

Current version date: 2024/09/01

Revision date: 2029/08/31

SECTION 1. IDENTIFICATION**GHS product identifier:****Identification as on the label/Trade name:** CODLGRAN™**Other means of identification:****Additional information/Alternative name:** None**Recommended use of the chemical and restrictions on use:****Identified uses:** Suspension concentrate biological agent for the control of codling moth on pome fruit crops.**Uses advised against:** Use only as directed.**Supplier's details:**

River Bioscience (Pty) Ltd
5th Floor, Fairview House, Fairview Office Building
66 Ring Road,
Greenacres,
Gqeberha,
6045,
South Africa

Emergency phone number:

River Bioscience Head Office: +27 41 373 1409 (office hours)

Griffon Poison Information Centre: +27 82 446 8946 (national / 24 hours)

Poison Information Helpline: +27 861 555 777 (national / 24 hours)

Hazcall24 (Transport / Spill Emergency): +27 860 444 4111 (national / 24 hours)

SECTION 2. HAZARD IDENTIFICATION**Classification of the substance or mixture:****The mixture is classified according to:** United Nations, Globally Harmonized System of Classification, 9th Edition, published 2021.

Hazard classes	Hazard classification category
This mixture does not meet any of the criteria for classification	

GHS label elements, including precautionary statements:

Signal Word: None

Hazard Statements:

Read the label before use.

Keep out of reach of children and animals.

Hazard pictograms: None

Precautionary statements: None

Other hazards which do not result in classification:

None known.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture:

Mixture.

Chemical identity of the ingredients (IUPAC)	CAS –No.	Concentration (% v/v)	Classification
	EC-No.		GHS 9 th Edition
Cydia pomonella granulovirus (CpGV-MEX)	N/A	40-50%	No information
	N/A		
Glycerine	56-81-5	40-50%	Not classified as hazardous
	200-289-5		

Mixture components are not classified as hazardous or as substances of concern, where the supplier company voluntarily discloses mixture information it is for the purposes of transparency.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4. FIRST AID MEASURES

Description of necessary first aid measures:

In case of inhalation: If inhaled, remove person to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. In case of discomfort seek medical attention.

In case of skin contact: If skin irritation or rash occurs, wash with plenty of soap and water. Take off contaminated clothing and wash it before re-use. Seek medical advice if symptoms persist.

In case of eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. Seek medical advice if symptoms persist.

In case of ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention if you feel unwell.

Most important symptoms/effects, acute and delayed:

No adverse effects known.

Indication of immediate medical attention and special treatment needed, if necessary:

Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURE

Extinguishing media:

Suitable extinguisher media: Use an extinguishing agent suitable for the surrounding fire: alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media: Water jets or high-pressure water jets.

Special hazards arising from the mixture:

Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons, aldehydes and other products of combustion.

Special protective actions for fire-fighters:

Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Be sure to use an approved/certified respirator or equivalent.

Water spray should only be used to keep fire-exposed containers cool, flush spills away from exposures, disperse vapours and protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, municipal sewers, or drinking water supply.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

For non-emergency personnel: Isolate area. Remove possible causes of ignition-do not smoke. Keep unnecessary and unprotected personnel from entering the area. Avoid inhalation and contact with skin. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

For emergency responders: Isolate area. Remove possible causes of ignition-do not smoke. Keep unnecessary and unprotected personnel from entering the area. Avoid inhalation and contact with skin. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions:

Prevent drift of spray mist onto other crops, grazing, rivers, dams and areas not under treatment. Prevent contamination of food, feeds and drinking water.

Methods for containment and cleaning up:

For small spills: Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in well labelled container for disposal. Scrub the area with 1-5% bleach solution. Rinse empty container three times with a volume of water equal to 10% of the volume of the container. Add the rinsing to the contents of the spray tank. Destroy empty container and do not use for any other purpose. Dispose and or manage in accordance with the requirements contained in R634 Waste Classification & Management Regulations, R635 National Norms & Standards for the Assessment of Waste for Landfill Disposal and R636 National Norms & Standards for Disposal of Waste to Landfill.

For large spills: Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in well labelled container for disposal. Scrub the area with 1-5% bleach solution. Rinse empty container three times with a volume of water equal to 10% of the volume of the container. Add the rinsing to the contents of the spray tank. Destroy empty container and do not use for any other purpose. Dispose and or manage in accordance with the requirements contained in R634 Waste Classification & Management Regulations, R635 National Norms & Standards for the Assessment of Waste for Landfill Disposal and R636 National Norms & Standards for Disposal of Waste to Landfill.

Reference to other sections:

See section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

See section 13 for information on disposal.

Additional information:

None know.

SECTION 7. HANDLING AND STORAGE**Precautions for safe handling:**

Keep away from children and animals. Wear overalls and gloves while handling. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not get in eyes or on skin or clothing, workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Advice on general safe handling: Observe directions on label and instructions for use.

Advice on general occupational hygiene: Do not eat drink or smoke when handling this product.

Conditions for safe storage, including incompatibilities:

While in use, the container must be kept cool and in the shade. The container must not be exposed directly to sunlight. Store away from foodstuffs and animal feed. Store at <10°C until use.

Specific storage requirements: Store (in a refrigerator) away from food and animal feeds. CODLGRAN™ should be kept refrigerated (at $\pm 6^{\circ}\text{C}$) until use but may also be used if kept for 3 months at ambient temperatures (at $\pm 20^{\circ}\text{C}$). CODLGRAN™ must be used within 6 months from date of manufacture. While in use, the CODLGRAN™ container must be kept cool and in the shade. The container should not be exposed directly to sunlight

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Control parameters:**

Occupational exposure limits (OEL): None known.

Biological exposure indices (BEI): None known.

Additional exposure limits under the specific conditions of use: None known.

Exposure control:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. A Risk Assessment should be conducted before handling is to commence to determine specific exposure control. Ensure that eyewash stations and safety showers are close to the workstation location.

Appropriate engineering controls:

Use in a well-ventilated area.

Individual protection measures, such as personal protective equipment (PPE):

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Use safety glasses. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Ensure that eyewash stations are close to the workstation location.

Skin protection: Wear appropriate clothing for task or operation, when opening the container, preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist. Wear closed shoes. Use leather or rubber gloves. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Respiratory protection: For most conditions no, respiratory protection should be needed; however, if discomfort is experienced or when the Risk Assessment shows respiratory protection is required, use an approved air-purifying respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Physical state: Liquid (homogenous suspension).

Colour: Light brown.

Odour: Odourless.

Melting point/Freezing point (°C): Not applicable.

Boiling point/range (°C): Not applicable.

Flammability: Not applicable.

Upper/lower flammability/explosive limits: Not applicable.

Flash point (°C): Not applicable.

Auto-ignition temperature (°C): Not applicable.

Decomposition temperature: Not applicable.

pH (at concentration): 5,5.

Viscosity (dynamic) (cP): 6.72 mPA/s.

Water solubility (g/l) at 20°C: Insoluble.

n-Octanol / Water partition coefficient: Not applicable.

Vapour pressure (20°C): Not applicable.

Density / relative density (20°C) (g/ml): 1.1112g/ml.

Relative vapour density: Not applicable.

Particle characteristics (nm): Not applicable.

Physical hazards:

None known

SECTION 10. STABILITY AND RELIABILITY

Reactivity:

Product is stable. No specific test data related to reactivity available for this product or its ingredients.

Chemical stability:

Shelf-life of 6 months from date of manufacture if stored at temperature $\leq 6^{\circ}\text{C}$, or estimated shelf life of 3 months if stored at room temperature 20°C .

Possibility of hazardous reactions:

Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid:

Heat (particularly above 38°C), direct UV irradiation on the product and alkaline or acidic conditions (pH below 4 or above 9) will cause rapid degradation and neutralisation.

Incompatible materials:

Copper based products as product will cause degradation.

Hazardous decomposition products:

Not known.

SECTION 11. TOXICOLOGICAL INFORMATION**Toxicokinetics, metabolism and distribution:**

Non-human toxicological data: None known.

Information on toxicological health effects:

Acute toxicity: Mixture is not acutely toxic.

CpGV-Mex

Non-infectious to mammals

Glycerine

Acute oral toxicity LD50 in rats >12600 mg/kg³ (literature).

Inhalation toxicity LC50 (1 h) in rats >570 mg/m³ (literature).

Skin corrosion/irritation: Not a skin irritant.

Serious eye damage/irritation: Not an eye irritant.

Respiratory or skin sensitization: Not a skin sensitizer.

Germ cell mutagenicity: No information available.

Carcinogenicity: IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

Reproductive toxicity: No information available.

STOT-single exposure: No information available.

STOT-repeated exposure: No information available.

Aspiration hazard: No information available.

Information on the likely routes of exposure:

No information available.

Symptoms related to the physical, chemical, and toxicological characteristics:

No known symptoms.

Delayed/Immediate/Chronic effects from short- and long-term exposure:

No information available.

Numerical measures of toxicity (ATE):

ATE Calculation not required.

Interactive effects:

No information available.

Other information:

None.

SECTION 12. ECOLOGICAL INFORMATION**Information on ecotoxicological effects:****Toxicity:****CpGV-Mex**

No adverse effects of product to aquatic life or birds as these are non-host organisms.

Glycerine

Fish: LC50 (48 h) for Carp >1000mg/l.

Daphnia: EC50 (3 h) for Daphnia magna(daphnia) >1000mg/l.

Persistence and degradability:**CpGV-Mex**

Likely to be brief. Exposure to UV irradiation would render virus ineffective within a couple of days.

Bio-accumulative potential:**CpGV-Mex**

Where exposed in the environment, UV degradation is likely to occur..

Mobility in soil:**CpGV-Mex**

Not very mobile in soil..

Other adverse effects: No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods:

Waste treatment methods: Use all product in accordance with directions for use. If waste cannot be avoided, dispose of contents at a local waste disposal facility or pesticide disposal program if available. Alternatively dispose of contents in accordance with national or international regulations.

Product/packaging disposal: Rinse empty container three times with a volume of water equal to 10% of the volume of the container. Add the rinsing to the contents of the spray tank. Destroy empty container and do not use for any other purpose. Do not burn empty containers (or product). Dispose of container in accordance with national or international regulation.

Physical/chemical properties affecting disposal: None known.

Special precautions for incineration or landfill: Do not burn container or product. Recycle as far as possible.

SECTION 14. TRANSPORT INFORMATION

Transporting/Shipping information:

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	Not regulated	Not regulated	Not regulated
UN Proper shipping name:	Not required	Not required	Not required
Transport hazard class:	Not required	Not required	Not required
Packaging group:	Not required	Not required	Not required
Environmental hazards:	No	No	No
Special precautions for user:	Not required	Not required	Not required
Transport in bulk according to IMO instruments:	Not required	Not required	Not required

SECTION 15. REGULATORY INFORMATION

Safety, health, and environmental regulations specific for the product in question:

Regulatory status of the substance/mixture: Registered under the "Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No 36 of 1947), regulating agricultural remedies in South Africa.

Relevant safety/health/environmental regulations: The labels and SDS of this product complies with the Occupational Health and Safety Act, 1993 (Act N 85 of 1993), and the Regulations for Hazardous Chemical Agents, 2021, in South Africa.

SECTION 16. OTHER INFORMATION

Preparation date and revision number:

Current version date:	Current version:
2024/06/01	1.0 / 2024
2024/09/01	2.0 / 2024

Revision changes: Section 1: Update of emergency phone numbers.

Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Notice to readers:

Employers should use this information only as a supplement to other information gathered by them and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.