

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Trade name : FourStar CRG Multi-Brood Controlled Release Granule
 Synonyms : EPA Reg. No.: 85685-2, 100514311, 100519509

1.2. Recommended use and restrictions on use

Recommended use : Multi-brood microbial insecticide.
 Restrictions on use : Keep out of reach of children. Avoid contact with eyes, skin or clothing. Do NOT take internally.

1.3. Supplier

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

www.centralmosquitocontrol.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) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

May cause an allergic skin reaction
 May cause cancer
 Causes damage to organs 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.
 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 skin irritation or rash occurs: Get medical advice/attention.
 If exposed or concerned: Get medical advice/attention.
 Get medical advice/attention if you feel unwell.
 Wash contaminated clothing before reuse.
 Store locked up.
 Dispose of contents/container to in accordance with local/regional/national/international regulations

Supplemental information :

The finished product is not considered carcinogenic because of the product's physical form.

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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	9
Bacillus thuringiensis ssp. israelensis	(CAS-No.) 68038-71-1	1
4-Aminobenzoic acid	(CAS-No.) 150-13-0	0.3
Silica, crystalline - quartz	(CAS-No.) 14808-60-7	68.79
Other ingredients	(CAS-No.) N/A	Balance

SECTION 4: First-aid measures

4.1. Description of first aid measures

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

First-aid measures after skin contact : IF ON SKIN: Wash with plenty of soap and water. Wash skin with plenty of 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. 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 skin contact : May cause an allergic skin reaction in individuals with a sensitivity to the bacteria mixture which includes the bacillus ssp. strain of bacteria. May cause an allergic skin reaction in individuals with a sensitivity to 4-Aminobenzoic acid.

Chronic symptoms : Causes damage to lungs, silicosis through prolonged or repeated exposure via inhalation.

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 : Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Avoid heavy hose streams.

5.2. Specific hazards arising from the chemical

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

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Do not allow fire fighting water to escape into waterways or sewers. Do not use direct stream of water. A direct stream of water may spread fire. Ventilate closed spaces before entering. Do not breathe gas/fumes/vapor/spray. Keep unauthorized personnel away.

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

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapors/spray.

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. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Provide local exhaust or general room ventilation. Wear personal protective equipment. Avoid contact with skin and eyes.

Hygiene measures : Separate working clothes from town clothes. Launder separately. 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 : Keep container tightly closed. Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible materials : Strong acids. Strong bases. Strong oxidizers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

4-Aminobenzoic acid (150-13-0)		
AIHA	WEEL TWA (mg/m ³)	5 mg/m ³
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.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

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

Respiratory protection:

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Not required with normal use. However, mixers/loaders must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95.



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Gray to sand colored granules
Color	: Gray to sand
Odor	: Mild
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 2.05
Bulk density	: 51.2 lbs/ft ³
Solubility	: Practically insoluble
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. Hazardous polymerization will not occur.

10.4. Conditions to avoid

Excessive heat.

10.5. Incompatible materials

Strong acids. Strong oxidizing agents. Strong bases.

10.6. Hazardous decomposition products

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

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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
4-Aminobenzoic acid (150-13-0)	
LD50 oral rat	> 6 g/kg
IARC group	3 - Not classifiable
Silica, crystalline - quartz (14808-60-7)	
Listed on IARC (International Agency for Research on Cancer), Listed as carcinogen on NTP (National Toxicology Program)	
IARC group	1 - Carcinogenic to humans
National Toxicity Program (NTP) Status	Known Human Carcinogens
In OSHA Hazard Communication Carcinogen list?	Yes

GHS-US Properties	Classification
Acute toxicity	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 : Exposure may cause mechanical irritation, May cause an allergic reaction in individuals with a sensitivity to *Bacillus thuringiensis ssp. israelensis* and/or *Bacillus sphaericus*, May cause an allergic skin reaction in individuals with a sensitivity to 4-Aminobenzoic acid.

Eye

Acute : Exposure may cause mechanical eye irritation.

Ingestion

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

Mutagenicity : Not classified.

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.

Reproductive Effects : Not classified.

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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
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	No data available

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).

4-Aminobenzoic acid (150-13-0)

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

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

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

FIFRA Labelling

EPA Registration Number

85685-2

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.

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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. 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.
FIFRA 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 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 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 directly to treated, finished 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 : 07 May 2018

Indication of changes:

SDS update.

SDS US (GHS HazCom 2012) - CGP

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



Specimen Label

Multi-Brood Controlled Release Granule

ACTIVE INGREDIENTS:

<i>Bacillus sphaericus</i> Serotype H5a5b, strain 2362 solids, AML SPH 88*	9.0%
<i>Bacillus thuringiensis</i> subspecies <i>israelensis</i> Strain BMP 144 solids, spores and insecticidal toxins*	1.0%
OTHER INGREDIENTS:	90.0%
TOTAL:	100.0%

* Equivalent to 90 Bs ITU/mg and 70 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**

FIRST AID

If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. • 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, and then continue rinsing eyes. • Call a poison control center or doctor for treatment advice.
If on skin	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.

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.

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.

DIRECTIONS FOR USE

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

APPLICATION DIRECTIONS

FourStar CRG is a highly selective multi-brood microbial insecticide granule effective against mosquito larvae in a variety of aquatic habitats for up to 60 days. **FourStar CRG** releases effective levels of *Bacillus sphaericus* and *Bacillus thuringiensis* subspecies *israelensis* to the water surface and throughout the water column over time.

FourStar CRG can be applied prior to flooding, (i.e. "pre-hatch") to known breeding sites that flood intermittently. In such areas, one application of **FourStar CRG** prevents adult mosquito emergence for up to four subsequent floodings or up to 60 days. The actual length of control depends on the duration and frequency of flooding events. Alternate wetting and drying will not reduce granule effectiveness.

Apply uniformly according to rates listed below by conventional aerial or ground equipment as needed to maintain mosquito control. Reapply after 60 days under typical environmental conditions. More frequent applications may be made if monitoring indicates that larval populations have reestablished or weather conditions have rendered initial treatments ineffective.

Mosquito species effectively controlled by FourStar CRG.

- *Aedes vexans*
- *Anopheles quadrimaculatus*
- *Coquillettidia perturbans*
- *Culex spp.*
- *Ochlerotatus melanimon (Aedes melanimon)*
- *Ochlerotatus nigromaculis (Aedes nigromaculis)*
- *Ochlerotatus sollicitans (Aedes sollicitans)*
- *Ochlerotatus stimulans (Aedes stimulans)*
- *Ochlerotatus triseriatus (Aedes triseriatus)*
- *Psorophora columbiae*
- *Psorophora ferox*

APPLICATION SITES

Apply **FourStar CRG** pre-hatch or post-hatch as directed above to temporary and permanent water sites which support mosquito larval development.

FourStar CRG 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: freshwater marshes, cattail marshes, woodland pools and meadows, grassy swales, floodplains, flood water, standing water, roadside ditches, canals, catch basins, storm drains, storm water collection areas and impoundments, lakes and ponds, abandoned swimming pools, ornamental fountains and ponds, water gardens, water holding receptacles, and other natural and man-made sites where mosquitoes may develop.

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 7.5 to 10 lbs of **FourStar CRG** per acre. Use 10 to 20 lbs of **FourStar CRG** 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 Disposal: 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.

