

58200-9

IGENE Biotechnology, Inc

12/19/2002

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CLANDOSAN®618  
CHITIN NEMATOCIDE

## ACTIVE INGREDIENTS:

Chitin (Poly-N-acetyl-D-glucosamine)-Protein

25%

## OTHER INGREDIENTS

75%

**ACCEPTED**

DEC 19 2002

Under the Federal Insecticides,  
Fungicides, and Rodenticides Act,  
as amended, for the pesticide  
registered under  
EPA Reg. No. 58200-9FOR ORNAMENTALS AND LAWN AND TURF GRASSES  
[FOR AGRICULTURAL CROPS]

U.S. PATENT NO. 4,536,207

OTHER U.S. AND FOREIGN PATENTS PENDING

EPA EST. 54137-LA-001

**KEEP OUT OF REACH OF CHILDREN****CAUTION****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 a poison control center or doctor for further treatment
- If on skin:
- Take off contaminated clothing
  - Rinse skin immediately with plenty water (15-20 minutes)
  - Call poison control center or doctor for treatment advice
- If in eyes:
- Hold eye open and rinse slowly and gently with water (15-20 minutes)
  - Remove contact lenses if present after first 5 minutes, then continue rinsing with water
  - Call a poison control center or doctor if irritation persists for further treatment
- If swallowed:
- Call a poison control center or doctor immediately for treatment advice
  - Do not give anything by mouth to an unconscious person
  - Have person sip a glass of water if able to swallow
  - Do not induce vomiting unless told to do so by a poison control center or doctor

For emergency information on ClandoSan®618, call 1-800-346-6421, M-Fri 8:30am-4:30pm. After 5pm call your poison control center.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**PRECAUTIONARY STATEMENTS****HAZARDS TO HUMANS (& DOMESTIC ANIMALS)**

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing.

**PERSONAL PROTECTIVE EQUIPMENT**

Applicators and other handlers must wear:

- o Long-sleeved shirt and long pants
- o Chemical-resistant gloves
- o Shoes plus socks
- o Protective eyewear

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

**ENVIRONMENTAL HAZARD**

For terrestrial uses, do not apply directly to water, 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 water.

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FRONT PANEL (CONTINUED)

1988 IGENE Biotechnology, Inc.  
ClandoSan®618 is a trademark of IGENE Biotechnology, Inc

NET WEIGHT 50 LBS.  
(22.7 Kg)

IGENE Biotechnology, Inc.  
9110 Red Branch Road  
Columbia, Maryland 21045-2024  
1-800-346-6421

EPA REG. NO. 58200-9

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**MATERIAL SAFETY DATA  
SECTION I: IDENTIFICATION**

**Product Name:** ClandoSan®618

**Description:** Dried granular chitin-protein material that is isolated from crustacean exoskeletons, especially crab and shrimp shells, and blended with agricultural grade urea and an organic buffer.

**SECTION II: PHYSICAL & CHEMICAL CHARACTERISTICS**

**Boiling Point:** N/A  
**Vapor Pressure (mm HG):** N/A  
**Vapor Density (air=1):** N/A  
**Solubility in Water:** Insoluble  
**Melting Point:** N/A  
**Appearance and Odor:** Tan granule with faint fishlike ammonia odor, accentuated after irrigation.  
**Bulk Density:** 34-45 lbs./cu. ft.  
**Evaporation Rate:** N/A

**SECTION III: FIRE & EXPLOSION HAZARD**

**Flash Point:** N/A  
**Flammability Limits:** N/A  
**LEL:** N/A  
**UEL:** N/A

**Extinguisher Media:**  
**Special Fire Fighting Procedures:** None known  
**Unusual Fire and Explosion Hazard:** None known

**SECTION IV: REACTIVITY DATA**

**Incompatibility (Materials to Avoid):** None known  
**Hazardous Decomposition Products:** N/A  
**Hazardous Polymerization:** None known

**SECTION V: HEALTH HAZARD DATA**

**Routes of Entry:** Inhalation, skin contact, ingestion  
**Carcinogens:** None known  
**Emergency First Aid Procedures**  
**Eye Contact:** In case of contact with eyes hold eye open and rinse slowly with plenty of water (15-20 minutes). Remove contact lenses if present after first 5 minutes, then continue rinsing with water. Call a poison control center or doctor if irritation persists.  
**Inhalation:** Move to fresh air. Call 911 if person is not breathing. Then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment.  
**Ingestion:** Call a poison control center or doctor immediately for treatment advice.

**SECTION VI: PROTECTION MEASURES**

**Respiratory Protection:** Not required  
**Protective Gloves:** Required  
**Eye Protection:** Avoid contact with eyes.

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## PRODUCT DESCRIPTION

ClandoSan®618 is the registered trademark of IGENE Biotechnology, Inc. for a dried, granular chitin-protein material that is isolated from the tough polymer matrix of crustacean exoskeletons, especially crab and shrimp shells, and processed into pellets or granules by patented and patent pending processes developed by IGENE Biotechnology, Inc.

The commercial ClandoSan®618 product is composed of a blend of the crustacean chitin-protein complex with agricultural grade urea and an organic buffer.

The ClandoSan®618 product acts in soils to stimulate the growth of normal soil microorganisms that produce enzymes that destroy harmful nematodes and their eggs.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For control of all plant-pathogenic nematodes.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

☐ Coveralls    ☐ Chemical-resistant gloves    ☐ Shoes plus socks    ☐ Protective eyewear

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**APPLICATION METHODS:****PRE-PLANT SOIL INCORPORATION**

Till in ClandoSan®618 on a broadcast or band basis, or otherwise thoroughly mixed into soil 2-4 weeks before planting to stimulate proliferation of actinomyces and other soil microorganisms, which are responsible for the "earthy aroma" of freshly plowed fields.

For broadcast and band application under field, home garden, and nursery conditions, till in the product to a depth of 6-8 inches below the surface where plant roots commonly extend and where plant pathogenic nematodes tend to proliferate. The same equipment may be used for both band and broadcast applications.

For bulk soil treatment in greenhouse, home garden and nursery situations, sieve soil to remove large particles and crop debris and then blend with ClandoSan®618 in an appropriate mixer to assure homogenization with little or no segregation of particles.

**POST-PLANT SURFACE APPLICATION**

For post-plant surface application to lawns, turf grasses, sod farms, golf course greens and fairways, spread ClandoSan®618 at any point in the growing season using conventional applicators, and immediately irrigate to assure adequate subsurface penetration.

**USE SITES**

Fruits and Nuts	Includes cane berries, bush berries, vine fruits, strawberries, cranberries, pome fruits, stone fruits, nut crops -- tree and shrub (e.g., pecan, filbert) and other temperate fruits
Tropical and Subtropical Fruits and Nuts	Citrus, banana, and plantain, palm fruits and nuts (e.g., date, coconut), pineapple, and other fruits and nuts
Beverage Crops	Includes cocoa, coffee, tea, chicory, mint
Vegetables	Includes leaf/stem, root, seed and pod, fruiting vegetables, and cucurbits, including commercial annual (e.g., tomato, bean) and commercial perennial (e.g., asparagus, rhubarb); annual legumes (e.g., crotalaria, soybean)
Greenhouse (Commercial)	Includes nursery/seed crop
Fiber Crops	Includes cotton, flax, and others
Grain and Edible Seed Crops	Including corn, rice, wheat, barley, rye, oats, sorghum, alfalfa, other grains, other nongrains (e.g., squash, pumpkin), buckwheat, sesame, peanut, and sunflower

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Seed Sprout Crops	Includes mung bean, red clover, soybean, alfalfa, and non-legume crops such as wheat, radish, and black mustard
Other Agricultural Crops	Crops for smoking and chewing; oil crops, temperate woody crops; and tropical/subtropical wood crops
Ornamental Plants	Including annual garden plants, temperate perennial non-food garden herbs, commercial greenhouse crops, (including nursery/seed crops) houseplants, home and retail greenhouse and conservatory plants, public display plantings, bulb, corm, and tuber ornamentals, tropical/subtropical garden evergreen plants, groundcovers; ornamental trees, shrubs, and vines; and forest tree nurseries.
Lawn and Turf	Including cool season winter grasses, summer grasses, and ornamental bunch grasses.

Do not use on crops, which may be adversely affected by high rates of urea nitrogen (tobacco).

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**BACK LABEL****APPLICATION RATES:**

For all uses, a single annual application is sufficient for nematode control. Soil analysis for nematode typing and counts of adult forms and larvae, undertaken both before and after each crop season, will provide best results.

For broadcast application: Application rates are approximately 1 to 3 tons per acre on a broadcast basis (or 4.5 to 14.0 pounds per 100 square feet).

**RATE CONVERSION CHART**

CLANDOSAN®618 TONS PER ACRE	CLANDOSAN®618 APPROXIMATE LBS. PER 100 SQ. FT
1.0	4.5
1.5	7.0
2.0	9.0
2.5	11.5
3.0	14.0
1 ACRE: 43,560 SQ. FT.	

For bulk soil application: Apply on a 0.1 to 0.3% weight/weight basis (i.e., 1 to 3 lbs. ClandoSan®618 for 1,000 lbs. of soil, 1 to 3 grams per kilogram of soil, or 2.5 to 7.4 lbs. per cubic yard of soil.

For residential use: One 50 lb. bag of ClandoSan®618 will cover approximately 1,000 square feet at an application rate of 1 ton per treated acre on a broadcast basis. For bulk soil treatment, apply approximately 1.5 to 4.4 ounces ClandoSan® per cubic foot.

For band application to all crops other than lawn and turf grasses: Row spacing can be used to determine the amount of ClandoSan®618 for band application. Bandwidths are equal to one-half the distance between rows and the bands are centered directly over the centerline of the intended planting row. As a result, only one-half of available acreage is treated when band application is used and application rates per acre for band application are equal to one-half the rates for broadcast application. Application rates on this basis are as follows:

Distance Between Rows (inches)	18	24	30	36	48
Band Width (inches)	9	12	15	18	24
Approximate Pounds of ClandoSan®618 Per 100 Feet of Banded Row, at Equivalent of:					
1 ton per treated acre	3.5	4.5	5.5	7.0	9.0
3 tons per treated acre	11.0	14.0	16.0	20.5	27.5

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**BACK LABEL - CONTINUED**

Application rates vary according to the characteristics of the soil, types of plant-pathogenic nematodes, and extent of infestation. Acid soils (i.e., lower pH) or soils with a severe degree or type of infestation (i.e., root-knot nematode) will require the higher rates of application within the specified ranges. Do not adjust rates of application in order to meet fertilizer requirements for your soil.

In determining your soil fertility requirements, you must take into account the amount of urea nitrogen, which will be applied through the use of this product. Total Kjeldahl nitrogen equals approximately 10.4 pounds per 100 pounds of product (4.6 pounds from urea, 2.8 pounds for the chitin-protein complex and 3.0 pounds from inert ingredients). Phosphorus as phosphoric acid ( $P_2O_5$ ) equals 2.3 pounds per 100 pounds of product and potassium as potash ( $K_2O$ ) equals 1.3 pounds per 100 pounds of product. The optimum soil temperature conditions for application of this product range from 40° to 95°F at a soil depth of 6 to 8 inches.

ClandoSan®618 has been shown to have controlled or slow release effects in soils and may not require reapplication at optimal rates which are used for first time. Soil analysis for nematode typing and counts of adult forms and larvae, undertaken both before and after each crop season, will provide best results.

**STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by storage or disposal. Do not reuse bag or container.

**STORAGE:** Avoid exposure to extreme conditions such as heat, moisture, sunlight or contaminating substances.

**DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**PESTICIDE DISPOSAL:** Store product only in this bag and keep in a locked storage area. To dispose, securely wrap original container in several layers of newspaper and discard in trash.

**LIMITED WARRANTY**

To the best of manufacturer's knowledge and belief, the information contained herein is correct. The data outlined and statements made are intended only as a source of information. Appropriate tests under user's operating conditions should be run before use. Manufacturer makes no warranties, express or implied, including warranties of merchantability or fitness for a particular use. The parties agree that the buyer's exclusive remedy shall be a refund of the purchase price of the product. In no event shall manufacturer be liable for any incidental, consequential or special damages suffered or incurred by user or its officers, employees, subsidiaries, affiliates, representatives or customers, as a result of the use of the product not in accordance with this label, whether under theories of warranty, negligence, or strict liability. Manufacturer disclaims all liability for results and for any damages, injury or patent infringement with respect to the use of the product not in accordance with this label or any material supplied by the manufacturer, whether under theories of warranty, negligence, or strict liability.

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**MANUFACTURED FOR:**

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