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## 1.0 IDENTIFICATION

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**Product Name:** Rotstop® C

**Synonyms:** None

**Product Use:** Rotstop® C is for the biological control of *Heterobasidion irregulare* on susceptible conifer species.

**Manufacturer:** Verdera Oy  
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P.O. Box 5  
FI-02271 Espoo, Finland  
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Fax +358 10 217 3711  
infoverdera@lallemand.com

**Importer, supplier:** Lallemand Inc./BioForest  
59 Industrial Park Crescent, Unit 1  
Sault Ste. Marie ON  
P6B 5P3 Canada

Phone: 705-942-5824

**In Case of Emergency Call:**

**703-527-3887 CHEMTREC INTERNATIONAL (Canada)**  
**800-424-9300 CHEMTREC (USA)**  
**(24 Hours/Day, 7 Days/Week)**

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## 2.0 HAZARD(S) IDENTIFICATION

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Product dust may be irritating to the respiratory system.

Contains *Phlebiopsis gigantea* strain VRA 1992. Microbes may have the potential to provoke allergic reactions.

See Section 11.0 for details.

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### 3.0 COMPOSITION/INFORMATION ON INGREDIENTS

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**Active Ingredient:** Dried spores and mycelium of *Phlebiopsis gigantea* (min 1x10<sup>6</sup> cfu/g)

| Components        | % w/w | CAS Number / EC Number  |
|-------------------|-------|-------------------------|
| Silica, amorphous | 85    | 112926-00-8 / 231-545-4 |

**Further information:** *Phlebiopsis gigantea* is a white rot fungus and naturally occurring microorganism.

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### 4.0 FIRST-AID MEASURES

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|--------------------|--|
| <b>Skin:</b>       | Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention.                           |
| <b>Eyes:</b>       | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.                                 |
| <b>Inhalation:</b> | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.     |
| <b>Ingestion:</b>  | Immediately give plenty of water. Never give anything by mouth to an unconscious person. Get medical advice/attention. |

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### 5.0 FIRE-FIGHTING MEASURES

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**For flammable properties, see Section 9.0**

**Extinguishing Media:** Water.

**Special Protective Equipment For Firefighters:** In case of fire, wear a self-contained breathing apparatus and fire/flame resistant clothing.

**Further information:** Avoid breathing smoke fumes.

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## 6.0 ACCIDENTAL RELEASE MEASURES

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### Personal Precautions, Protective Equipment and Emergency

**Procedures:** Avoid contact with skin, eyes, and clothing. Use personal protective equipment outlined in Section 8.0.

**Environmental Precautions:** Prevent leakage to drains. Discharge into the environment and surface water must be avoided.

**Methods and Material for Containment and Cleaning Up:** Use personal protective equipment. Pick-up and arrange disposal without creating dust. Shovel into suitable container for disposal. Dispose of in compliance with all federal, provincial, state and local government regulations.

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## 7.0 HANDLING AND STORAGE

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**Precautions for Safe Handling:** Avoid contact with skin, eyes and clothing. Do not breathe dust. Wear personal protective clothing, effective dust mask and gloves. Wash hands and face with soap and water before breaks and immediately after handling the product.

**Conditions for Safe Storage Including any Incompatibilities:** Store in tightly closed package in a dry place, below +5° C. Keep out of reach of children. Store separately from food, drink and animal feed.

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## 8.0 EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Exposure Limit Values:

Silica, gel (112926-00-8): TWA = 10 mg/m<sup>3</sup> (Ontario)

Silica, Amorphous – Precipitated and gel, Total: TWA (8h) = 4 mg/m<sup>3</sup> (British Columbia)

Silica, amorphous: NGV = 5 mg/m<sup>3</sup> (total dust amount) (Finland)

Silica, amorphous: TLV = 10 mg/m<sup>3</sup> (TWA) (USA)  
MAK = 4 mg/m<sup>3</sup> (C, G) (Germany)

### Appropriate Engineering Controls:

Occupational exposure controls: No exposure to the product is to be expected during normal handling when recommended and appropriate protective equipment is used.

### Personal Protective Equipment:

Respiratory Protection: Wear effective dust mask (P2).

Hand protection: Use suitable protective gloves (e.g. rubber or nitrile gloves).

Eye Protection: Wear goggles or face-shield.

Skin and body protection: Use suitable protective clothing (protective suit, rubber boots, hat).

**General Hygiene considerations:** Wash hands and face with soap and water before breaks and after handling the product.

**Environmental exposure controls:** The active ingredient is a common naturally occurring fungus. No exposure limits.

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## 9.0 PHYSICAL AND CHEMICAL PROPERTIES

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|                                       |                                     |
|---------------------------------------|-------------------------------------|
| Physical state                        | Powder                              |
| Appearance                            | Pale, beige                         |
| Odour                                 | Weak mushroom                       |
| Odour Threshold                       | Not applicable                      |
| Evaporation rate                      | Not applicable                      |
| pH                                    | 6-7                                 |
| Boiling point/range                   | Not applicable                      |
| Freezing Point, °C                    | Not applicable                      |
| Vapour pressure                       | Not applicable                      |
| Vapour Density                        | Not applicable                      |
| Specific gravity/Relative density     | Approximately 200 kg/m <sup>3</sup> |
| Water solubility                      | Partly soluble                      |
| Fat solubility (paraffin oil)         | Insoluble                           |
| Coefficient of water/oil distribution | Not applicable                      |
| Viscosity                             | Not applicable                      |

|                                  |                |
|----------------------------------|----------------|
| Conditions of flammability       | Not applicable |
| Flash point                      | Not applicable |
| Upper flammable limit            | Not applicable |
| Lower flammable limit            | Not applicable |
| Auto-ignition Temperature (°C)   | Not applicable |
| Lower explosion limit            | Not applicable |
| Upper explosion limit            | Not applicable |
| Sensitivity to mechanical impact | Not applicable |
| Sensitivity to static discharge  | Not applicable |

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## 10.0 STABILITY AND REACTIVITY

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|--|---|
| <b>Chemical Stability:</b>                 | Stable under normal conditions of handling, storage, transport and use. |
| <b>Reactivity:</b>                         | Stable under normal conditions of handling, storage, transport and use. |
| <b>Possibility of Hazardous Reactions:</b> | No dangerous reactions known.   |
| <b>Conditions to Avoid:</b>                | Temperatures >35 °C and UV-light  |
| <b>Incompatible Materials:</b>             | None known.   |
| <b>Hazardous Decomposition Products:</b>   | Not applicable.   |

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## 11.0 TOXICOLOGICAL INFORMATION

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|---|---|
| <b>Ingestion:</b>                                 | No data available   |
| <b>Skin Absorption:</b>                           | No data available   |
| <b>Inhalation:</b>                                | Silica, amorphous: May irritate respiratory organs if exposure limits are exceeded. |
| <b>Skin Contact:</b>                              | Product: No skin irritation.  |
| <b>Eye Contact:</b>                               | Product: May irritate eyes.   |
| <b>Subacute, Subchronic and Chronic Toxicity:</b> | No data available.  |

**Human Experience:** No adverse effects observed when used according to the instructions.

**Synergistic Materials:** No data available

|                                | Product   | Silica, amorphous                       |
|--------------------------------|---|---|
| Skin Sensitization             | No skin sensitization in animal test (guinea pig).                                      |   |
| Acute Oral Toxicity            | No toxicity, infectivity/pathogenicity ( $4.26 * 10^7$ cfu/kg) in rats.                 | LD <sub>50</sub> /oral/rat > 5000 mg/kg |
| Acute Inhalation               | No toxicity, infectivity/pathogenicity ( $1.12 * 10^6$ cfu/kg) in rats.                 |   |
| Acute Dermal Irritation        | No dermal irritation ( $1.07 * 10^7$ cfu/kg) in rabbits                                 |   |
| Acute Dermal Toxicity          | LD <sub>50</sub> /dermal/rat > 2000 mg/kg   |   |
| Acute Interperitoneal Toxicity | No toxicity, infectivity/pathogenicity ( $9.31 * 10^4$ - $1.27 * 10^5$ cfu/kg) in rats. |   |

Carcinogenicity: No data available

Reproductive Toxicity: No data available

Teratogenicity: No data available

Mutagenicity: No data available

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## 12.0 ECOLOGICAL INFORMATION

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**Aquatic Toxicity:** Silica, amorphous:  
LC50/96h/*Brachydanio rerio* > 10000 mg/l  
EC50/48h/*Daphnia* > 10000 mg/l

**Biological Degradability:** Easily degradable like any naturally occurring fungus/micro-organisms.

**Bioaccumulative Potential:** No bioaccumulation.

**Mobility in Soil:** *Phlebiopsis gigantea* is a natural fungus commonly occurring in coniferous forests, and specifically adapted to living in moribund wood.

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## 13.0 DISPOSAL CONSIDERATIONS

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Packagings can be landfilled or incinerated, when in compliance with local and national regulations. Wastes can be landfilled, when in compliance with local and national regulations.

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## 14.0 TRANSPORT INFORMATION

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### Land transport

**ADR/RID:** Not classified as dangerous in the meaning of transport regulations.

### Sea transport

**IMDG:** Not classified as dangerous in the meaning of transport regulations.

### Air transport

**ICAO/IATA:** Not classified as dangerous in the meaning of transport regulations.

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## 15.0 REGULATORY INFORMATION

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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by those regulations.

### Information on the warning label

#### Letter code of the warning symbol and indications of danger for the preparation

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#### Names of the ingredients given on the warning label

Dried spores and mycelium of *Phlebiopsis gigantea*.

#### R-phrases(s)

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#### S-phrases(s)

**S2:** Keep out of reach of children.

**S13:** Keep away from food, drink and animal feeding stuffs.

**Personal protective equipment:** Wear suitable protective clothing, rubber boots, rubber or plastic gloves (e.g. nitrile) and headgear. If respiratory exposure is possible (e.g. when preparing the suspension), also wear respiratory protection with dust filter P2.

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## 16.0 OTHER INFORMATION

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This SDS version (3.2) was prepared by Lallemand Inc./BioForest May 6, 2019.

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