

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: Heligen®

Recommended Use: Product used as an agricultural biological insecticide

COMPANY DETAILS:

Company Name: AgBiTech LLC
Street Address: 14401 Sovereign Rd, Suite 111, Fort Worth, TX, 76155, USA
Postal Address: PO Box 163
Fort Worth, TX, 76155, USA
Telephone: +1 817.799.4422
Fax: +1 866.930.7955
Emergency Telephone: +1 573.864.4259
Email: usaaccounts@agbitech.com

Opening hours: 08:00 to 17:00, Central Time Zone

2. HAZARD(S) IDENTIFICATION

This material is NOT considered HAZARDOUS in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This material is NOT considered DANGEROUS in accordance with the United Nations Recommendations on the Transport of Dangerous Goods, which sets out the globally harmonised system for the classification and labelling requirements for dangerous goods.

Classification: Nil

Hazard Statement: Nil

Precautionary Statements: Read label before use
Keep cool
Use personal protective equipment as required
Take off contaminated clothing and wash before reuse
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Follow disposal procedures as per the label

For emergency information concerning this product, call the National Pesticide Information Centre (NPIC) at 1-800-858-7378 seven days a week, 6:30 am to 4:30 pm Pacific Time. During other times, call your poison control centre at 1-800-222-1222.

3. COMPOSITION INFORMATION ON INGREDIENTS

Chemical Name:	CAS Number:	Proportion:
Occlusion bodies of the nucleopolyhedrovirus of <i>Helicoverpa Zea</i>	Not Applicable	32%
Glycerol	56-81-5	61%
Water	7732-18-5	7%

Description of the mixture: Solution of the occlusion bodies of the nucleopolyhedrovirus of *Helicoverpa Zea*

4. FIRST AID MEASURES

If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

General notes: Treat exposure symptomatically. Seek medical attention if symptoms develop or persist.

Following inhalation: Remove to fresh air from exposure. Seek medical advice if irritation develops or persists

Following skin contact: Immediately remove contaminated clothing and wash affected areas with soap and plenty of water. Seek medical advice if irritation develops or persists. Launder clothing before reuse.

Following ingestion: Do not induce vomiting. If conscious drink 2-3 glasses of water and seek medical advice. Never give anything by mouth to an unconscious person. Call the Poison Control Centre and show this Safety Data Sheet to a medical practitioner.

Following eye contact: Rinse thoroughly with water for at least 15 minutes and seek medical attention if irritation develops or persists.

5. FIRE FIGHTING MEASURES

Use extinguishing media appropriate to the situation of the fire and its surrounding area. Water spray, carbon dioxide, polymeric foam or dry chemical agents are all suitable media.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Contain a spill and prevent runoff into waterways. If contamination of sewers or waterways has occurred advise appropriate local authorities.

Dealing with a spill may increase the potential for personal exposure. During such operations it is recommended that full protective clothing is worn. Use the personal protective equipment recommended in Section 8 (Exposure controls)

7. HANDLING AND STORAGE

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Mixers/loaders and applicators 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.

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

Store the product in the closed original container in a dry, cool well-ventilated place that is kept below 25°C. For longer term storage, keep refrigerated at 4°C.

Do not store in direct sunlight.

8. EXPOSURE CONTROLS / PERSONEL PROTECTION

Causes moderate eye irritation. Avoid inhalation and contact with eyes, skin or clothing. Avoid breathing spray mist. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property

Appearance	Brown-grey liquid
Odour	Earthy
Odour threshold	Not reported
pH	5.0 (± 0.5)
Melting point/Freezing point	-30 to -25 °C
Boiling point	150°C
Flash point	Not determined (> 100°C)
Evaporation rate	Not reported
Flammability	Not reported
Upper lower flammability/explosive limits	Not applicable

Vapour pressure	Not available
Vapour density	Not available
Specific gravity	1.15g/L
Solubility in water	Water miscible
Solubility in organic solvents	Not reported
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not explosive
Oxidising properties	Not oxidising

10. STABILITY AND REACTIVITY

Reactivity:	This product is stable under normal conditions of use. No dangerous reaction known under normal conditions of use.
Chemical stability:	Stable under normal conditions.
Conditions to avoid:	No conditions known.
Incompatible materials:	This product is compatible with most other chemical compounds
Hazardous reactions:	No data available.

11. TOXICOLOGICAL INFORMATION

Toxicological Endpoint	Value
Acute Toxicity	The acute toxicity of <i>Helicoverpa zea</i> has been tested in a number of mammalian species at rates of up to 3×10^{12} occlusion bodies/kg, and is not considered to be acutely toxic to mammals
Skin irritation	This product is not classified as a skin irritant, but exposure may cause some irritation to the skin Skin irritation tests with Baculovirus species have produced negative results
Eye irritation	This product is not classified as an eye irritant but exposure may irritate the eyes Eye irritation tests with Baculovirus species have produced negative results
Skin sensitisation	May cause skin sensitisation in susceptible individuals
Repeat dose toxicity (Short term)	Repeated exposure may cause an allergic response
Carcinogenicity	No components are classified as

	carcinogenic. No carcinogenic effects were found following repeat dose studies using <i>Helicoverpa</i> species
Mutagenicity	No components are classified as mutagenic. No mutagenic effects were found following repeat dose studies using <i>Helicoverpa</i> species
Reproductive toxicity	No components classified as toxic for reproduction. No reproductive effects were found following repeat dose studies using <i>Helicoverpa</i> species

12. ECOLOGICAL INFORMATION

Ecotoxicity: Birds: No side effects were seen following oral application of baculovirus species to birds.

Fish: No side effects were seen following application of baculoviruses to fresh water
Aquatic invertebrates: No side effects were seen following application of baculoviruses to fresh water.

Persistence and degradability: Baculoviruses are ubiquitous in the environment, their prevalence depending on the frequency of occurrence of arthropod hosts.

Bioaccumulative potential: Not applicable

Mobility in soil: Not applicable.

Results of PBT and vPvB assessment: This mixture does not contain any substances that are assessed to be PBT or vPvB.

Other adverse effects: No other adverse effects reported

Use the product in accordance with label instructions. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

Do not contaminate water when disposing of equipment wash waters or rinsate.

13. DISPOSAL CONSIDERATIONS

Product/Packaging disposal: Triple or preferably pressure rinse containers before disposal. Add rinsate to the spray tank. Do not dispose of undiluted chemicals on site. Break, crush or puncture empty containers and bury in a local authority landfill. If a landfill site is not available then bury containers below at least 500 mm in a disposal pit specifically marked and set up for this purpose, clear of waterways, vegetation and roots.

Waste treatment information: Do not burn empty containers or product
Residues of unused product are regarded as hazardous waste

14. TRANSPORT INFORMATION

Road and Rail Transport: Not classified as Dangerous Good in accordance with United Nations Recommendations on the Transport of Dangerous Goods.

Marine Transport: Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

Air Transport: Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

15. REGULATORY INFORMATION

This material is NOT considered HAZARDOUS in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This material is NOT considered DANGEROUS in accordance with the United Nations Recommendations on the Transport of Dangerous Goods, which sets out the globally harmonised system for the classification and labelling requirements for dangerous goods.

16. OTHER INFORMATION

Supplier Material Safety Data Sheet issued for the first time upon product release.

CONTACT POINT: Anthony Hawes, CEO: +1 573 864 4259

This MSDS summarises our best knowledge of the product's health and safety hazard information and how best to safely handle the product in the workplace. It should be read by all users of the product and appropriate measures taken to limit personal and environmental exposure. When used in conjunction with other products, additional handling and use precautions for the mixture may be required in accordance with the other product's MSDS.

If further information is required to ensure proper and safe handling of the product, the user should contact AgBiTech Pty Ltd. The responsibility for products sold is subject to standard terms and conditions which appear on the product label and are also available on request.

Heligen[®] is a Trademark of AgBiTech