

**SECTION 1: PRODUCT INFORMATION**

**Product Identifier:** CLARIVA™ pn  
**Formulation Number:** A19824C  
**Registration Number:** 31861 (Pest Control Products Act)  
**Product Use:** Biological nematicide seed treatment. Please reference the approved product label for further details.

**Syngenta Canada Inc.**  
**140 Research Lane, Research Park**  
**Guelph, ON N1G 4Z3**

**MSDS prepared by:** Department of Regulatory & Biological Assessment, Syngenta Canada Inc.  
**For further information, contact:** 1-87-SYNGENTA (1-877-964-3682)

**In Case of Emergency, Call: 1-800-327-8633 (FAST MED)**

**SECTION 2: HAZARDS IDENTIFICATION**

Classification in accordance with UN GHS Version 5.

**Hazard Classification(s):** Not classified as hazardous.  
**Hazard Symbol(s):** Not applicable.  
**Signal Word:** Not applicable.  
**Hazard Statement(s):** Not applicable.  
**Precautionary Statement(s):**

- Prevention:**
  - P102 – Keep out of reach of children.
  - P260 – Do not breathe dust/fume/gas/mist/vapours/spray.
  - P264 – Wash thoroughly after handling.
  - P270 – Do not eat, drink or smoke when using this product.
  - P273 – Avoid release to the environment.
  - P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- Response:** P391 – Collect spillage.
- Storage:**
  - P403+P233 – Store in a well ventilated place. Keep container tightly closed.
  - P405 – Store locked-up.
- Disposal:** P501 – Dispose of contents/container to an approved waste disposal plant.

**Other Hazards Which do not Result in GHS Classification:** To avoid risk to human health and the environment, comply with the instructions for use.

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	Common Name	CAS Number	Average % by weight
Pasteuria nishizawae Pn1	Pasteuria nishizawae Pn	Not assigned	15

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

**SECTION 4: FIRST AID MEASURES**

**IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital.** Have the product container, label or Safety Data Sheet with you when calling Syngenta, a poison control centre or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [1-800-327-8633 (1-800-FASTMED)], for further information.

**Eye Contact:** Flush eyes with clean water, holding eyelids apart for a minimum of 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eyes. Call Syngenta, a poison control centre or doctor for treatment advice. Obtain medical attention immediately if irritation persists.

**Skin Contact:** Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 15-20 minutes. Call Syngenta, a poison control centre or doctor for treatment advice.

**Inhalation:** Move victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth, if possible. Call Syngenta, a poison control centre or doctor for treatment advice.

**Ingestion:** If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Have person sip a glass of water if able to do so. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control centre. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

**Most Important Symptoms/Effects, Acute and Delayed:**

Not applicable.

**Indication of Immediate Medical Attention and Special Treatment:**

There is no specific antidote.

Treat symptomatically.

**SECTION 5: FIRE FIGHTING MEASURES**

**Suitable (and Unsuitable) Extinguishing Media:** Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist. Cool closed containers exposed to fire with water spray. Do not use a solid water stream as it may scatter and spread the fire.

**Specific Hazards Arising from the Product:** Can decompose at high temperatures forming toxic gases. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

**Special Protective Equipment and Precautions for Fire-Fighters:** Wear full protective clothing and self-contained breathing apparatus. Evacuate non-essential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water run-off can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal Precautions, Protective Equipment and Emergency Procedures:** Control the spill at its source. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Use adequate ventilation and equipment and wear clothing as described in Section 8 and/or the product label.

**Environmental Precautions:** Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory body.

**Methods and Materials for Containment and Cleaning Up:** Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or seep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into a compatible disposal container. On soils, small amounts will naturally decompose. For large amounts, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal.

**SECTION 7: HANDLING AND STORAGE**

**Precautions for Safe Handling:** KEEP OUT OF REACH OF CHILDREN. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Avoid breathing vapours, dust or spray mist. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, applying cosmetics or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Protect product, wash or rinse water, and contaminated materials from uncontrolled release into the environment, or from access by animals, birds or unauthorized people.

**Conditions for Safe Storage, Including Any Incompatibilities:** Store in original container in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40 °C. Refer to the product label for specific storage recommendations, including minimum storage temperature and freeze/thaw stability. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.**

**CONSULT THE PRODUCT LABEL FOR COMMERCIAL AND/OR ON-FARM APPLICATIONS.**

**Control Parameters:**

Component	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Pasteuria nishizawae Pn1	Not established	Not established	Not established	No	Not established

\* Recommended by Manufacturer

\*\* Recommended by NIOSH

\*\*\* Syngenta Occupational Exposure Limit (OEL)

\*\*\*\* Recommended by AIHA (American Industrial Hygiene Association)

† Material listed in Ingredient Disclosure List under the Hazardous Products Act

Syngenta Hazard Category: A

**Appropriate Engineering Controls:** If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV (threshold limit value). Warehouses, production areas, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

**Individual Protection Measures:**

**General:** Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, applying cosmetics or handling tobacco.

**Ingestion:** Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

**Eyes:** Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

**Skin:** Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

**Inhalation:** Use process enclosures, exhaust ventilation controls, good work practices and respiratory protection to minimize exposure to liquid mists or dust from dried product. Follow product label respirator requirements when using this formulate product to treat seed, bag seed, clean up equipment and conduct other miscellaneous activities. In case of emergency spills, use a NIOSH approved respirator with an organic vapour cartridge and any R, P95 or HE filter.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** Brown to dark-brown liquid.

**Formulation Type:** Flowable suspension.

**Physical State:** Liquid.

**Odour:** Musty.

**Odour Threshold:** Not available.

**pH:** 4.7 @ 1 g/L.

**Melting Point:** Not applicable.

**Freezing Point:** Not available.

**Initial Boiling Point and Boiling Range:** Not available.

**Flash Point:** Not available.

**Evaporation Rate:** Not available.

**Flammability (solid/gas):** Not applicable.

**Lower Explosive Limit:** Not applicable.

**Upper Explosive Limit:** Not applicable.

**Vapour Pressure: Pasteuria nishizawae Pn1:** Not available.

**Vapour Density:** Not available.

**Relative Density:** 1.04 g/cm<sup>3</sup>.

**Solubility(ies): Pasteuria nishizawae Pn1:** Not available.

**Partition Coefficient (n-octanol water): Pasteuria nishizawae Pn1:** Not available.

**Auto-Ignition Temperature:** Not available.

**Decomposition Temperature:** Not available.

**Viscosity:** 318 mPas @ 20 °C.

**Other Information:** Not applicable.

**SECTION 10: STABILITY AND REACTIVITY**

**Reactivity:** Not reactive.

**Chemical Stability:** Stable under normal use and storage conditions.

**Possibility of Hazardous Reactions:** Not applicable.

**Conditions to Avoid:** Not applicable.

**Incompatible Materials:** Not applicable.

**Hazardous Decomposition Products:** Can decompose at high temperatures forming toxic gases. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Likely Routes of Exposure:** Dermal, inhalation, oral.

**Symptoms of Acute Exposure:** Not applicable.

**Potential Health Effects:** Potential skin sensitizer.

**Acute Toxicity/Irritation Studies (Finished Product):**

Ingestion:	<u>Low Acute Toxicity</u> Oral (LD50 Rat)	> 5,000 mg/kg body weight (Based on data obtained from the active substance).
Dermal:	<u>Low Acute Toxicity</u> Dermal (LD50 Rat)	> 2,000 mg/kg body weight (Based on data obtained from the active substance).
Inhalation:	<u>Low Acute Toxicity</u> Inhalation (LC50 Rat)	Not toxic by inhalation (Based on data obtained from the active substance).
Eye Contact:	<u>Non-Irritating (Rabbit)</u>	Based on data obtained from the active substance.
Skin Contact:	<u>Non-Irritating (Rabbit)</u>	Based on data obtained from the active substance.
Skin Sensitization:	<u>Not available.</u>	

**Specific Target Organ Toxicity (STOT) Single Exposure:**

Pasteuria nishizawae Pn1: Not classified as a specific target organ toxicant, single exposure.

**Specific Target Organ Toxicity (STOT) Repeated Exposure:**

Pasteuria nishizawae Pn1: Not classified as a specific target organ toxicant, repeated exposure.

**Carcinogenicity:**

Pasteuria nishizawae Pn1: Not classified as carcinogenic.

**Reproductive Toxicity:**

Pasteuria nishizawae Pn1: Not classified as a reproductive toxicant.

**Mutagenicity:**

Pasteuria nishizawae Pn1: Not classified as mutagenic.

**Aspiration Hazard:**

Pasteuria nishizawae Pn1: Not classified as an aspiration hazard.

**Other Toxicity Information:**

Pasteuria nishizawae Pn1: Acute Injection Toxicity/Pathogenicity (Intraperitoneal): Not toxic and/or pathogenic to rats when administered intravenously in a single dose of 1.0 x 10(9) spores per animal.  
No hypersensitivity incidents, including immediate-type or delayed-type reactions of humans have been reported during research, development testing and production of this or related bacterial materials.

**Toxicity of Other Components:**

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the “other components” in the formulation.

**SECTION 12: ECOLOGICAL INFORMATION****Eco-Acute Toxicity:**

Pasteuria nishizawae Pn1: Not available.

**Persistence & Degradability:**

Pasteuria nishizawae Pn1: Not available.

**Bioaccumulation Potential:**

Pasteuria nishizawae Pn1: BCF < 500; does not bioaccumulate.

**Mobility in Soil:**

Pasteuria nishizawae: Not available.

**Other Adverse Effects:** Not applicable.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste Disposal Information:** Do not reuse containers unless they are specifically designed to be refillable. Empty container retains product residue. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

**SECTION 14: TRANSPORT INFORMATION****TDG Classification – Road/Rail:**

Not regulated.

**Land Transport (TDG):**

UN Number: Not applicable.  
Proper Shipping Name: Not applicable.  
Transport Hazard Class: Not applicable.  
Packing Group: Not applicable.  
Environmental Hazards: Not applicable.

**Water Transport – International (IMDG):**

UN Number: Not applicable.  
Proper Shipping Name: Not applicable.  
Transport Hazard Class: Not applicable.  
Packing Group: Not applicable.  
Environmental Hazards: Not applicable.

**Special Precautions for User:**

Not applicable.

**Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code:**

Not applicable.

**SECTION 15: REGULATORY INFORMATION**

**Hazardous Products Act Information:**

This product has been classified in accordance with the amended Hazardous Products Act and the Hazard Criteria of the Hazardous Products Regulations (HPR), and the SDS contains all the information required by the HPR.

**Hazardous Products Act Information: WHMIS 2015 Classification**

This product is exempt under WHMIS 2015.

**Pest Control Products (PCP) Act Registration No.: 31861**

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act (PCPA). These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. Read the approved PCPA label prior to using or handling this pest control product.

**SECTION 16: OTHER INFORMATION**

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this SDS. Read the entire SDS for the complete hazard evaluation of this product.

**Full Text of Abbreviations:**

- |  |  |
|--|--|
| AB – Province of Alberta   | IMDG – International Maritime Code for Dangerous Goods   |
| BC – Province of British Columbia  | NTP – National Toxicology Program                        |
| BCF – Bioconcentration factor  | ON – Province of Ontario                                 |
| EC <sub>50</sub> – Effective concentration, 50%                                | OSHA – Occupational Safety & Health Administration       |
| GHS – Globally Harmonized System of Classification and Labeling of Chemicals   | PEL – Permissible Exposure Limit                         |
| LC <sub>50</sub> – Lethal concentration, 50%                                   | TDG – Transportation of Dangerous Goods                  |
| LD <sub>50</sub> – Lethal dose, 50%  | TLV – Threshold Limit Value                              |
| IARC – International Agency for Research on Cancer                             | QC – Province of Quebec                                  |
| IATA-DGR – International Air Transport Association Dangerous Goods Regulations | SDS – Safety Data Sheet                                  |
|  | WHMIS – Workplace Hazardous Materials Information System |

Changes since last revision: Section 11 Acute Toxicity/Irritation Studies (Finished Product) data updated: Ingestion updated to > 5,000 mg/kg body weight and Dermal updated to > 2,000 mg/kg body weight.

Revision Date (Y-M-D): 2016-09-07  
Supersedes Date (Y-M-D): 2016-05-30

Prepared by: Syngenta Canada Inc.  
1-87-SYNGENTA (1-877-964-3682)

Syngenta Canada Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date thereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and of the information referred to herein are beyond the control of Syngenta Canada Inc., Syngenta Canada Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

CLARIVA™ and the Syngenta wordmark are trademarks of a Syngenta Group Company.

END OF SAFETY DATA SHEET.