



Health
Canada Santé
Canada

Your health and
safety... our priority.

Votre santé et votre
sécurité... notre priorité.

Proposed Re-evaluation Decision

PRVD2022-12

Silica Aerogel and Silicon Dioxide and Its Associated End-use Products

Consultation Document

(publié aussi en français)

16 June 2022

This document is published by the Health Canada Pest Management Regulatory Agency. For further information, please contact:

Publications
Pest Management Regulatory Agency
Health Canada
2720 Riverside Drive
A.L. 6607 D
Ottawa, Ontario K1A 0K9

Internet: canada.ca/pesticides
pmra.publications-arla@hc-sc.gc.ca
Facsimile: 613-736-3758
Information Service:
1-800-267-6315 or 613-736-3799
pmra.info-arla@hc-sc.gc.ca

Canada 

ISSN: 1925-0959 (print)
1925-0967 (online)

Catalogue number: H113-27/2022-12E (print)
H113-27/2022-12E-PDF (PDF version)

© Her Majesty the Queen in Right of Canada, as represented by the Minister of Health Canada, 2022

All rights reserved. No part of this information (publication or product) may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in a retrieval system, without prior written permission of Health Canada, Ottawa, Ontario K1A 0K9.

Table of Contents

Proposed re-evaluation decision	1
Risk mitigation measures	2
Next steps	2
Other information	3
Additional scientific information	3
Science evaluation	4
1.0 Human health assessment	4
2.0 Environment assessment	6
3.0 Incident reports	7
4.0 Value assessment	7
Appendix I Registered products containing silicon dioxide and silica aerogel	8
Table 1 Registered products containing silicon dioxide and silica aerogel ¹	8
Appendix II Proposed label updates for products containing silicon dioxide and silica aerogel	20
References	22

Proposed re-evaluation decision

Under the *Pest Control Products Act*, all registered pesticides must be re-evaluated regularly by Health Canada's Pest Management Regulatory Agency (PMRA) to ensure that they continue to meet health and environmental safety standards and continue to have value. The re-evaluation considers data and information from various sources such as information from pesticide manufacturers, incident reports, and other regulatory agencies. Health Canada applies internationally accepted risk assessment methods, risk management approaches and policies to all re-evaluations.

This document presents the proposed regulatory decision for the re-evaluation of silica aerogel and silicon dioxide, including the science evaluation on which the proposed decision is based.

Silicon dioxide and its amorphous form, silica aerogel are non-conventional and non-selective insecticides, acaricides and molluscicides. These active ingredients have a physical mode of action (MOA) that kill arthropod and terrestrial mollusc pests. Silicon dioxide and silica aerogel are used both inside and outside at commercial buildings, storage structures, agriculture structures, schools, hospitals, transport containers, modes of transportation, food processing plants, as well as stored food and feed grains. Silicon dioxide is also registered for commercial greenhouse uses on tomatoes, cucumber, peppers, indoor plants and cannabis. Furthermore, silicon dioxide has registered domestic uses, which include, points of entries, general outdoor and garden areas, home structures, animal burrows, and indoors where insects crawl and hide, such as, furniture, mattresses, and sleeping quarters for pets. The end-use products are formulated as dust/powder, bait, wettable powder or as pressurized spray to be applied by hand, various dusters/spreaders, or trigger spray. Currently registered products containing silica aerogel and silicon dioxide are listed in Appendix I.

Silicon dioxide and silica aerogel are found naturally in soil with a low potential for resistance due to its physical MOA. Due to its low toxicity profile and its history of use as a food/feed additive, dietary risk to silicon dioxide and silica aerogel is not anticipated. There is potential for occupational, residential, and bystander exposure from registered commercial and residential uses. Label statements (for all uses except greenhouse use), including updates to personal protection equipment (PPE), restricted-entry interval, clarifying label use directions and precautionary statements in accordance to the PMRA Guidance Document, *Structural Pest Control Products: Label Updates (SPCP Guidance Document)* are being proposed to further mitigate potential human health risks. To support the label update process, registrants are required to provide detailed use information. The potential environmental risk is considered acceptable when products containing silicon dioxide and silica aerogel are used according to the current label directions. Thus, products containing silicon dioxide and silica aerogel are considered to be acceptable with the proposed label updates (Appendix II).

Under the authority of the *Pest Control Products Act* and based on an evaluation of currently available scientific information, products containing silicon dioxide and silica aerogel (Appendix I) are being proposed for continued registration in Canada, with the proposed updates to label statements. Additional label updates will be required in the final decision document based on the use information provided by the registrants.

Risk mitigation measures

Registered pesticide product labels include specific directions for use. Directions include risk mitigation measures to protect human health and the environment and must be followed by law. The proposed label updates as a result of the re-evaluation of products containing silicon dioxide and silica aerogel are summarized below:

- Update PPE for all commercial products.
- Add precautionary statements in accordance to the *Structural Pest Control Products: Label Updates* document for commercial and domestic structural pest control products (SPCP) applications.
- Update restricted-entry interval (REI) for all commercial products with structural uses.
- Improve clarity on use directions.
- Registrants, as part of the label updates resulting from re-evaluation, will be required to include relevant updates in accordance to the *Structural Pest Control Products: Label Updates* document for both domestic and commercial marketing class SPCPs to limit bystander and residential exposure for humans and pets.

All products containing silicon dioxide and silica aerogel registered in Canada are subject to this proposed re-evaluation decision. This document is subject to a public consultation,¹ during which written comments and additional information may be submitted to [PMRA Publications](#). The final re-evaluation decision will be published taking into consideration the comments and information received during the consultation period.

Next steps

The public, including the registrants and stakeholders, are encouraged to submit written comments and additional information during the 90-day public consultation period upon publication of this proposed re-evaluation decision.

All comments received during the 90-day public consultation period will be taken into consideration in preparation of the re-evaluation decision document,² which could result in revised risk mitigation measures. The re-evaluation decision document will include the final re-evaluation decision, the reasons for it and a summary of comments received on the proposed re-evaluation decision with Health Canada's responses.

¹ "Consultation statement" as required by subsection 28(2) of the *Pest Control Products Act*.

² "Decision statement" as required by subsection 28(5) of the *Pest Control Products Act*.

Other information

When Health Canada makes its re-evaluation decision, it will publish a Re-evaluation Decision on silicon dioxide and silica aerogel (based on the Science evaluation of PRVD2022-12). In addition, the test data referenced in this consultation document will be available for public inspection, upon application, in the [PMRA's Reading Room](#).

Additional scientific information

In order to update and improve the clarity on current product labels, Health Canada has requested registrants to submit Use Information.

Science evaluation

1.0 Human health assessment

Silicon dioxide (present as 100% diatomaceous earth) and silica aerogel are found naturally in soil and are considered to be of low acute toxicity via the oral, dermal and inhalation routes, minimally irritating to the eyes and skin and not likely to be a dermal sensitizer. Refer to PRD2020-11, Silicon Dioxide (Present as 100% Diatomaceous Earth), DX13 Dust, and DX13 Industrial (Canada, 2020a) for further details. Silicon dioxide has a history of use as an insecticide and is permitted as a food/feed additive in Canada. No toxicological endpoints for silicon dioxide and silica aerogel have been established for quantitative risk assessment and as a result, a qualitative approach has been used to assess the potential risks of exposure.

Silicon dioxide and silica aerogel are used in both indoors and outdoors in commercial and residential areas and in greenhouses.

There is potential for commercial workers to come into direct contact with silicon dioxide and silica aerogel during loading, applying and handling (including clean up and repairs). Occupational exposure is characterized as short- to intermediate-term in duration and is primarily by the inhalation route but dermal and ocular exposure are also possible (Canada, 2020a). To mitigate occupational exposure, workers are required to wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes and protective eyewear (goggle or face shield) during loading, application, clean-up and repair, as well as a NIOSH-approved N95 (minimum) filtering facepiece respirator (dust mask) during handling (including clean-up and repair) and a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides during application. For loading and application with a dust blower a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides. For details of the risk assessment, see PRD2020-11. As part of the re-evaluation, updates to PPE statements are proposed for all commercial class products (Appendix II). No additional updates are required for products with greenhouse uses. In addition, for all domestic and commercial structural applications, precautionary statements are proposed to reflect the Agency's Guidance Document *Structural Pest Control Products: Label Updates; 2020* (Appendix II).

For greenhouse applications, there is the potential for inhalation and dermal postapplication exposure to workers re-entering areas treated with silicon dioxide and silica aerogel. Given the nature of the postapplication activities typically performed (for example, harvesting, thinning and pruning), inhalation of the end-use products as well as dermal contact with treated plants, soil, and surfaces is possible. A restricted-entry interval (REI) of 4 hours, or until dusts have settled or sprays have dried, has been established. If early entry is required, workers must wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, protective eyewear (goggles or face shield) and a NIOSH-approved N95 (minimum) filtering facepiece respirator (dust mask) that is properly fit tested. For details of the risk assessment, see PRD2020-11. No additional updates are required for greenhouse uses.

For post-harvest clean-up activities for cannabis produced commercially indoors, greenhouse tomato, cucumber and pepper crops, an information sheet is currently required to be posted at points of entry. The information sheet specifies that re-entry workers must wear personal protection equipment (a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, protective eyewear (goggles or face shield) and a NIOSH-approved N95 filtering facepiece respirator (dust mask) that is properly fit tested), and re-entry without PPE is only permitted after dusts have settled and the area cleaned. No further updates are required.

The end-use products registered for greenhouse use are also registered for structural uses. The requirements for individuals to remain out of the treated area until dusts have settled or sprays have dried and for workers must wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, protective eyewear (goggles or face shield) and a NIOSH-approved N95 (minimum) filtering facepiece respirator (dust mask) that is properly fit tested in the case of early entry was extended to include the structural uses registered on those labels. Refer to PRD2020-11, Silicon Dioxide (Present as 100% Diatomaceous Earth), DX13 Dust, and DX13 Industrial for further details. For all products registered for structural use, Health Canada proposes to update the label to include direction that individuals are to remain out of the treated area until dusts have settled or sprays have dried (Appendix II).

Silicon dioxide and silica aerogel are registered for use in residences, motels, hospitals and other commercial buildings; therefore, bystander (humans and companion animals) exposure in residential and non-occupational environments is expected. Standard label statement updates are proposed as per the Guidance Document *Structural Pest Control Products: Label Updates; 2020* for both domestic and commercial marketing class silicon dioxide products to limit human and pet exposure (Appendix II). Precautionary statements proposed include, not allowing people or pets enter treated areas until dusts have settled or sprays have dried, and to ventilate treated areas after application by opening windows and doors or using fans, where required, to aid in the circulation of air. For details of the risk assessment, see PRD2020-11. Implementing and adhering to these label instructions will reduce potential exposure to bystanders and individuals in residential areas. With the proposed label updates, potential health risks to individuals in residential areas and to bystanders and pets is considered acceptable.

Silicon dioxide has a long history of use as a food additive. Residues of silicon dioxide and silica aerogel on treated food/feed crops are possible. While dietary exposure to silicon dioxide and silica aerogel may occur through consumption of treated crops, the risk from consuming food crops is acceptable due to their low toxicity profiles.

In addition, the likelihood of silicon dioxide and silica aerogel residues in drinking water will be low. The label has the necessary mitigative measures to limit contamination of drinking water and exposure is expected to be negligible. When the end-use products are applied as directed by the label, consumer exposure to silicon dioxide and silica aerogel is low and therefore the dietary risk is acceptable.

Aggregate exposure is the total exposure to a single pesticide that may occur from food, drinking water, residential and other non-occupational sources, and from all known or plausible exposure routes (oral, dermal and inhalation). Dietary risk from the use of silicon dioxide and silica aerogel is considered acceptable. Label statements to minimize non-occupational exposure

(dermal and inhalation) in residential and commercial areas to the general Canadian population, including infants and children are proposed. When the end-use products are used with label updates, there is reasonable certainty that no harm will result from aggregate exposure of residues of silicon dioxide and silica aerogel.

The *Pest Control Products Act* requires that Health Canada consider the cumulative exposure to pest control products with a common mechanism of toxicity. Accordingly, an assessment of potential common mechanism of toxicity with other pesticides was undertaken. It is likely that silicon dioxide and silica aerogel share a common mechanism of toxicity with other silica-based pesticides relating to effects on the respiratory system, including irritation. Although the use pattern and target pests in residential areas are similar across these pest control products, the likelihood of non-occupational co-exposure via the inhalation route to multiple silica-based products is low and therefore not of concern at this time. Given that silicon dioxide is also a food/feed additive and has low oral toxicity, potential health risks from cumulative dietary and drinking water exposures from pesticide uses are also acceptable.

2.0 Environment assessment

Silicon dioxide and silica aerogel are naturally occurring forms of silica, formed from the fossilized siliceous frustules and fragments of various species of diatoms mined from the beds of former inland lakes.

Silicon dioxide and silica aerogel have a non-toxic mode of action, interfering with the water balance of insects by absorbing protective coatings (oils and fats) and via mechanical abrasion of the outer cuticle layer, leading to fatal dehydration. As such, it may harm bees and other beneficial arthropods used in greenhouse production. To mitigate this concern, precautionary statements to warn users to avoid application when bees or other beneficial insects are in the treatment area are listed on the products with greenhouse uses. Therefore, risks to non-target organisms are considered acceptable when the products are used according to current label directions. For details of the risk assessment, see PRD2020-11.

In accordance with the PMRA Regulatory Directive DIR99-03, the assessment of silicon dioxide and silica aerogel against Track 1 criteria of Toxic Substances Management Policy (TSMP) under *Canadian Environmental Protection Act* was conducted. Health Canada has reached the conclusions that: Silicon dioxide and silica aerogel are naturally contaminated with trace levels of TSMP Track 1 polychlorinated dibenzodioxins and furans. When compared to other registered sources, the use of silicon dioxide and silica aerogel is not expected result in an increase in the release of Track 1 contaminants. Therefore, silicon dioxide and silica aerogel do not meet all Track 1 criteria, and is not considered a Track 1 substance.

3.0 Incident reports

As of 23 March 2022, 157 incidents involving silicon dioxide or silica aerogel were submitted to the PMRA. Some incidents involved more than one incident category (for example, a human and a domestic animal were reported in the same incident). As such, there were 90 human incidents and 71 domestic animal incidents.

In three major human incidents (2 United States, 1 Canada), the reported effects (for example, cardiac arrest, barely conscious, renal disorder) were not typical of silicon dioxide/silica aerogel exposure and therefore, were considered as unlikely to be related to the reported product. The remaining human incidents (87 reports) were mainly minor in severity. The majority of these incidents (75%) were considered to be possibly related to the reported silicon dioxide product. In most incidents, a domestic class silicon dioxide or a silica aerogel product formulated as dust was used indoors in a residential area. Reported exposure scenarios include inhaling silicon dioxide/silica aerogel dust when applying the product as well as contact with product residues when living, working or sleeping in treated areas. A few incidents involved children less than 12 years of age. The symptoms reported in people (as well as children) include signs such as respiratory tract irritation, nasal congestion, coughing, shortness of breath, rash or watery eyes.

In domestic animal incidents considered to be possibly related to the reported product (42 reports), pets (mainly cats and dogs) were exposed when the silicon dioxide/silica aerogel product was used in indoor areas. Exposure scenarios in pets mainly involved licking the product off treated areas. Symptoms reported in animals were mainly minor in severity and include effects such as vomiting, diarrhea or loss of appetite. The remaining incidents were considered unlikely or unrelated following causality analysis.

The reported incidents in people and pets indicate a potential for incidental dermal and inhalation exposure to silicon dioxide/silica aerogel products, formulated as dusts, even when products are used as per label directions in indoor residential sites. Therefore, labels are proposed to be updated (use directions, precaution and other best practice statements) as per the PMRA Guidance Document, *Structural Pest Control Products: Label Updates*, 2020.

4.0 Value assessment

Silicon dioxide and silica aerogel are non-conventional and non-selective insecticides, acaricides, and molluscicides. These active ingredients have a physical MOA and thus, do not belong to any MOA group. Given the physical MOA of these active ingredients, the potential for resistance is low.

To improve clarity on current product labels, additional use directions and label updates are proposed as per the PMRA Guidance Document, *Structural Pest Control Products: Label Updates*, 2020 and Regulatory Directive DIR2016-01, *Guidelines for the Advertising of Pest Control Products*.

Appendix I Registered products containing silicon dioxide and silica aerogel

Table 1 Registered products containing silicon dioxide and silica aerogel¹

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
26195	T - Technical	EP Minerals, LLC (EPB)	Celatom Food Grade Diatomaceous Earth	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 82%
27264	T - Technical	Absorbent Products Ltd. (YXC)	APL Diatomaceous Earth Technical Grade Active Ingredient	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 67%
27448	T - Technical	IMCD Canada Limited (LOM)	Diafil 610 Food Grade Technical	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
29604	T - Technical	Absorbent Products Ltd. (YXC)	Diasource Diatomaceous Earth	Solid	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 81.5%
20943	T - Technical	Bayer Cropscience Inc. (BCZ)	Silica Gel Insecticide No.1	Dust or powder	Silica gel (amorphous) (SIL) 100.00%
25718	T - Technical	Evonik Canada Inc. (DEU)	Sipernat Amorphous Silica Technical	Dust or powder	Silica gel (amorphous) (SIL) 99%
22419	M - Manufacturing Concentrate	Mclaughlin Gormley King Company (MGK)	Pyroicide & Dri-Die Dust Base Insecticide	Dust or powder	Silica gel (amorphous) (SIL) 40.00%; pyrethrins (PYR) 2.0%; piperonyl butoxide (PBU) 20.00%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
19166	C - Commercial	Woodstream Canada Corporation (SFR)	Chemfree Insectigone Insect Control Powder For Food Processing Plants	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
19215	C - Commercial	Woodstream Canada Corporation (SFR)	Chemfree Insectigone Insect Control Powder For Use In Barns	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
19230	C - Commercial	Woodstream Canada Corporation (SFR)	Chemfree Insectigone Insect Control Powder For Use In Flour Mills	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
21039	C - Commercial	9272-9771 Quebec Inc. (QBA)	Insect Stop	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
22489	C - Commercial	Natural Insecto Products Inc. (NTI)	Insecto For Control Of Grain Insects	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 90.0%
27265	C - Commercial	Absorbent Products Ltd. (YXC)	De-Cide (Tm)	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 67%
28656	C - Commercial	9272-9771 Quebec Inc. (QBA)	Insect Stop Barn & Stable, Silos	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
29597	C - Commercial	Basf Canada Inc. (BAZ)	Motherearth D Pest Control Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 81.5%
29844	C - Commercial	Premier Tech Brighton Ltd (BGH)	Pro Professional Progreen Insect Dust Ii	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 90%
30966	C - Commercial	De Laboratorie s Inc. (JPT)	Dx13 Industrial	Pressurized product	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 6.56%
31540	C - Commercial	Absorbent Products Ltd. (YXC)	Purede Freshwater Diatomaceous Earth Pest Control Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 81.5%
31917	C - Commercial	753146 AB Ltd. O/A Ultrasol Industries (ULT)	Be Green Doktor Doom Premium Fresh Water Diatomaceous Earth Insect Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 81.5%
32178	C - Commercial	De Laboratorie s Inc. (JPT)	DX13 Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 82%
32284	C - Commercial	DE Canada Inc. (DBA Diatomaceous Earth Canada) (DCY)	Diatomaceous Earth Insect Dust For Commercial Use	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - fresh water fossils (SIF) 91.1%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
32666	C - Commercial	Kuus Inc. (KMS)	Knock Down Professional Nature's Earth Insect Control Diatomaceous Earth	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
32766	C - Commercial	DE Laboratorie s Inc. (JPT)	DX13 Pro Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 82%
32767	C - Commercial	De Laboratorie s Inc. (JPT)	DX13 Pro	Pressurized product	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 6.56%
33423	C - Commercial	Basf Canada Inc. (BAZ)	Seclira Dust Insecticide	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 77.4%; dinotefuran (DNO) 0.25%
34062	C - Commercial	Lactopur Inc. (Doing Business As Absorbpur) (LPR)	De-Silicone Dioxide 82%	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%
24259	C - Commercial	Hedley Technologies Ltd. (HTA)	Protect-It (Ready-To-Use Insecticidal Dust)	Dust or powder	Silicon dioxide (SIF) 74%; silica gel (amorphous) (SIL) 10%
32766	C - Commercial	De Laboratorie s Inc. (JPT)	Dx13 Pro Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 82%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
15255	C - Commercial	Bayer Cropsience Inc. (BCZ)	Drione Insecticide Dust	Dust or powder	Silica gel (amorphous) (SIL) 40.0%; pyrethrins (PYR) 1.0%; piperonyl butoxide (PBU) 9.7%
19216	D - Domestic	Woodstream Canada Corporation (SFR)	Insectigone Crawling Insect Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
20848	D - Domestic	Woodstream Canada Corporation (SFR)	Safer's Attack Roach & Crawling Insect Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 74.9%; pyrethrins (PYR) 0.4%; piperonyl butoxide (PBU) 1.0%
21038	D - Domestic	9272-9771 Quebec Inc. (QBA)	Indoor And Outdoor Insect Stop	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%
21340	D - Domestic	Woodstream Canada Corporation (SFR)	Insectigone Cockroach & Ant Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
21341	D - Domestic	Woodstream Canada Corporation (SFR)	Insectigone Earwig Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
21342	D - Domestic	Woodstream Canada Corporation (SFR)	Insectigone Ant Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
21936	D - Domestic	Premier Tech Ltd. (RMT)	Wilson Antout Ant Killer Dust (1)	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 90%
21951	D - Domestic	9272-9771 Quebec Inc. (QBA)	Insect Stop Insect Control	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
25596	D - Domestic	9272-9771 Quebec Inc. (QBA)	Insect Stop Cockroach & Ant Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
25597	D - Domestic	9272-9771 Quebec Inc. (QBA)	Insect Stop Silverfish & Cockroach Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
25598	D - Domestic	9272-9771 Quebec Inc. (QBA)	Insect Stop Earwig Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
25599	D - Domestic	9272-9771 Quebec Inc. (QBA)	Insect Stop Ant Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
26622	D - Domestic	Premier Tech Ltd. (RMT)	Green Earth Slug And Bug Insect Killer Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 90%
26679	D - Domestic	Premier Tech Ltd. (RMT)	Green Earth Homecare Bed Bug & Crawling Insect Killer Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 90%
27185	D - Domestic	S. C. Johnson And Son, Limited (JOH)	Raid Earthblends Ant & Earwig Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 79.5%
28098	D - Domestic	Les Produits de Controle Superieur Inc/ Superior Control Products Inc. (PRQ)	The House and Garden Insect Destroyer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%
28098.01	D - Domestic	Groupe Bmr Inc. (GBM)	House & Garden Insecticide (Plus Green) Eliminator Plus	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%
28102	D - Domestic	Les Produits de Controle Superieur Inc/ Superior Control Products Inc. (PRQ)	The Cockroach And Ant Destroyer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
28103	D - Domestic	Les Produits de Controle Superieur Inc/ Superior Control Products Inc. (PRQ)	The Ant Destroyer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%
28103.01	D - Domestic	Groupe Bmr Inc. (GBM)	(Plus Green) Eliminator Plus Ant Killer Insecticide	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%
28105	D - Domestic	Les Produits de Controle Superieur Inc/ Superior Control Products Inc. (PRQ)	The Earwig Destroyer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%
28105.01	D - Domestic	Groupe Bmr Inc. (GBM)	(Plus Green) Eliminator Plus Earwig Killer Insecticide	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%
28106	D - Domestic	Les Produits de Controle Superieur Inc/ Superior Control Products Inc. (PRQ)	The Powdered Spider Destroyer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
29411	D - Domestic	753146 AB Ltd. O/A Ultrasol Industries (ULT)	Premium Quality #1 Doktor Doom Go Green Baited Diatomaceous Earth Dust Or Spray	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 90%
29560	D - Domestic	King Home & Garden Inc. (KHG)	King Eco-Way Ant & Earwig Killer Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
29561	D - Domestic	King Home & Garden Inc. (KHG)	King Eco-Way Indoor/Outdoor Crawling Insect Killer Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
29562	D - Domestic	King Home & Garden Inc. (KHG)	King Eco-Way Slug Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 90%
29605	D - Domestic	King Home & Garden Inc. (KHG)	King Eco-Way Bug Killer Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
29813	D - Domestic	Scotts Canada Ltd. (SSX)	Ortho® Ant B Gon Max Ant Killer Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 90%
30526	D - Domestic	Absorbent Products Ltd. (YXC)	Last Crawl (Tm)	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 67%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
30791	D - Domestic	Woodstream Canada Corporation (SFR)	Chemfree Insectigone Flea Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
30832	D - Domestic	Woodstream Canada Corporation (SFR)	Safer's Bedbug And Flea Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
30973	D - Domestic	DE Laboratories Inc. (JPT)	DX 13	Pressurized product	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 6.56%
31048	D - Domestic	Kuus Inc. (KMS)	Knock Down Eco Crawling Insect Control & Killer Bait Powder (Containing Food Grade Diatomaceous Earth)	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 79.5%
31143	D - Domestic	Kuus Inc. (KMS)	Knock Down Dust Devil Crawling & Flying Insect Control & Killer Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 74.0%; pyrethrins (PYR) 0.20%; piperonyl butoxide (PBU) 1.0%
31376	D - Domestic	Woodstream Canada Corporation (SFR)	Terro Ant Killing Powder	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
32105	D - Domestic	Kuus Inc. (KMS)	Knock Down Ant Attack Blaster Killer Bait Powder	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 79.5%
32179	D - Domestic	DE Laboratorie s Inc. (JPT)	Perfect Room Plus Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 82%
32278	D - Domestic	Woodstrea m Canada Corporation (SFR)	Safer's Ant & Crawling Insect Killer	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 80%
32283	D - Domestic	DE Canada Inc. (DBA Diatomaceo us Earth Canada) (DCY)	Diatomaceous Earth Insect Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
32556	D - Domestic	Kuus Inc. (KMS)	Knock Down Ant Attack - Ant Killer Dust	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 79.5%
32561	D - Domestic	753146 AB Ltd. O/A Ultrasol Industries (ULT)	Doktor Doom Be Green Premium Food Grade Diatomaceous Earth	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 81.5%
32665	D - Domestic	Kuus Inc. (KMS)	Knock Down Dust Diatomaceous Earth	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient
32673	D - Domestic	Scotts Canada Ltd. (SSX)	Ortho® Bug B Gon® Diatom Diatomaceous Earth Multi Bug Killer	Pressurized product	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 6.56%
32674	D - Domestic	Scotts Canada Ltd. (SSX)	Ortho® Bed Bug B Gon(TM) Diatom Diatomaceous Earth Bed Bug Killer	Pressurized product	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 6.56%
32789	D - Domestic	SBI Fabricant de Poêles International (LSK)	Firewood Bug Killing Powder	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 91.1%
33553	D - Domestic	Vitac Pharmaceutical Canada Inc. (VPT)	Vitac Insect Exterminator	Dust or powder	Silicon dioxide (present as 100% diatomaceous earth) - Fresh water fossils (SIF) 93%

¹ As of 14 February 2022, excluding discontinued products or products with a submission for discontinuation

Appendix II Proposed label updates for products containing silicon dioxide and silica aerogel

The label amendments presented below do not include all label requirements for individual end-use products, such as first aid statements, disposal statements, precautionary statements, and supplementary protective equipment. Information on labels of currently registered products should not be removed unless it contradicts the label statements provided below.

All Commercial Marketing Class Products:

On Principle Display Panel and under PRECAUTIONS:

1. “KEEP OUT OF THE REACH OF CHILDREN AND PETS”

Under PRECAUTIONS:

1. “KEEP OUT OF THE REACH OF CHILDREN AND PETS”
2. Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during loading, application, clean-up and repair. In addition, wear protective eyewear (goggles or face shield) during loading, application, clean-up and repair.
3. Wear a NIOSH-approved N95 (minimum) filtering facepiece respirator (dust mask) that is properly fit tested during handling (including clean-up and repair). For applications, wear a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides. For loading and applications with dust blower, wear a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides.
4. DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours or until dusts have settled or sprays have dried. If early entry is required, workers must wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, protective eyewear (goggles or face shield) and a NIOSH-approved N95 (minimum) filtering facepiece respirator (dust mask) that is properly fit tested.

All Domestic Marketing Class Products:

On Principle Display Panel and under PRECAUTIONS:

1. “KEEP OUT OF THE REACH OF CHILDREN AND PETS”

Under PRECAUTIONS:

1. **DO NOT** apply to overhead areas or in confined spaces (for example, attics, crawlspaces).

2. Ventilate treated areas after application by opening windows and doors or using fans, where required, to aid in the circulation of air.
3. **DO NOT** allow people or pets [or livestock] to enter treated areas until dusts have settled or sprays have dried.

All Structural Use Products (Domestic and Commercial Marketing Class):

Label amendments are proposed to improve the clarity of the label instructions. This includes but is not limited to:

1. Adding the application type definitions (e.g., crack and crevice, spot) as per the Agency's Guidance Document *Structural Pest Control Products: Label Updates*; 2020.
2. Clarity on the use directions (e.g., application rates, re-application frequency, sites of treatment, addition of mixing instructions, inconsistencies within the label, removal of vague label language and pest claims, misleading product names).
3. "Not harmful" claims (e.g., "...not harmful to animals, fish, fowl, or food, if label directions are followed") must be removed as per Regulatory Directive DIR2016-01, *Guidelines for the Advertising of Pest Control Products*.
4. Amendments to reflect the standard precautionary statements as as per the Agency's Guidance Document *Structural Pest Control Products: Label Updates*; 2020.

References

PMRA No.	Reference
835610	Canada, 2004a. Re-evaluation Decision Document – Silicon Dioxide and Silica Gel. RRD2004-20
3320870	Canada, 2004b. Proposed Acceptability for Continuing Registration – Re-evaluation of Silicon Dioxide and Silica Gel. PACR2004-09
3124734	Canada, 2020a. Proposed Registration Decision - Silicon Dioxide (Present as 100 % Diatomaceous Earth), DX13 Dust, and DX13 Industrial. PRD2020-11
3127340	Canada, 2020b. Registration Decision - Silicon Dioxide (Present as 100 % Diatomaceous Earth), DX13 Dust, and DX13 Industrial. RD2020-14