Rotstop® C

1.0 IDENTIFICATION

Product Name: Rotstop® C

Synonyms: None

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

Manufacturer:
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Importer, supplier:
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Phone: 705-942-5824

In Case of Emergency Call:
613-996-6666 CANUTEC (Canada)
800-424-9300 CHEMTREC (USA)
(24 Hours/Day, 7 Days/Week)

2.0 HAZARD(S) IDENTIFICATION

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.

3.0 COMPOSITION/INFORMATION ON INGREDIENTS

Active Ingredient: Dried spores and mycelium of *Phlebiopsis gigantea* (min $1x10^6$ 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.

4.0 FIRST-AID MEASURES

Skin: Wash with plenty of soap and water. If skin irrritation occurs, get medical advice/attention.

Eyes: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.

Ingestion: Immediately give plenty of water. Never give anything by mouth to an unconscious person. Get medical advice/attention.

5.0 FIRE-FIGHTING MEASURES

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.

6.0 ACCIDENTAL RELEASE MEASURES

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.

7.0 HANDLING AND STORAGE

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.

8.0 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit Values:

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

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

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

Silica, amorphous: TLV = 10 mg/m^3 (TWA) (USA)
MAK = 4 mg/m^3 (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.

9.0 PHYSICAL AND CHEMICAL PROPERTIES

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, ^{o}C	Not applicable
Vapour pressure	Not applicable

Vapour Density	Not applicable
Specific gravity/Relative density	Approximately 200 kg/m^3
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 (^{o}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

10.0 STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of handling, storage, transport and use.

Reactivity: Stable under normal conditions of handling, storage, transport and use.

Possibility of Hazardous Reactions: No dangerous reactions known.

Conditions to Avoid: Temperatures >35 ^{o}C and UV-light

Incompatible Materials: None known.

Hazardous Decomposition Products: Not applicable.

11.0 TOXICOLOGICAL INFORMATION

Ingestion: No data available

Skin Absorption: No data available

Inhalation: Silica, amorphous: May irritate respiratory organs if exposure limits are exceeded.

Skin Contact: Product: No skin irritation.

Eye Contact: Product: May irritate eyes.

Subacute, Subchronic and Chronic Toxicity: 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_{50}/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_{50}/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

12.0 ECOLOGICAL INFORMATION

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-organsism.

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.

13.0 DISPOSAL CONSIDERATIONS

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.

14.0 TRANSPORT INFORMATION

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.

15.0 REGULATORY INFORMATION

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-phrase(s)
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S-phrase(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.

16.0 OTHER INFORMATION

This SDS version (2.1) was prepared by BioForest Technologies Inc. September 1, 2016.

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