment and Precautions for Fire-Fighters

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

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



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

SECTION 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

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

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

Methods and Material for Containment and Cleaning Up

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

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

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

SECTION 7. Handling and Storage

Precautions for Safe Handling

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

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

Conditions for Safe Storage, Including Any Incompatibilities

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

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

SECTION 8. Exposure Controls / Personal Protection

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

Control Parameters

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



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

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

Individual Protection Measures, such as Personal Protection Equipment:

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

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

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

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

SECTION 9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

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

SECTION 10. Stability and Reactivity

Reactivity

No data available

Chemical Stability



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Stable under recommended normal storage conditions

Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions

Hazardous Polymerization: Hazardous polymerization does not occur

Conditions to avoid Extremes of temperature and direct sunlight

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

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

SECTION 11. Toxicological information

Information on Likely Routes of Exposure

Routes of entry: Oral, Dermal, Inhalation

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

Information on Toxicological Effects

Acute Toxicity / Effects

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

Oral, (Rat) LD₅₀ >5,000 mg/kg

Dermal, (Rabbit) LD₅₀ >2,000 mg/kg

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

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

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

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

Conditions aggravated by exposure: None known

Chronic Toxicity / Effects

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

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

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

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

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

STOT – Single exposure Not classified

STOT – Repeated exposure Not classified

SECTION 12. Ecological Information

Ecotoxicity:

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



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

SECTION 13. Disposal Considerations

Waste Treatment and Disposal methods

Pesticide wastes are regulated. Consult product label for chemical substance and container disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of Federal law. If these wastes cannot be disposed or by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.

Container disposal: Rinse thoroughly in accordance with label instructions.

SECTION 14. Transport Information

DOT (US)

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

Primary Hazard Class/Division: Non-Hazardous

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

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

UN Number: UN3082

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

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

IMDG (Vessel)



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UN Number: UN3082

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

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

ICAO/IATA (Air transport)

UN Number: UN3082

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

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

SECTION 15. Regulatory Information

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

Signal word: CAUTION

KEEP OUT OF REACH OF CHILDREN

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

Personal Protective Equipment (PPE): Mixers, loaders, applicators, and other handlers must wear the following: long-sleeve shirt, long pants, shoes and socks. See engineering controls for additional requirements.

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

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

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

FIRST AID

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

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

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

Other Federal Regulations

SARA TITLE III CLASSIFICATION

Section 302: None

Section 311/312: Immediate (acute) health hazard

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

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

d-phenothrin
piperonyl butoxide

5.0
5.0

CERCLA RQ: None

U.S. California Proposition 65: Not listed

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

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

SECTION 16. Other Information

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

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

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

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® Sumithrin is a Registered Trademark of Sumitomo Company Ltd.
® ETOC is a Registered Trademark of Sumitomo Company Ltd.

End of document



FLIT[®] 10EC

Broad Spectrum Multi-Use Insecticide

Quick Knockdown. For Use Outdoors and in Non-Food/Feed Areas of Commercial Buildings, Warehouses, and Food/Feed Processing Establishments. For Use on Livestock: Cattle (Beef and Dairy), Goats, Sheep, Swine, Horses, and Poultry.

Active Ingredient:	
Permethrin.....	10.00%
†Other Ingredients:.....	90.00%
	100.00%

†Contains petroleum distillate

KEEP OUT OF REACH OF CHILDREN

WARNING

FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.

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.
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IF IN EYES	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing the eye. • Call a poison control center or doctor for treatment advice.
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IF INHALED	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
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IF SWALLOWED	• Call a poison control center or doctor immediately for treatment advice. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
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Note to Physician: Contains petroleum distillate – vomiting may cause aspiration pneumonia. Do not administer or instill milk, cream or other substances containing vegetable or animal fats which enhance absorption of lipophilic substances.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

WARNING. Causes skin irritation. Do not get on skin, or on clothing. Harmful if inhaled. Avoid breathing vapor or spray mist. Causes moderate eye irritation. Avoid contact with eyes. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear Coveralls worn over long sleeved shirt and long pants, socks, chemical resistant footwear, and chemical resistant gloves (barrier laminate, nitrile rubber, neoprene, rubber, Viton, selection category F*).

Personal Protective Equipment (PPE): Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber greater or equal to 14 mils, and nitrile rubber greater or equal to 14 mils. If you want more options, follow the instructions for category F on an EPA chemical-resistance category selection chart.

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

- Coveralls over long-sleeved shirt and long pants,
- Chemical resistant gloves,
- Chemical-resistant footwear plus socks, and
- Chemical resistant headgear, if overhead exposure.

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

- Long-sleeve shirt and long pants,
- Shoes plus socks, and
- Chemical-resistant gloves

All other mixers, loaders, 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 and for handlers performing animal dip.

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.

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.

Entry Restrictions:

For space spray use:

Do not enter or allow others to enter until vapors, mists, and aerosols have dispersed, and the treated area has been thoroughly ventilated.

For surface spray use:

Except when applying to livestock, do not enter or allow others to enter treated area until sprays have dried.

ENVIRONMENTAL HAZARDS FOR TERRESTRIAL APPLICATIONS

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. This pesticide is

highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are foraging the treatment area.

ENVIRONMENTAL HAZARDS FOR WIDE AREA MOSQUITO ADULTICIDE APPLICATIONS

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

When applying as a wide area mosquito adulticide, 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.

PHYSICAL & CHEMICAL HAZARDS

Do not use or store near heat or open flame. Do not use this product in or on electrical equipment due to the possibility of shock hazard.

DIRECTIONS FOR USE

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

APPLICATION RESTRICTIONS

- Do not breathe vapors or spray mist.
- Do not use in aircraft cabins.
- Use in a handheld cold or thermal fogger is prohibited.
- Except when applying to livestock or as a wide area mosquito adulticide, do not apply this product in a way that will contact workers or other persons, either directly or through drift.
- Except when applying to livestock or as a wide area mosquito adulticide, only protected handlers may be in the area during application.
- Do not apply when food is present.

WIDE AREA MOSQUITO CONTROL

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

APPLICATION INSTRUCTIONS

Do not exceed 25 applications at 0.007 lbs. of permethrin per acre or 0.18 lbs. of permethrin per acre in any given season. 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 1 mph.

GENERAL

FLIT® 10EC Broad Spectrum Multi-Use Insecticide is designed for application as an Ultra-Low Volume (ULV) aerosol to control adult mosquitoes and flies in residential, industrial, urban, recreational and other areas where adult mosquitoes and flies are found. FLIT® 10EC is also recommended for application with mist-blowers, backpack sprayers, handheld sprayers, and low pressure hand sprayers for barrier or surface applications. FLIT® 10EC is used for control of annoyance flies and mosquitoes, mosquitoes and flies of public health or disease vector importance in areas such as but not limited to residential areas, industrial areas, urban areas, parks, campsites, woodlands, athletic fields, golf courses, playgrounds, recreational and overgrown waste areas, roadsides, and other areas where adult mosquitoes

and flies occur. Apply at a rate not to exceed 0.007 pounds of permethrin per acre in any given 24 hour period.

In the treatment of corrals, feed lots, swine lots, poultry ranges and zoos cover any exposed drinking water, drinking fountains and animal feed before application.

FLIT® 10EC provides effective control of adult mosquitoes, black flies, gnats, biting and non-biting midges, stable flies, horse flies, deer flies, sheep flies, horn flies, and nuisance flying insects such as houseflies.

SPRAY DROPLET SIZE DETERMINATION

Ground Equipment: Spray equipment must be adjusted so that the volume median diameter is less than 30 microns ($D_v 0.5 < 30 \mu m$) and that 90% of the spray is contained in droplets smaller than 50 microns ($D_v 0.9 < 50 \mu m$). Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

GROUND APPLICATION

Vehicle-Mounted ULV Cold Aerosol Generators or Vehicle-Mounted Non-Thermal Aerosol (Cold Fog): Dilute 1 part concentrate with 1 part water or suitable oil solvent or at proportional oil dilutions calculated on the basis of vehicle speed and swath width to achieve the target dose. Apply through non-thermal ULV application equipment and base acreage calculations on the equipment manufacturer's recommended swath width. Apply at a rate not to exceed 0.007 pounds of permethrin per acre in any given 24 hour period. An optimum swath is created when FLIT® 10EC is applied from a truck that is being driven perpendicular to the wind direction. Direct the spray head of equipment to ensure even 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 in the air column close to the ground. An inversion of air temperatures and a light breeze is preferable. Do not exceed 25 applications at 0.007 pounds of permethrin per acre (not to exceed a total of 0.18 pounds of permethrin per acre) in any given season. More frequent applications may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort. Application during the cooler hours of the night or early morning is recommended.

FLIT® 10EC may be applied through ULV Cold Aerosol Generators, or other equipment designed for non-thermal ULV aerosol applications. The desired application rate may be obtained under different conditions by altering the dilution rate of FLIT® 10EC, the flow rate of the insecticide from the application equipment and the vehicle speed. Where dense vegetation is present, the use of higher rates and/or slower speeds is recommended.

BARRIER APPLICATIONS

For control and exclusion of resting or flying adult mosquitoes in areas such as animal quarters, roadsides, urban areas, residential areas, industrial areas, golf courses, parks, recreational areas, tire piles and all public areas where adult mosquitoes may occur. May be used to treat aggregation and harborage areas such as the perimeter of residential buildings, storage buildings, empty rail cars, truck transport trailers, abandoned buildings and other areas where adult mosquitoes find harborage. For application to resting or aggregation surfaces using low pressure hand sprayers or other similar equipment which has demonstrated the capacity to deliver an even distribution of the labeled rate over the desired treatment area, mix 1 part concentrate with 1 part of water or suitable oil diluents and apply sufficient spray to dampen surface. For application using backpack or truck-mounted mist blower equipment, apply at a rate not to exceed 36.6 fl. oz. of diluted product per acre or diluted at a rate not to exceed 0.1 lbs. a.i. per acre.

Direct spray onto foliage at the perimeter of areas from which mosquitoes or flies are to be excluded or direct spray into harborage areas or resting areas where adult mosquitoes or flies may be found. 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.

Not for use in outdoor residential misting systems.

To prepare dilutions, the concentrate should first be stirred or agitated well. Add the required amount of concentrate to water or oil and blend thoroughly. Do not hold dilutions for more than 24 hours.

For maximum effectiveness, a combination of localized application and space treatment is recommended. Remove pets, birds, and cover fish aquaria before spraying.

USE RESTRICTIONS FOR WIDE AREA MOSQUITO USE

Do not allow spray treatment to contaminate cropland, poultry ranges or water supplies. Do not use on crops used for food or forage.

USE RESTRICTIONS FOR INDOOR USE

Except when making wide area mosquito adulticide applications or treating livestock, do not apply this product in a way that will contact workers or other persons, either directly or through drift.

Except when making wide area mosquito adulticide applications or treating livestock, only protected handlers may be in the area during application.

Do not breathe dusts, vapors, or spray mist.

For applications to food/feed handling and service areas:

Do not apply when food is present.

Do not use in food areas of food handling establishments, restaurants, or other areas where food is commercially prepared or processed.

Do not use in serving areas while food is exposed or facility is in operation. Serving areas are areas where prepared foods are served, such as dining rooms, but excluding areas where foods may be prepared or held. All food processing surfaces and utensils should be covered during treatment or thoroughly washed before use. Exposed food should be covered or removed.

Do not apply indoors at residential sites, including nurseries, day care centers, schools, hospitals, and nursing homes.

Not for broadcast use.

Application is prohibited directly into sewers or drains, or to any area like a gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur. Do not allow the product to enter any drain during or after application.

USE RESTRICTIONS FOR OUTDOOR AND ANIMAL QUARTER USE

When used in dairy barns or facilities: Close milk bulk tank lids to prevent contamination from spray and from dead or falling insects. Remove or cover milking utensils before application. Wash teats of animals before milking.

All outdoor applications must be limited to spot or crack-and-crevice treatments only, except for the following permitted uses:

- (1) Treatment to soil or vegetation around structures;
- (2) Applications to lawns, turf, and other vegetation;
- (3) Applications to building foundations, up to a maximum height of 3 feet.

Other than applications to building foundations, all outdoor applications to impervious surfaces such as sidewalks, driveways, patios, porches, and structural surfaces (such as windows, doors, and eaves) are limited to spot and crack-and-crevice applications only.

Do not water the treated area to the point of run-off.

Do not make applications during rain.

INDOOR USE AREAS

Bakeries, Flour Mills, Granaries, Meat Packing Plants, Truck Trailers, Beverage Plants, Food Processing Plants, Industrial Installations, Railroad Cars, Warehouses, Canneries, Grain Elevators, Kennels, Ships' Holds

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE AND SPILL PROCEDURES: Store upright at room temperature. Avoid exposure to extreme temperatures. In case of spill or leakage, soak up with an absorbent material such as sand, sawdust, earth, fuller's earth, etc. Dispose of with chemical waste.

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

CONTAINER HANDLING:

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

Rigid, Non-refillable containers, small enough to shake (i.e., with capacities equal to or less than 5 gallons)

Non-refillable 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 and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ 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 incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Clarke Mosquito Control Products, Inc. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, CLARKE MOSQUITO CONTROL PRODUCTS, INC. MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Clarke Mosquito Control Products, Inc. is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, CLARKE MOSQUITO CONTROL PRODUCTS, INC. DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT CLARKE MOSQUITO CONTROL PRODUCTS, INC.'S ELECTION, THE REPLACEMENT OF PRODUCT.

FLIT® is a Registered Trademark of Clarke Mosquito Control Products, Inc.

In Case Of Medical Emergency, Call The International Poison Control Center 1-800-214-7753

In Case Of Transportation Emergency, Call Info-Trac 1-800-553-5053

For More Information Call: 1-800-323-5727

Application Sites	Pests Controlled	Use Directions	Diluent	Dilution Rate	Application Rate
LIVESTOCK SPRAY: Dairy & Beef Cattle, Sheep, Goats, Swine, Horses, and Poultry (For swine, do not ship animals for slaughter within 5 days of last treatment).	Horn Flies, House Flies, Mosquitoes, and Gnats	Apply to wet the hair thoroughly, with particular attention to topline, underline, flanks, withers, and other infested areas. Repeat treatment at intervals of 5 to 12 days for small insect populations or as needed when flies are emerging in large numbers.	Water	1 part concentrate in 100 parts water (1.3 fl ounces per gallon)	
	Stable Flies, Horse Flies, and Deer Flies	Apply a quart per adult animal to wet the hair thoroughly with particular attention to the legs, flanks, barrel, topline, and other body areas commonly attacked by these flies. Repeat daily as needed.	Water	1 part concentrate in 100 parts water (1.3 fl ounces per gallon)	
	Face Flies	Apply using spray which produces large wetting droplets. Apply to the face of the animal in the morning before release to pasture. Apply sufficiently to wet the face but not more than 1.5 ounces per animal. Repeat daily as needed.	Water	1 part concentrate in 100 parts water (1.3 fl ounces per gallon)	
	Sheep "ticks" or keds	Thoroughly wet all portions of the body by dipping or by spraying with sufficient pressure and with a nozzle adjustment to give penetration of the wool. Treat at a rate sufficient to wet the animal.	Water	1 part concentrate in 100 parts water (1.3 fl ounces per gallon)	
	Fleas on Livestock (To kill and to protect against reinfestation)	Wet the animal by dipping or spraying	Water	1 part concentrate in 20 parts water (6.5 fl ounces per gallon)	
ASA SPACE SPRAY LIVESTOCK PREMISES: Barns, Milking Parlors, Milk Rooms, Dairies, Poultry Houses, Swine and Livestock Housing, Bakeries, Beverage Plants, Canneries, Flour Mills, Food Processing Plants, Granaries, Industrial Installations, Kennels, Meat Packaging Plants, Railroad Cars, Ships' Holds, Truck Trailers, Warehouses	Fleas, Mosquitoes, and Gnats	Apply as a fog or fine mist, directing the spray toward the ceiling and upper corners until the area is filled with mist, using about 2 ounces per 1000 cubic feet of space. For best results, close doors and windows before spraying and keep them closed for ten to fifteen minutes. Vacate the treated area and ventilate before reoccupying. Repeat treatment daily as needed.	Water	1 part concentrate in 20 parts water (6.5 fl ounces per gallon)	2 ounces per 1000 cubic feet
	House Flies, Fruit Flies, Gnats, Mosquitoes, Skipper Flies, Wasps, Hornets, Bees, Black Flies, Small Flying Moths.	Apply with mechanical or compressed air equipment (non-thermal) adjusted to deliver a fine mist. Close doors and windows and shut off ventilating systems. When using an oil dilution for space spraying extinguish all flames and pilot lights when applying. For rapid control of Houseflies, Fruit Flies, Gnats, Mosquitoes, Skipper Flies, Wasps, Hornets, Bees, Black flies, Small Flying Moths, direct spray at an upward angle distributing uniformly through the entire area at a rate of 1 ounce per 1000 cubic feet of space. Keep area closed for at least 10 minutes. Vacate areas after treatment and ventilate and sweep up dead insects before reoccupying. For rapid kill of exposed or accessible stages of other insects named on this label, apply using conventional mechanical or compressed air equipment (non-thermal) following directions for space spraying.	Oil or Water	1 part concentrate in 20 parts oil or water (6.5 fl ounces per gallon)	1 ounce per 1000 cubic feet

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



SAFETY DATA SHEET

FLIT[®] 10EC Broad-Spectrum Multi-Purpose Insecticide

Effective Date: 5 July 2018

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

1.1 Product Identifier

Formulation Identifier: FLIT[®] 10EC Broad-Spectrum Multi-Use Insecticide

EPA Registration Number: 8329-67

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

Identified use: Insecticide

Uses advised against: See product label for use restrictions

1.3 Details of the Supplier of the Safety Data Sheet

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

1.4 Emergency Telephone Number

24-Hour Medical Emergency: POISON CONTROL Toll-free (800) 214 – 7753

24-Hour Transportation Emergency: INFOTRAC (800) 535-5053

SECTION 2. Hazards identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS (2012)

2.1 Classification of the Substance or Mixture

Aspiration Hazard: Category 1

Skin irritation: Category 2

Flammable liquids: Category 4

Pictogram:



Signal Word: DANGER

Hazard Statements: May be fatal if swallowed and enters airways
Causes skin irritation
Combustible liquid

Precautionary Statements:

PREVENTION: Wear protective gloves and eye/face protection. Wash thoroughly after handling

Keep away from open flames/hot surfaces – No Smoking

Store locked up. Keep cool.

RESPONSE: IF SWALLOWED: Immediately call a POISON CONTROL CENTER/doctor/physician. DO NOT induce vomiting.



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IF ON SKIN: Wash with plenty of water/soap. If skin irritation occurs seek medical attention. Take off contaminated clothing and wash before reuse.

Specific Treatment: see supplemental first aid instructions on the product label.

If skin irritation occurs: Get medical advice/attention.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

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

2.2 Other Hazards Not Classifiable Under OSHA 2012 HCS

No other hazards known

SECTION 3. Composition/Information on Ingredients

3.1 Components

Substance Name	CAS No.	Concentration wt%
Permethrin	52645-53-1	10.0
Distillates (petroleum) Hydrotreated light	64742-47-8	82.0
Nonylphenol ethoxylate	9016-45-9	4.4

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

SECTION 4. First Aid Measures

4.1 Description of First Aid Measures

General advice: When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation: Move to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a physician or poison control center immediately.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

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

Ingestion: Call a physician or a poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

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

Symptoms: To date no symptoms known..

4.3 Indication of Immediate Medical Attention and Special Treatment

Risks: This product contains a pyrethroid. Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard.

Treatment: Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5. Fire-Fighting Measures

5.1 Extinguishing Media

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



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Unsuitable Extinguishing Media: None known

5.2 Special Hazards Arising From the Substance or Mixture

Specific Hazards: Dangerous gases are evolved in the event of a fire.

5.3 Special Protective Equipment and Precautions for Fire-Fighters

Protection Against Fire: Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Special Procedures: Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire to enter drains or water courses

Flash point: 85 °C (185 °F)

Autoignition temperature: No data available

Lower explosion limit: No data available

Upper explosion limit: No data available

Explosivity: Not applicable

SECTION 6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Remove all sources of ignition. Isolate hazard area. Keep unauthorized people away. avoid contact with spilled product or contaminated surfaces.

Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities. See Section 12 for additional ecological information.

6.2 Methods and Material for Containment and Cleaning Up

Clean Up Methods: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labeled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice: Use personal protective equipment. Do not allow to enter soil, waterways or waste canal.

References to other sections: Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7. Handling and Storage

7.1 Precautions for Safe Handling

Handling: Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner to prevent spillage.

Advice on protection against fire and explosion: Keep away from heat and sources of ignition

Hygiene Measures: Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet or applying cosmetics. Remove personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.



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7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage: Store in a cool, dry, place in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8. Exposure Controls / Personal Protection

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

8.1 Control Parameters

Component Name	CAS No.	TWA	Basis
Permethrin	52645-53-1	5 mg/m ³	ACGIH
Permethrin	52645-53-1	5mg/m ³ (REL)	NIOSH
Permethrin	52645-53-1	5 mg/m ³ (PEL)	OSHA Z1
Permethrin	52645-53-1	5mg/m ³ (TWA)	OSHA Z1A
Distillates (petroleum), Hydrotreated light (non-aerosol)	64742-47-8	200 mg/m ³ (TWA)	ACGIH
Distillates (petroleum), Hydrotreated light (non-aerosol)	64742-47-8	100 mg/m ³ (REL)	NIOSH

8.2 Exposure controls

In normal use and handling conditions refer to the label and/or leaflet. In all other cases the following recommendations apply.

Respiratory Protection: When respirators are required, select NIOSH approved equipment based on actual potential airborne concentrations and in accordance with the appropriate regulatory standards and /or industry recommendations.

Hand Protection: Chemical resistant nitrile gloves.

Eye Protection: Tightly fitting safety goggles.

Skin and Body Protection: Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

SECTION 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Appearance: beige to brown

Physical State: Liquid

Odor: mild

Odor Threshold: no data available

pH: 7.0 - 8.5

Melting Point: not determined

Freezing Point: not determined

Initial Boiling Point: not determined

Flash Point: 85 °C

Evaporation Rate: not determined

Explosion limits [U/L]: no data available

Vapor Pressure: no data available

Vapor Density: no data available



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Density:	ca. 0.84g/cm ³ at 20 °C
Solubility:	emulsifiable
Partition Coefficient:	not applicable
Auto-Ignition Temperature:	not applicable
Viscosity:	2.2 mPa.s
Decomposition Temperature:	not available
Explosive Properties:	not applicable
Oxidizing Properties:	not available

SECTION 10. Stability and Reactivity

10.1 Reactivity

Thermal decomposition: not applicable

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions

Hazardous Polymerization: Not known to occur

10.4 Conditions to avoid

Extremes of temperature and direct sunlight. Heat, flames and sparks.

10.5 Incompatible materials

Avoid contact with strong oxidizing agents.

10.6 Hazardous decomposition products

No decomposition products under normal conditions of storage and use.

SECTION 11. Toxicological information

11.1 Information on Likely Routes of Exposure

Exposure Routes: Eye Contact, Skin contact, Inhalation, Ingestion

Immediate Effects

Eye: Moderate eye irritation.

Skin: Causes skin irritation.

Inhalation: Harmful if inhaled.

11.2 Information on Toxicological Effects

Acute Oral toxicity (Rat) LD₅₀ > 5,000 mg/kg

Acute Inhalation toxicity, Rat
LC₅₀ (rat) > 1.6. mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol
Highest attainable concentration
No deaths

LC₅₀ (rat) > 6.4 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol
Extrapolated from the 4 hr. LC₅₀



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Acute Dermal toxicity, Rabbit	LD ₅₀ > 5,050 mg/kg
Skin Corrosion/Irritation:	Severe skin irritation (rabbit)
Serious Eye Damage/Irritation:	Mild eye irritation (rabbit)
Skin Sensitization:	Not a skin sensitizer (guinea pig)
Germ Cell Mutagenicity:	Permethrin was not a mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Assessment repeated dose toxicity:	Permethrin did not cause specific target organ toxicity in experimental animal studies.
Carcinogenicity	Permethrin caused at high dose levels an increase of tumors in mice in the following organ(s): liver, Lungs. The mechanism that triggers tumors in rodents is not relevant for the low exposure encountered under normal use conditions ACGIH: Distillates (petroleum), hydrotreated light 64742-47-8 Group A3 NTP: None IARC: Permethrin, 52645-53-1, Evaluation: 3 Distillates (petroleum), hydrotreated light, 64742-47-8, Evaluation: 3 OSHA: None
Reproductive toxicity:	Permethrin did not cause reproductive toxicity in a two-generation study in rats.
Developmental toxicity:	Permethrin did not cause developmental toxicity in rats and rabbits.
Further information:	Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the active ingredient(s).

SECTION 12. Ecological Information

12.1 Ecotoxicity

Toxicity to Fish:	LC ₅₀ (<i>Poecilia reticulata</i> (guppy)) 0.0076 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient permethrin.
Toxicity to Aquatic Invertebrates:	EC ₅₀ , Water Flea (<i>Daphnia magna</i>) 0.00017 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient permethrin
Toxicity to Aquatic Plants:	EC ₅₀ 8.1 mg/L, (Algae) 0.5 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient permethrin

12.1 Persistence and Degradability

Biodegradability:	Permethrin: not rapidly biodegradable
Koc:	Permethrin: Koc: 100 000
Bioaccumulation:	Permethrin: Bioaccumulation factor (BCF) 300; does not bioaccumulate
Mobility in soil:	Permethrin: Immobile in soil

SECTION 13. Disposal Considerations

13.1 Waste Treatment and Disposal methods

Product:	Do not contaminate water, food, or feed by disposal. Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.
Contaminated packaging:	Triple rinse containers.



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Puncture container to avoid re-use.
Dispose of empty containers in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.
If burned stay out of smoke.
Follow advice on product label and/or leaflet.

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.

SECTION 14. Transport Information

14.1 DOT (US) 49 CFR

NA-Number: NA 1993
Hazard Class: (Combustible Liquid)
Packing group: III
Proper shipping name: Combustible Liquid, N.O.S. (Petroleum Distillates)

14.2 IMDG (Vessel)

UN Number: 3082
Hazard Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE LIQUID, N.O.S.(Permethrin)
Marine Pollutant: Yes

14.3 ICAO/IATA (Air transport)

UN Number: 3082
Hazard Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Permethrin)
Environmental Hazard: Yes

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

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

SECTION 15. Regulatory Information

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

Signal Word: WARNING
KEEP OUT OF REACH OF CHILDREN

First Aid	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.	
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.



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IF IN EYES	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing the eye. • Call a poison control center or doctor for treatment advice.
IF INHALED	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
IF SWALLOWED	• Call a poison control center or doctor immediately for treatment advice. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
Note to Physician: Contains petroleum distillate – vomiting may cause aspiration pneumonia. Do not administer or instill milk, cream or other substances containing vegetable or animal fats which enhance absorption of lipophilic substances.	

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING. Causes skin irritation. Do not get on skin, or on clothing. Harmful if inhaled. Avoid breathing vapor or spray mist. Causes moderate eye irritation. Avoid contact with eyes. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear Coveralls worn over long sleeved shirt and long pants, socks, chemical resistant footwear, and chemical resistant gloves (barrier laminate, nitrile rubber, neoprene, rubber, Viton, selection category F*).

Personal Protective Equipment (PPE): Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber greater or equal to 14 mils, and nitrile rubber greater or equal to 14 mils. If you want more options, follow the instructions for category F on an EPA chemical-resistance category selection chart.

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

- Coveralls over long-sleeved shirt and long pants,
- Chemical resistant gloves,
- Chemical-resistant footwear plus socks, and
- Chemical resistant headgear, if overhead exposure.

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

- Long-sleeve shirt and long pants,
- Shoes plus socks, and
- Chemical-resistant gloves

All other mixers, loaders, 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 and for handlers performing animal dip.

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. 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.



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Entry Restrictions:

For space spray use: Do not enter or allow others to enter until vapors, mists, and aerosols have dispersed, and the treated area has been thoroughly ventilated.

For surface spray use: Except when applying to livestock, do not enter or allow others to enter treated area until sprays have dried.

Other US Federal Regulations

SARA Title III – Section 302: None
SARA Title III Section 313 Toxic Chemical Release Reporting
Permethrin 52645-53-1

CERCLA RQ: None

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

U.S. California Proposition 65: Not listed

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

SECTION 16. Other Information

NFPA 704 (National Fire Protection Association):
Health – 2 Flammability – 2 Instability – 0 Others – none

HMIS (Hazardous Materials Identification System, based on Third Edition Ratings Guide)
Health – 2 Flammability -2 Physical Hazard – 0 PPE-

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

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End of document



NATULAR® G30

Mosquito Larvicide / Extended Release Granule

Controls larvae of mosquitoes which may transmit Dengue, Chikungunya, or Zika.

To be used in governmental mosquito control programs, by professional pest control operators, or in other mosquito or midge control operations.

Active Ingredient (dry weight basis):

Spinosad (a mixture of Spinosyn A and Spinosyn D)	2.5%
Other Ingredients	97.5%
Total	100.0%

U.S. Patent No. 5,362,634 and 5,496,931

Natular® G30 is a 2.5% extended release granule.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Precautionary Statements

Hazards to Humans and Domestic Animals

Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Avoid contact with eyes or clothing. Wear protective eyewear (such as goggles, face shield, or safety glasses).

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 do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If in eyes:	• Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.

Environmental Hazards

This product is toxic to aquatic organisms. Non-target aquatic invertebrates may be killed in waters where this pesticide is used. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

Directions For Use

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

Read all Directions for Use carefully before applying.

Product Information

Natular® G30 is a product for killing mosquito and midge larvae. This product's active ingredient, spinosad, is biologically derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. Natular® G30 releases effective levels of spinosad for up to 30 days under typical environmental conditions. Natular® G30 may be applied with ground or aerial equipment.

Use Precautions

Integrated Pest Management (IPM) Programs

Natular® G30 is intended to kill mosquito and midge larvae. Mosquitoes are best controlled when an IPM program is followed. Larval control efforts should be managed through habitat mapping, active adult and larval surveillance, and integrated with other control strategies such as source reduction, public education programs, harborage or barrier adult mosquito control applications, and targeted adulticide applications.

Insecticide Resistance Management (IRM)

Natular® G30 contains a Group 5 insecticide. Insect biotypes with acquired resistance to Group 5 insecticides may eventually dominate the insect population if appropriate resistance management strategies are not followed. Currently, only spinetoram and spinosad active ingredients are classified as Group 5 insecticides. Resistance to other insecticides is not likely to impact the effectiveness of this product. Spinosad may be used in rotation with all other labeled products in a comprehensive IRM program.

To minimize the potential for resistance development, the following practices are recommended:

- Base insecticide use on comprehensive IPM and IRM programs.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or Clarke representative.
- Rotate with other labeled effective mosquito larvicides that have a different mode of action.
- In dormant rice fields, standing water within agricultural/crop sites, and permanent marine and freshwater sites, do not make more than 5 applications per year.
- Use insecticides with a different mode of action (different insecticide group) on adult mosquitoes so that both larvae and adults are not exposed to products with the same mode of action.
- Contact your local extension specialist, technical advisor, and/or Clarke representative for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact your local Clarke representative by calling 800-323-5727.

Application

Proper application techniques help ensure adequate coverage and correct dosage necessary to obtain optimum kill of mosquito and midge larvae. Apply Natular® G30 prior to flooding as a pre-hatch application to areas that breed mosquitoes, or at any stage of larval development after flooding in listed sites. Do not allow this product to drift onto neighboring crops or non-crop areas or use in a manner or at a time other than in accordance with label directions.

Ground Application

Use conventional ground application equipment that provides even coverage at labeled rates.

Aerial Application

Fixed wing aircraft or helicopters equipped with granular spreaders capable of applying rates from 5 to 20 lb per acre may be used to apply Natular® G30. Aerial application equipment should be carefully calibrated before use to be sure it is working properly and delivering a uniform distribution pattern. Avoid flight path overlaps while dispensing granules. Do not exceed labeled limits.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the treatment coordinator are responsible for considering all these factors when making application decisions.

Application Sites and Rates

Apply Natular® G30 at rates (see table) for the targeted treatment site. Within these rate ranges apply at a rate appropriate to site habitat and conditions at the time of application. Use lower labeled rate when water is shallow, vegetation and/or pollution are minimal, and mosquito populations are low. Do not use less than labeled minimum rate. Within the labeled rate range, use higher rates when water is deep, vegetation and/or pollution are high, and mosquito populations are high in number.

Natular® G30 may be applied at rates up to 20 lb per acre in waters high in organic content, deep-water mosquito habitats or those with dense surface cover, and where monitoring indicates a lack of kill at typical rates.

Reapply after 30 days, if needed for extended control in continuously flooded habitat. More frequent applications may be made if monitoring indicates that larval populations have reestablished or weather conditions have rendered initial treatments ineffective.

Treatment Area	Natular® G30
Temporary Standing Water: Woodland pools, snow pools, roadside ditches, retention ponds, freshwater dredge spoils, tire tracks and other natural or manmade depressions, rock holes, pot holes and similar areas subject to holding water. Other Freshwater Sites: Natural and manmade aquatic sites; edges of lakes, ponds, canals, stream eddies, creek edges, and detention ponds. Dormant Rice Fields: Impounded water in dormant rice fields (for application only during the interval between harvest and preparation of the field for the next cropping cycle). Freshwater Swamps and Marshes: Mixed hardwood swamps, cattail marsh, common reed wetland, water hyacinth ponds, and similar freshwater areas with emergent vegetation. Marine/Coastal Areas: Intertidal areas above the mean high water mark, mangroves, brackish water swamps and marshes, coastal impoundments and similar areas.	Apply 5 to 12 lbs per acre (5.6 to 13.5 kg per hectare). Rate is equivalent to 5 to 12 g per 100 sq. ft. of water.
Stormwater/Drainage Systems: Storm sewers, catch basins, drainage ditches, and similar areas. Wastewater: Sewage effluent, sewers, sewage lagoons, cesspools, oxidation ponds, septic ditches and tanks, animal waste lagoons and settling ponds, livestock runoff lagoons, wastewater impoundments associated with fruit and vegetable processing, and similar areas.	Apply 5 to 20 lbs per acre (5.6 to 22.4 kg per hectare). Rate is equivalent to 5 to 20 g per 100 sq. ft. of water.
Natural and Artificial Containers: Tree holes, bromeliads, leaf axils, and other similar natural water holding containers; cemetery urns, bird baths, flower pots, rain barrels, buckets, single tires, tires stockpiled in dumps, landfills, recycling plants and other similar areas, abandoned swimming pools, ornamental ponds, flooded roof tops and similar water holding sites; landfill containers, salvage yards, abandoned vehicles. Do not apply to natural or artificial containers of water intended for consumption by people, animals, or livestock.	Apply 5 to 20 lbs per acre (5.6 to 22.4 kg per hectare). Rate is equivalent to 5 to 20 g per 100 sq. ft. of water. For small to medium size containers, apply 0.15 g of Natular G30 per 10-25 gallons of water. For very small containers, apply a pinch of Natular G30 (about 0.02 g) per 5 liters (1.3 gallons) of water. This is approximately 8-10 granules per 5 liters of water.
Agricultural/Crop Sites Where Mosquito Breeding Occurs Apply Natular® G30 to standing water within agricultural/crop sites where mosquito breeding occurs to kill mosquito larvae species, including: pastures/hay fields, rangeland, orchards, vineyards, and citrus groves. Do not apply to waters intended for irrigation.	Apply 5 to 20 lbs per acre (5.6 to 22.4 kg per hectare). Rate is equivalent to 5 to 20 g per 100 sq. ft. of water.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a cool dry place in original container only. Keep away from moisture.

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

Container Handling for Non-Refillable Bag: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill or by incineration, or by other procedures approved by state and local authorities.

Container Handling for Rigid Refillable Tote: Refillable container. Refill this container with granular spinosad pesticide formulation 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. Use a sprayer with water to quickly and completely rinse the interior of the container. Ensure the top, bottom, and all sides are rinsed. A high pressure sprayer with a rinsing nozzle could provide a thorough rinse of the interior. Drain and collect rinsate from the container into a collection system for later disposal. Drain the container dry so no water remains. Return to point of sale. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by State and local authorities.

Warranty: To the extent consistent with applicable law, CLARKE MOSQUITO CONTROL PRODUCTS, INC. makes no warranty, express or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use/handling of this material when use and/or handling is contrary to label instructions.

Natular® is a Trademark of Clarke Mosquito Control Products, Inc.

Manufactured For:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 North Garden Avenue
Roselle, IL 60172, U.S.A.
1-800-323-5727

EPA Reg. No.: 8329-83

EPA Est. No.: 8329-IL-03

Net Contents: _____

Lot: _____



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

1.1 Product Identifier

Formulation Identifier: Natular™ G30

EPA Registration Number: 8329-83

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

Relevant Identified Uses: Insecticide for control of mosquito and midge larvae

Uses Advised Against: See product label for use restrictions

1.3 Details of the Supplier of the Safety Data Sheet

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

1.4 Emergency Telephone Number

24-Hour Medical Emergency: POISON CONTROL Toll-free (800) 214 – 7753

24-Hour Transportation Emergency: INFOTRAC (800) 535-5053

SECTION 2. Hazards identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS (2012)

2.2 Classification of the Substance or Mixture

Acute Toxicity (Inhalation): Category 4

Pictogram:



Signal Word: Warning

Hazard statements: Harmful if inhaled

Precautionary Statements:

PREVENTION: Avoid breathing dust. Use only outdoors or in a well-ventilated area.

RESPONSE: If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.

2.3 Other Hazards Not Classifiable Under OSHA 2012 HCS

See product label for any additional hazards



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SECTION 3. Composition/Information on Ingredients

3.1 Components

Substance Name	CAS No.	Concentration % w/w
Spinosad:		2.50
Spinosyn A	131929-60-7	
Spinosyn D	131929-63-0	
Sand:		68.00
Quartz	14808-60-7	≤ 67.66
Aluminum Oxide	1344-28-1	≤ 12.92
Calcium Oxide	1305-78-8	≤ 0.748
Titanium Oxide	13463-67-7	≤ 0.476

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

SECTION 4. First Aid Measures

4.1 Description of First Aid Measures

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

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

Inhalation: This product may release nuisance dust in handling or use. Exposure to dusts from this product may irritate the nose, throat, lungs, and upper respiratory tract. Acute exposure to dust is not likely to be hazardous.

4.3 Indication of Immediate Medical Attention and Special Treatment

Treatment: Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. For medical treatment information, contact the poison control hotline at 1-800-214-7753. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

SECTION 5. Fire-Fighting Measures

5.1 Extinguishing Media

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

Unsuitable Extinguishing Media: None known

5.2 Special Hazards Arising From the Substance or Mixture

Specific Hazards: Under fire conditions some components may decompose. Combustion products may include CO and NO_x.

5.3 Special Protective Equipment and Precautions for Fire-Fighters

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

Special Procedures: Fight fires from a protected location. Dike fire control water for later disposal. Keep container cool by spraying with water.

SECTION 6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Use appropriate protection (see section 8)



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Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities. See Section 12 for additional ecological information.

6.2 Methods and Material for Containment and Cleaning Up

Clean Up Methods: Collect all material with shovel or other instrument while using appropriate personal protection equipment, and place in closable marked containers. Use non-reactive absorbent to absorb small spills of rinsate and collect for disposal

SECTION 7. Handling and Storage

7.1 Precautions for Safe Handling

Handling: Keep out of reach of children. Do not take internally. Avoid contact with eyes and inhalation of dusts from product.

Hygiene Measures: Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage: Product should be stored in compliance with local regulations. Store in a cool, dry, well-ventilated place in the original container. Protect from excessive heat and cold. Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilizers. Keep out of reach of children.

SECTION 8. Exposure Controls / Personal Protection

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

8.1 Control Parameters

Component Name	CAS No.	List	Type	Value
Spinosyn A & Spinosyn D	131929-60-7 131929-63-0	DOW IHG	TWA	0.3 mg/m ³
Sand	14808-60-7	ACGIH	TWA	0.025 mg/m ³ respirable fraction
		NIOSH	TWA	0.05 mg/m ³ respirable dust
Quartz	14808-60-7	ACGIH	TWA	0.025 mg/m ³ respirable fraction
		NIOSH	TWA	0.05 mg/m ³ respirable dust
		OSHA	TWA	Mineral Dust (30) / (%SiO ₂ + 2) mg/m ³ Respirable Dust (10) / (%SiO ₂ + 2) mg/m ³
Aluminum Oxide	1344-28-1	ACGIH	TWA	1 mg/m ³ respirable fraction as <i>aluminum insoluble compounds</i>
		OSHA	TWA	15 mg/m ³ total dust 5 mg/m ³ respirable fraction
Calcium Oxide	1305-78-8	ACGIH	TWA	2 mg/m ³
		NIOSH	TWA	2 mg/m ³
		OSHA	TWA	5 mg/m ³
Titanium Oxide	13463-67-7	ACGIH	TWA	10 mg/m ³
		OSHA	TWA	15 mg/m ³ total dust



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8.2 Exposure controls

Engineering Controls: Use with adequate ventilation. Wash hands thoroughly after handling. Wash clothing before re-using.

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Safety Glasses, Goggles or Face Shield

Skin Protection: Wear suitable protective clothing

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

Respiratory Protection: Natular™ G30 as formulated is not expected to form appreciable respirable dust from sand from use or attrition. A respirator is not required for normal use of this product. If needed or preferred, use suitable respiratory equipment such as a NIOSH standard N-95 respirator or dust mask.

SECTION 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Appearance:	Granule
Color:	Tan/white
Odor:	Earthy scent
Odor Threshold:	Not Available
pH:	6.92
Melting Point:	Not Determined
Freezing Point:	Not Applicable
Initial Boiling Point:	Not Applicable
Flash Point:	Not Determined
Evaporation Rate:	Not Applicable
Flammability:	Not Determined
Explosion limits [U/L]:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Relative Density:	1.284 g/mL
Solubility:	Not Determined
Partition Coefficient:	Not Determined
Auto-Ignition Temperature:	Not Determined
Viscosity:	Not Applicable
Decomposition Temperature:	Not Available
Explosive Properties:	Not Available
Oxidizing Properties:	Not Available

SECTION 10. Stability and Reactivity

10.1 Reactivity

Not Available

10.2 Chemical Stability

Stable under normal conditions



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10.3 Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions

Hazardous Polymerization: Not known to occur

10.4 Conditions to Avoid

Protect from direct sunlight and excessive heat.

10.5 Incompatible Materials

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

10.6 Hazardous Decomposition Products

None known under normal conditions of storage and use

SECTION 11. Toxicological Information

11.1 Information on Likely Routes of Exposure

Inhalation: This product may release nuisance dust in handling or use. Exposure to dusts from this product may irritate the nose, throat, lungs, and upper respiratory tract..

11.2 Information on Toxicological Effects

Acute Toxicity/Effects

Oral, Rat LD₅₀ : > 2,000 mg/kg-bw

Dermal, Rat LD₅₀ : > 4,000 mg/kg-bw

Inhalation, Rat LC₅₀ : > 4.08 mg/L

Skin Corrosion/Irritation: Natular™ G30 is not a skin irritant

†Calcium Oxide (CAS# 1305-78-8), a component of sand, is classified as Skin Corrosion/Irritation Category 1C under the OSHA 2012 HCS.

Serious Eye Damage/Irritation: Natular™ G30 is not an eye irritant

Skin Sensitization: Natular™ G30 is not a skin sensitizer

STOT – Single Exposure: Dust may cause mechanical irritation to the lungs.

Chronic Toxicity/Effects

Germ Cell Mutagenicity: Natular™ G30 is not mutagenic.

Carcinogenicity: Natular™ G30 is not considered carcinogenic.

Spinosad is not carcinogenic.

†Sand may cause cancer from repeated exposure via the inhalation route of exposure from respirable particles.

†Sand (CAS# 14808-60-7) and its primary constituent, Quartz (CAS# 14808-60-7) are classified as Carcinogenicity Category 1 under the OSHA 2012 HCS, IARC Group 1 – Carcinogenic, and an NTP Known Human Carcinogen.

†Titanium Oxide (CAS# 13463-67-7), a component of sand, is classified as Carcinogenicity Category 2 under the OSHA 2012 HCS, IARC Group 2B – Possible Carcinogen.

Reproductive Effects: Spinosad, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.



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STOT – Repeated Exposure:

In animals, spinosad has been shown to cause vacuolation of cells in various tissues. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

†Sand may cause irritation and/or lung damage, including silicosis, fibrosis, and inflammation.

†Sand (CAS# 14808-60-7) and its constituent, Quartz (CAS# 14808-60-7), are classified as Specific Target Organ Toxicity- Repeat Exposure Category 1 under the OSHA 2012 HCS. Sand constituents, Aluminum Oxide (CAS# 1344-28-1), and Titanium Oxide (CAS# 13463-67-7), are classified as Specific Target Organ Toxicity- Repeat Exposure Category 2 under the OSHA 2012 HCS.

Additional Information:

†Natular™ G30 is a multi-layer coated sand-core granule. Natular™ G30 as formulated is not expected to form appreciable respirable dust from sand from use or attrition. Exposure to respirable sand particles from Natular™ G30 is not expected to occur due to the manner in which its constituents are bound.

SECTION 12. Ecological Information

12.1 Ecotoxicity

Product specific data is not available. Data referenced is in relation to the active ingredient, Spinosad. Spinosad is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Toxicity to Fish:	96-hr Acute LC ₅₀ 5.0 mg/L, Common Carp (<i>Cyprinus carpio</i>)
	96-hr Acute LC ₅₀ 5.9 mg/L, Bluegill Sunfish (<i>Lepomis macrochirus</i>)
	96-hr Acute LC ₅₀ 30 mg/L, Rainbow Trout (<i>Oncorhynchus mykiss</i>)
Toxicity to Aquatic Invertebrates:	48-hr Acute EC ₅₀ 1.5-14.0 mg/L, Water Flea (<i>Daphnia magna</i>)
	48-hr LC ₅₀ > 7.9 mg/L, Mysid Shrimp (<i>Americamysis bahia</i>)
Toxicity to Aquatic Plants:	5-d EC ₅₀ 8.1 mg/L, Blue Green Algae (<i>Anabaena flos-aquae</i>)

12.1 Persistence and Degradability

Product specific data not available. Data referenced is in relation to the active ingredient, Spinosad.

Log K _{ow} :	Spinosyn A: 3.91; Spinosyn D: 4.38 (distilled water)
Bioaccumulation:	Bioconcentration potential is low (BCF < 100)
Bioconcentration Factor:	Spinosyn A: 19; Spinosyn D: 33 mL/g (fish)
Mobility in Soil:	Potential for mobility in soil is low (K _{oc} between 500 and 2000)
Partition Coefficient, K _{oc} :	701

SECTION 13. Disposal Considerations

13.1 Waste Treatment and Disposal methods

Consult product label for disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of the Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.

SECTION 14. Transport Information

14.1 DOT (US)

Not regulated (Bulk and Non-Bulk Quantities)



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14.2 IMDG (Vessel)

UN Number: 3077
Hazard Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Spinosad)
Marine Pollutant: Yes

14.3 ICAO/IATA (Air transport)

UN Number: 3077
Hazard Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Spinosad)
Environmental Hazard: Yes

SECTION 15. Regulatory Information

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

Signal Word: CAUTION

KEEP OUT OF REACH OF CHILDREN

PRECAUTIONARY STATEMENTS: Hazards to Humans and Domestic Animals: Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Avoid contact with eyes or clothing. Wear protective eyewear (such as goggles, face shield, or safety glasses).

First Aid	
If swallowed:	• Call a poison control center or doctor immediately for treatment advice. • Have a person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If in eyes:	• Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.	

Other Federal Regulations

SARA TITLE III CLASSIFICATION

Section 302: None

Section 311/312: Immediate (acute) hazard

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

Aluminum Oxide (CAS 1344-28-1), fibrous forms

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

U.S. California Proposition 65: WARNING: This product contains a chemical known to the State of California to cause cancer and/or birth defects or other reproductive harm:

Titanium Oxide (CAS 13463-67-7), airborne, unbound particles of respiratory size

Quartz (silica, crystalline, CAS 14808-60-7), airborne particles of respirable size



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

SECTION 16. Other Information

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

™ NATULAR is a Trademark of Clarke Mosquito Control Products, Inc.

End of document

Specimen Label

Multi-Brood Granule

ACTIVE INGREDIENTS:

<i>Bacillus sphaericus</i> 2362, Serotype H5a5b, strain AML614*	3.0%
<i>Bacillus thuringiensis</i> subspecies <i>israelensis</i> Strain BMP 144 solids, spores and insecticidal toxins*	3.0%
OTHER INGREDIENTS:	94.0%
TOTAL:	100.0%

*Equivalent to 30 Bs ITU/mg and 210 Bti ITU/mg respectively. **Note:** The percent active ingredient does not indicate product performance and potency measurements are not federally standardized.

KEEP OUT OF REACH OF CHILDREN CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS – CAUTION:

Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.
Mixers / loaders must wear a dust / mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

ENVIRONMENTAL HAZARDS:

Do not contaminate water when disposing of equipment washwaters or rinsate. Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption.

FIRST AID

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.
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, and then continue rinsing eyes. - Call a poison control center or doctor for treatment advice.
If on skin	- 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.

HOT LINE 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 1-800-248-7763 for emergency medical treatment information.

DIRECTIONS FOR USE

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

APPLICATION DIRECTIONS

FourStar® MBG is a highly selective multi-brood microbial insecticide effective against mosquito larvae in a variety of aquatic habitats for up to 4 weeks. **FourStar MBG** releases effective levels of *Bacillus sphaericus* and *Bacillus thuringiensis* subspecies *israelensis* to the water surface and throughout the water column.

Apply uniformly according to rates listed below by aerial or conventional ground equipment. Reapply after 1 to 4 weeks under typical environmental conditions. More frequent applications may be made if monitoring indicates larval populations have reestablished or weather conditions have rendered initial treatments ineffective.

APPLICATION SITES

FourStar MBG can be applied to areas that contain aquatic life, fish and plants as well as areas in contact with humans, animals, horses, livestock, pets, birds or wildlife.

Examples of application sites include:

Natural and manmade aquatic sites such as lakes, ponds, canals, rivers and streams (including river & stream edges), floodplains, swamps, marshes, irrigation ditches, flood water, woodland pools, snow melt pools, livestock watering ponds and troughs, tidal water, salt marshes, mangroves, estuaries, drainage ditches, roadside ditches, retention, detention, and seepage ponds, sewage effluent, sewage lagoons, oxidation ponds, septic ditches, animal waste lagoons, impounded wastewater associated with fruit and vegetable processing, rice fields, pastures/hay fields, orchards (including citrus groves, peaches, almonds, dates, walnuts), asparagus fields, corn fields, cotton fields, alfalfa fields, vineyards.

Any location where water accumulates and remains standing for periods of time, except treated, finished drinking water for human consumption.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential spray drift. The applicator and treatment coordinator are responsible for considering all these factors when making decisions.

APPLICATION RATES

To control mosquito larvae, apply 5 to 10 lbs of **FourStar MBG** per acre. Use 10 to 20 lbs per acre where late instar larvae predominate, larval populations are high, water is heavily polluted and/or algae are abundant, or under conditions where local experience indicates the need for higher rates to achieve extended control.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a cool, dry place.

Pesticide Disposal: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

Container Handling: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment by shaking and tapping sides and bottom to loosen clinging particles. Then offer for recycling if available, or dispose of empty bag in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

NOTICE TO USER

To the extent consistent with applicable law, seller makes no warranty express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label. To the extent consistent with applicable law, user assumes all risks of use, storage or handling not in strict accordance with label instructions.

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : FourStar MBG Multi-Brood Granule
Synonyms : 100514310, 100519508, EPA Reg. No.: 85685-3

1.2. Recommended use and restrictions on use

Recommended use : Multi-brood microbial insecticide.
Restrictions on use : Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption. Avoid contact with eyes, skin or clothing.

1.3. Supplier

Fourstar Microbial Products, LLC
1501 E. Woodfield Road, Suite 200W
Schaumburg, IL 60173 - United States

www.fourstarmicrobials.com

1.4. Emergency telephone number

Emergency number : 1-800-248-7763
1-800-424-9300 - CHEMTREC
1-703-527-3887 - CHEMTREC - Outside North America - Collect Calls Accepted

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin sensitization, Category 1	May cause an allergic skin reaction
Carcinogenicity Category 1A	May cause cancer
Specific target organ toxicity (repeated exposure) Category 1	Causes damage to organs through prolonged or repeated exposure

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : May cause an allergic skin reaction
May cause cancer
Causes damage to organs (lungs) through prolonged or repeated exposure

Precautionary statements (GHS-US) : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing must not be allowed out of the workplace
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water
If exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations

FourStar MBG Multi-Brood Granule

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Supplemental information

: The finished product is not considered carcinogenic because of the product's physical form. The Hazard Statement "May Cause Cancer" is presented because a component of this product contains naturally occurring crystalline silica (quartz) which is classified as carcinogenic to humans if inhaled. Respiratory exposure to silica dust from the finished product is not expected to occur under normal conditions of use due to the manner in which the constituents are bound. The crystalline silica in the finished product is unlikely to pose personal exposure via inhalation in light of studies conducted that indicate there is minimal liberation of particulates from the product during extreme handling or transport.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification

: Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Bacillus sphaericus	(CAS-No.) 143447-72-7	3
Bacillus thuringiensis ssp. israelensis	(CAS-No.) 68038-71-1	3
Silica, crystalline - quartz	(CAS-No.) 14808-60-7	70 - 90

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general

: IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation

: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact

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

First-aid measures after eye contact

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

First-aid measures after ingestion

: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting unless directed to do so by medical personnel.

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

Symptoms/effects after inhalation

: Inhalation may cause irritation (cough, short breathing, difficulty in breathing).

Symptoms/effects after skin contact

: May cause an allergic skin reaction.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media

: Use extinguishing agent suitable for surrounding fire.

Unsuitable extinguishing media

: Avoid heavy hose streams.

5.2. Specific hazards arising from the chemical

Fire hazard

: Material is non-combustible and is not expected to pose a fire or explosion hazard.

Reactivity

: The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting

: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures

: Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

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6.1.2. For emergency responders

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

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep or scoop spills, dispose of any unusable material in approved landfill. Use appropriate PPE.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid dust formation. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible materials : Strong oxidizers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Silica, crystalline - quartz (14808-60-7)		
ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ (respirable particulate matter)
OSHA	OSHA PEL (TWA) (mg/m ³)	50 µg/m ³
IDLH	US IDLH (mg/m ³)	50 mg/m ³ (respirable dust)
NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ (respirable dust)

8.2. Appropriate engineering controls

Appropriate engineering controls : Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Tan to gray granule in water soluble pouch.

Color : Tan to gray

Odor : Mild

Odor threshold : No data available

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pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: 2100 kg/m3
Relative density	: 2.1
Solubility	: Slightly soluble
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: Not explosive
Oxidizing properties	: Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Bacillus sphaericus (143447-72-7)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 2.04 mg/l/4h
Bacillus thuringiensis ssp. israelensis (68038-71-1)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 2.04 mg/l/4h
Silica, crystalline - quartz (14808-60-7)	
Listed on IARC (International Agency for Research on Cancer), Listed as carcinogen on NTP (National Toxicology Program)	
IARC group	1 - Carcinogenic to humans
National Toxicity Program (NTP) Status	Known Human Carcinogens
In OSHA Hazard Communication Carcinogen list?	Yes

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GHS-US Properties	Classification
Acute toxicity	Not classified
Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitization	May cause an allergic skin reaction.
Germ cells mutagen	Not classified
Carcinogenicity	May cause cancer.
Reproductive toxicity	Not classified
Specific target organ toxicant (single exposure)	Not classified
Specific target organ toxicant (repeated exposure)	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not classified

Potential health effects

Inhalation

Acute : Exposure to respirable crystalline silica is not expected during the normal use of this product. However, acute silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss.

Chronic : Exposure to respirable crystalline silica is not expected during normal use of this product. However, prolonged overexposure to respirable crystalline silica may cause lung disease (silicosis).

Skin

Acute : May cause an allergic reaction in individuals with a sensitivity to *Bacillus thuringiensis* ssp. *israelensis* and/or *Bacillus sphaericus*.

Eye

Acute : May cause mild mechanical irritation.

Ingestion

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

Carcinogenicity : Exposure to respirable crystalline silica dust from the finished product is not expected to occur due to the manner in which the constituents are bound, thus the finished product is not considered carcinogenic under conditions of normal use.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

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

SECTION 14: Transport information

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

SECTION 15: Regulatory information

15.1. US Federal regulations

Bacillus thuringiensis ssp. israelensis (68038-71-1)

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

EPA TSCA Regulatory Flag

XU - XU - indicates a substance exempt from reporting under Chemical Data Reporting Rule (formerly the Inventory Update Reporting Rule), i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 711).

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

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

FIFRA Labelling

EPA Registration Number

85685-3

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

FIFRA Signal word

Caution

FIFRA Precautionary Statement

KEEP OUT OF REACH OF CHILDREN.

FIFRA Hazards to Humans and Domestic Animals

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

FIFRA First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, and then continue rinsing eyes. Call poison control center or doctor for treatment advice. If on skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.

FIFRA Environmental Hazards

Do not contaminate water when disposing of equipment washwaters or rinsate. Do not apply to treated, finish drinking water reservoirs or drinking water receptacles when the water is intended for human consumption.

15.2. US State regulations

No additional information available

SECTION 16: Other information

Date of issue : 31 March 2014
Revision date : 10 May 2018
Supersedes : 14 August 2017

Indication of changes:

Revised Sec. 1 - added material numbers.

SDS US (GHS HazCom 2012) - CGP

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