

GROUP 11 INSECTICIDE

**THURICIDE® -HPC**

**HIGH POTENCY AQUEOUS CONCENTRATE**

BIOLOGICAL INSECTICIDE COMMERCIAL

**AQUEOUS CONCENTRATE**

**READ THE LABEL BEFORE USING**

**GUARANTEE:**

*Bacillus thuringiensis* subspecies *kurstaki* strain SA-12 - 4.000 I.U./mg\*

\*Equivalent to 4.2 Billion International Units per litre

**KEEP OUT OF REACH OF CHILDREN**

**Potential Sensitizer**

Store out of direct sunlight at temperatures between 0°C and 25°C

Protect from freezing

REGISTRATION NO.: 11302  
PEST CONTROL PRODUCTS ACT

**NET CONTENTS: 20 L**

LOT NO.

DATE OF MANUFACTURE:

USE WITHIN 6 MONTHS OF DATE OF MANUFACTURE

Valent BioSciences Corporation

CERTIS

Certis USA, L.L.C.

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Columbia, MD 21046

## **PRECAUTIONS KEEP OUT OF REACH OF CHILDREN**

May cause sensitization. Avoid contact with skin, eyes or clothing. Wear a long sleeved shirt, long pants, water proof gloves when handling, mixing/loading or applying the product and during all clean-up/ repair activities. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

## **FIRST AID**

IF SWALLOWED, Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person. IF ON SKIN OR CLOTHING, take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre 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. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product registration Number with you when seeking medical attention.

## **TOXICOLOGICAL INFORMATION**

Treat symptomatically.

## **RESISTANCE MANAGEMENT STATEMENT**

For resistance management, please note that THURICIDE HPC contains a Group 11 insecticide. Any insect population may contain individuals naturally resistant to THURICIDE HPC and other Group 11 insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance:

- Where possible, rotate the use of THURICIDE HPC and other Group 11 insecticides with different groups that control the same pests in a field.
- Use tank mixtures with insecticides from a different group when such use is permitted.
- Insecticide use should be based on an IPM program that includes scouting, record keeping, and considers cultural, biological and other chemical control practices.
- Monitor treated pest populations for resistance development.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for specific site and pest problems in your area.
- For further information or to report suspected resistance, contact Certis USA at (800) 847- 5620 or at [www.certisusa.com](http://www.certisusa.com).

## DIRECTIONS FOR USE

**GENERAL:** THURICIDE HPC is a biological insecticide and is intended for use against leaf-chewing larvae (caterpillars) of lepidopterous species. Apply at first sign of infestation when worms are small and repeat at 7-10 day intervals when needed to maintain control. THURICIDE HPC attacks the larval gut when eaten by the insect so thorough underleaf coverage is essential. After eating THURICIDE HPC, worms stop feeding and die within 12-72 hours. On agricultural crops, THURICIDE HPC may be applied up to the day of harvest. Add a sticker, adhesive deposit builder where heavy dew or rain is encountered.

**MIXING:** Always shake or stir, THURICIDE HPC thoroughly before putting recommended amount into a nearly filled spray tank. Maintain agitation. Do not allow diluted sprays to stand in the tank for more than 12 hours. Combinations with chemical insecticides, fungicides, spreader-stickers, and stickers in the tank are generally not harmful to THURICIDE HPC if the mix is used promptly.

## TREE APPLICATIONS

**GROUND APPLICATION ONLY:** Use the recommended amount of THURICIDE HPC in 1000 litres of water per hectare in high pressure, high gallonage hydraulic sprayers. For mistblowers use recommended amount in 100 litres of water per hectare. Wet foliage thoroughly but not to the point of excessive runoff. To prevent wash-off by rain, add a sticker to the finished spray.

<b>Pest</b>	<b>Crop</b>	<b>BUI's Per Hectare</b>	<b>Litres Per Hectare</b>
Bagworm	Ornamentals and shade trees in farm woodlots, municipal parks and rights-of-way	20-30	4.80-7.14
Elm Spanworm		20-30	4.80-7.14
Fall Spanworm		20-30	4.80-7.14
Gypsy Moth*		30-50	7.14-12.0
Spring & Fall Cankerworm		12-20	2.90-4.80
Forest Tent Caterpillar	Balsam fir and Spruce trees in Christmas Tree plantations, farm Woodlots, Municipal parks And rights-of-way	12-20	2.90-4.80
Eastern Spruce Budworm**		20-30	4.80-7.14
Western Spruce Budworm		30-40	7.14-9.50

\* Spray when leaf expansion reaches 40-50% or if reinfestation occurs, spray about 14 days after the first application.

\*\* Apply during 3rd-4th instar. Also consider the opening of the bud cap to ensure foliage exposure. If larval densities are high, repeat spray 3-5 days later.

Note: Before using this product, consult regional Canadian Forestry Service officers or provincial forest authority for information on dosage, timing and method of application.

## AGRICULTURAL AND GREENHOUSE APPLICATIONS

**Ground Application:** Use recommended amount of THURICIDE HPC in a minimum of 200 litres of water per hectare depending on type of equipment and crop.

### **Aerial Applications:**

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rate and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

### **Use Precautions:**

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *Basic Knowledge Requirements for Pesticide Education in Canada: Applicator Core and Aerial Module*, developed by CAPCO.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

### **Operator Precautions:**

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

**Product Specific Precautions:**

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at (301)604-7340 or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

**Volume:** Apply the recommended rate in a minimum spray volume of 1.0 litre per hectare.

**Application Rates for THURICIDE®HPC:**

THURICIDE HPC should be applied undiluted by aerial application equipment. Dilute with minimal quantities of water only when required to improve deposit. Best results can be expected when THURICIDE HPC is applied to dry foliage with calibrated aircraft capable of obtaining droplet sizes below 300 microns and preferably in the range of 50-150 microns. If dilution is necessary fill the mix tank or plane hopper with the desired quantity of water. Start the mechanical or hydraulic agitation to provide moderate circulation before adding THURICIDE HPC. Add the recommended rate of THURICIDE HPC to the tank or plane hopper and agitate until uniformly suspended. Do not mix more THURICIDE HPC than can be applied in a 12-hour period. If using undiluted product, continual mixing is not necessary and should be avoided.

<b>Pest</b>	<b>Crop</b>	<b>Litres Per Hectare</b>
Cabbage Looper	Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Celery, Kale, Lettuce, Mustard Greens, Potatoes, Spinach, Tomatoes	2.00-4.25
Diamondback Moth and Imported Cabbageworm	Broccoli, Brussels Sprouts, Cabbage, Cauliflower	2.00-4.25
Essex Skipper	Timothy Mixtures and Other Forage grasses	1.75-2.25
Hornworms	Tobacco, Tomatoes	0.75-1.50
Rangeland Caterpillar	Rangeland	1.50-3.50

<b>Pest</b>	<b>Greenhouse Use</b>	<b>Litres per 1000 L of Water</b>
Cabbage Looper	Chrysanthemum	5.00
Omnivorous Leafroller	Roses	5.00
Cabbage Looper	Tomatoes	5.00
Hornworms	Tomatoes	2.50-5.00

**STORAGE**

Store out of direct sunlight at temperatures between 0°C and 25°C. Cooler storage temperatures are preferred. Keep containers tightly closed. Store container upright and keep tightly closed when not in use.

After extended storage, shake or stir contents to assure a uniform suspension. Use product within 6 months of date of manufacture.

## **DISPOSAL**

1. Triple -or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

## **NOTICE TO USER**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

**IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING CALL 1-800-255-3924.**

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