

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

# GEMSTAR<sup>®</sup> LC

## BIOLOGICAL INSECTICIDE

**ACTIVE CONSTITUENT: 2 Thousand Million / mL Polyhedral Occlusion Bodies (OBS) of the Nuclear Polyhedrosis Virus Of *Helicoverpa zea***

For the control of *Helicoverpa* spp. in various crops as specified in the DIRECTIONS FOR USE table

**IMPORTANT: READ THE ATTACHED LABEL BEFORE USING THIS PRODUCT.**

Contents: 10 L

APVMA Approval No: 59042/1209



SIPCAM PACIFIC AUSTRALIA PTY LIMITED  
Level 1, 191 Malop Street Geelong VIC 3220

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# GEMSTAR LC BIOLOGICAL INSECTICIDE

## STORAGE AND DISPOSAL

Store in the closed, original container out of direct sunlight. The product can be stored for short periods (less than seven days) at temperatures below 20°C. For longer-term storage, keep refrigerated at or below 4°C. Product stability is ensured for at least 2 years from date of manufacture if stored under these conditions. Triple or preferably pressure rinse containers before disposal. Add rinsings to the spray tank. Do not dispose of undiluted chemical on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

## SAFETY DIRECTIONS

May irritate the eyes and skin. Avoid contact with eyes and skin. Repeated exposure may cause allergic disorders. Sensitive workers should use protective clothing. When opening the container, preparing spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves. Wash hands after use. After each day's use, wash gloves and contaminated clothing.

## FIRST AID

If poisoning occurs, contact a Doctor or Poisons Information Centre (Phone 13 11 26).

## SAFETY DATA SHEET

For further information, refer to the Safety Data Sheet (SDS) which is available from the supplier or from our web site, [www.sipcam.com.au](http://www.sipcam.com.au).

## NOTICE TO BUYER

This product must be used in accordance with the directions for use. Where this product is not a good of a kind ordinarily acquired for personal, domestic or household use or consumption under the Australian Consumer Law, Sipcam's liability for any direct, indirect or consequential loss which you incur, including, without limitation, loss or damage to crop, loss of equipment, property damage, personal injury or death is limited, at Sipcam's option, to the replacement of the product or the supply of an equivalent product. By opening this package, you agree to be bound by these terms. If you do not agree to these terms, please return the entire unopened package intact to Sipcam or the place in which you purchased this product for a full refund.

**Date of Manufacture:**

**Batch Number:**

**Expiry Date: 2 years after the date of manufacture.**

**This product is NOT a Dangerous Good under the Australian Code for the transport of Dangerous Goods by road and rail.**

**For specialist advice in emergency only, call  
1800 033 111 all hours, Australia wide**

## GHS STATEMENTS

**Not hazardous.**

**RESPONSE P353:** Rinse skin or shower with water.

**P301+P330+P331: IF SWALLOWED:** Rinse mouth. Do NOT induce vomiting. **P370+P378:** Not combustible. Use extinguishing media suited to burning materials.



## DIRECTIONS FOR USE:

Crop	Pest	Rate/ha	Critical Comments
Sorghum	<i>Helicoverpa armigera</i> (Corn earworm, cotton bollworm, tobacco budworm)  <i>Helicoverpa punctigera</i> (Native budworm)	200 mL to 375 mL	<p><b>All crops:</b> Monitor crops closely for <i>Helicoverpa</i> activity. Apply at hatching of larvae. Gemstar LC is most effective on larvae up to 13 mm (and greater again at less than 7mm). Gemstar LC will provide between 60 to 90% control, so should be used in crops where protection against damage is not of paramount concern. Under high pressure or sub-optimal conditions, Gemstar LC alone may be insufficient to reduce populations below threshold and additional management options should be considered.</p> <p><b>Sorghum:</b> Grain Sorghum - apply 3 days after 50% of panicles have reached 100% flowering. Use the higher rate when larger larvae (&gt;7mm and &lt; 13mm) are present and or conditions are not ideal.</p> <p><b>Chickpeas:</b> The addition of 1.0 kg/ha skim milk ~ enhances the performance of Gemstar LC in chickpeas. If larva numbers exceed 6/m, Gemstar LC is unlikely to reduce numbers below threshold.</p> <p><b>Cotton:</b> Gemstar LC is most effective on larvae up to 7mm in length in cotton crops. On this size larvae, Gemstar LC alone will provide a range of control varying between 40 and 90%, with an average of 60% control. These levels of control will mean some damage could still occur. If larva numbers exceed 4/m, Gemstar LC is unlikely to reduce numbers below the threshold.</p> <p>Gemstar LC used alone: Gemstar LC should only be used alone in crops where protection against damage is not of paramount concern, e.g. in the early stages of the season or as part of an Integrated Pest Management (IPM) system where beneficial species are significantly contributing to pest control.</p> <p>Gemstar LC in mixture with a larvicide: Apply Gemstar LC with a compatible larvicide when heliothis larvae numbers exceed 4/m or where protection against damage is of paramount concern.</p> <p><b>Lettuce:</b> Use a non-ionic wetting agent at the rate specified by the manufacturer for use in horticultural crops.</p> <p><b>Maize and Sweetcorn:</b> Best results are achieved when Gemstar LC is used prior to tassel in g.</p> <p><b>Horticultural crops:</b> Use the higher rate when larger larvae (&gt;7mm and &lt; 13mm) are present, or conditions are not ideal or when at an economically important stage of crop development (eg presence of flowers, fruits, etc). Repeat applications on a 2-3 day spray interval will be required where eggs are present.</p> <p>Improve coverage with a registered non-ionic surfactant applied at the label designated rate.</p>
Cereal grains Lucerne Oilseeds Potatoes Pulses		375 mL	
Cotton		500 mL or 500 mL + a registered compatible larvicide at its label rate	
Sweetcorn		500 mL	
Berryfruit Brassicae vegetables Cucurbits Fruiting vegetables Leafy vegetables Legume vegetables Ornamentals Pome fruit Stalk vegetables		375 mL to 750 mL	

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**  
**WITHHOLDING PERIOD (WHP):** NOT REQUIRED WHEN USED AS DIRECTED.

## GENERAL INSTRUCTIONS

Gemstar LC has been specially designed for use in IPM systems. It is a biological insecticide and hence its efficacy is dependent on environmental conditions, application and feeding behaviour of the pest. For this reason, when environmental, crop microclimatic or other conditions are unfavorable for Gemstar LC, control of the pest may be below expectations. The product acts slowly and can take up to 8 days to kill larvae. Speed of kill and efficacy are dependent on climatic conditions. Warm conditions favor the performance of Gemstar LC as the larvae will be feeding actively and moving around. Daytime temperatures of 25°C to 35°C are ideal for Gemstar LC performance. Gemstar LC needs to be ingested to be effective. Good coverage of the target area, where the larvae are feeding, is essential. Gemstar LC will not control larvae that do not feed on the treated area, e.g. larvae sheltered in the corn cob or lettuce heart. The level of control achieved depends on size, location and feeding behaviour of larvae at the time of application as well as coverage of the target area. Affected larvae may take several days to die, during which time feeding is reduced, but some feeding damage may occur. Do not rely solely on Gemstar LC control for *Helicoverpa* where there is nil tolerance of feeding damage. Gemstar LC has short residual activity and re-treatment may be required at 2 - 3 day intervals depending on egg counts and crop growth rates. As Gemstar LC is readily degraded in the presence of ultra violet light, application in the late afternoon or early evening will provide the maximum opportunity for larvae to ingest the product before it is degraded.

## MIXING AND APPLICATION

**Mixing:** Shake the container well before using. Water pH should be neutral (pH 7.0) for optimum performance. Partially fill the spray tank with clean water and add the required volume of product to the water while agitating. Top up the tank with clean water to the required volume. Gemstar LC should be applied as soon after mixing as possible. The virus can be rendered inactive if the mixture is left to stand overnight.

**Application:** Thorough coverage of the target area is essential. Apply in sufficient carrier and using suitable application parameters (nozzles, pressure, boom height, speed, swath width, etc.) to ensure thorough coverage of the target area.

Ground Application: Apply in a minimum of 100L water /ha

Aerial Application – Low Volume: Apply in 30L water /ha

Aerial Application – Ultra Low Volume: Apply in 2-3L carrier oil /ha. Use a refined petroleum oil carrier (eg Canopy® or D-C Tron® Plus) as per the label instructions of the carrier.

**Maize and Sweetcorn: Up to Tasselling:** Gemstar LC may be applied by ground boom or aerial spray equipment. However, for best results, application by ground rig is recommended. **Silking:** apply Gemstar LC only in ground-driven spray equipment, preferably through booms fitted with droppers. Application by aerial equipment is not recommended as coverage of the lower silks is less effective and control may be reduced.

**Lettuce and other horticultural crops:** Apply by ground rig, in a minimum of 400 L water/ha.

Further information can be obtained from Sipcam Pacific Australia Pty Ltd or your local reseller.

## COMPATIBILITY

Gemstar LC may be mixed with many commonly used products, including the larvicides Larvin\* 375 and Thiodan\* EC. Products should be added to the spray tank separately and the spray mixture used promptly. For the latest information on compatibility of Gemstar LC with other products, contact Sipcam Pacific Australia Pty Ltd or your local reseller.

## PRECAUTIONS

Re-entry Period: Do not allow entry into treated areas until spray has dried. When prior entry is necessary, wear overalls and elbow-length rubber gloves. Clothing must be washed after each day's use.

## PROTECTION OF LIVESTOCK, WILDLIFE AND OTHERS

DO NOT contaminate streams, rivers or waterways with the product or used containers.

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