Environmental Protection Authority
Te Mana Rauhī Taiao

DECISION

20 August 2018

Summary

Substance	Foamstream V4
Application code	APP203594
Application type	To import or manufacture for release any hazardous substance under Section 28 of the Hazardous Substances and New Organisms Act 1996 (“the Act”)
Applicant	Weedingtech (NZ) Ltd
Purpose of the application	To import for release Foamstream V4, a soluble concentrate containing 3.99 % surfactant foaming agents, plus other components. Foamstream V4 is intended for use as a herbicide for the control of weeds, moss, and algae in public areas
Date application received	10 July 2018
Consideration date	20 August 2018
Considered by	The General Manager[1] of the Hazardous Substances and New Organisms group of the Environmental Protection Authority (“the EPA”)
Decision	**Approved with controls**
Approval code	**HSR101297**
Hazard classifications	6.3B, 8.3A, 9.1D

[1] The General Manager of the HSNO group of the EPA has made the decision on this application under delegated authority in accordance with section 19 of the Act.

1. Substance

1.1 Foamstream V4 is a soluble concentrate containing sugars of decyloctylglycosides and C_{10} to C_{16} chain length even-numbered alkyl glycosides as the surfactant foaming agents, plus other components. It is intended for use as a herbicide for the control of weeds, moss, and algae in public areas. Foamstream V4 is intended to be applied using a purpose-built machine that delivers hot foam in a targeted way. Foamstream V4 has herbicidal properties through a non-toxic mode of action; the herbicidal effect comes from the prolonged heat of the foam.

2. Process and consultation

Application receipt

2.1. The application was formally received on 10 July 2018 under section 28 of the Act.

Information available for consideration

2.2. The information available for the consideration comprised the:

- application form
- confidential appendices to the application
- EPA staff advice memorandum.

2.3. There was sufficient information to assess the application.

Public notification

2.4. This application was not publicly notified under section 53(2) of the Act because it was unlikely that there would be significant public interest in the application.

Notification to government departments

2.5. WorkSafe New Zealand (“WorkSafe”) is the agency responsible for administering the Health and Safety at Work Act 2015 (HSW Act) and the Health and Safety at Work (Hazardous Substances) Regulations 2017 (HSW (HS) Regulations). Therefore, advice was sought from WorkSafe on whether the prescribed HSW requirements are adequate to manage the risks associated with the use of this substance in the workplace. WorkSafe was notified of the application on 10 July 2018 to allow them to provide this advice. Their response is in section 4.

Legislative criteria for the application

2.6. The application was considered in accordance with section 29 of the Act, taking into account other relevant sections of the Act, the EPA Notices, the HSW Act and HSW (HS) Regulations and the Hazardous Substances and New Organisms (Methodology) Order 1998.

3. Hazardous properties, prescribed controls and exposure limits

Hazardous properties

3.1. The hazard classifications of Foamstream V4 were determined by the EPA using information provided by the applicant, information on the individual components of Foamstream V4 and by mixture rules.

3.2. The classifications that have been applied to this substance are different to those submitted by the applicant (Table 1).

Table 1: Hazard classifications of Foamstream V4

Hazard	Applicant classification	EPA classification
Skin irritancy	6.3B	6.3B
Eye corrosivity	8.3A	8.3A
Biocidal activity	-	9.1D

Prescribed controls

3.3. The hazard classifications of Foamstream V4 determine a set of prescribed controls, which are specified in the EPA Notices. There are also requirements in the HSW (HS) Regulations, but these are not set for the substance under this approval as they apply in their own right.

3.4. The prescribed controls set the baseline for how the substance must be managed and include specifications on how the substance is to be packaged, labelled, stored, disposed, transported, handled and used. The prescribed controls also set information requirements (eg Safety Data Sheets), signage and emergency management. These controls form the basis of the controls specified in the Appendix.

3.5. Clause 17 of the Hazardous Substances (Labelling) Notice 2017 and Section 3 of Schedule 1 of the Hazardous Substances (Safety Data Sheets) Notice 2017 require that certain toxic, corrosive or ecotoxic components are identified on the product label and on the SDS, respectively. Section 8 of Schedule 1 of the SDS Notice requires occupational exposure limits to be identified on the SDS.

3.6. The name and concentration of the following components need to be specified on the label and SDS (Table 2):

Table 2 List of components requiring identification

Label	SDS
Citric acid (8.3A)	Citric acid (8.3A)
D-Glucopyranose, oligomeric, decyl octyl glycosides (8.3A)	D-Glucopyranose, oligomeric, decyl octyl glycosides (8.3A)
D-Glucopyranose, oligomeric, C10-16-alkyl glycosides (8.3A)	D-Glucopyranose, oligomeric, C10-16-alkyl glycosides (8.3A)

Exposure limits

3.7. Under section 77B of the Act, the EPA may set a Tolerable Exposure Limit (TEL) and or an Environmental Exposure Limit (EEL) for a substance with toxic or ecotoxic properties.

- Regulation 13.17 of the HSW (HS) Regulations prohibits the use of a class 6 substance in excess of a TEL.
- Clause 49 of the Hazardous Substances (Hazardous Property Controls) Notice 2017 (HPC Notice) prohibits the use of a class 9 substance in excess of an EEL.

3.8. No TEL has been set because it is considered that exposure to this substance is not likely to result in an appreciable toxic effect to people, provided controls on use are followed.

3.9. No EEL values have been specified for this substance. This is because it is considered that with proposed controls in place, adverse effects to the environment have been assessed as being negligible.

3.10. There are no Workplace Exposure Standard (WES) values for components of Foamstream V4. No Prescribed Exposure Standard (PES) has been set for any component of Foamstream V4.

4. Risk and benefit assessment

4.1. The risk assessment has taken into account the hazardous properties of the substance, the considerations under Part 2 of the Act, the prescribed controls under the Act and the requirements under other relevant legislation such as the HSW Act 2015, Land Transport Rule 45001, Civil Aviation Act 1990 and Maritime Transport Act 1994.

4.2. The risk assessment has taken into account the full life cycle of the substance, including import, packaging, transport, storage, use and disposal.

4.3. The EPA determined that there is a potential for significant exposures to people and the environment during the use phase of Foamstream V4. Therefore, a qualitative assessment was undertaken to determine the likely routes of exposure to the substance under the use pattern proposed by the applicant.

4.4. The overall risk and benefit assessment:

- considered the risks posed by Foamstream V4
- determined whether the risks are outweighed by the benefits
- determined whether any variations, additions to or deletion of the prescribed controls are required to manage the risks of the substance.

Assessment of risks to human health

4.5. Foamstream V4 is intended to be supplied to the professional markets. Users are expected to load the substance in the machine (the machine dilutes the substance in hot water) and apply the diluted substance (the foam) using specialised spray equipment. It is likely that users will be exposed to the

substance during loading of Foamstream V4 in the machine and to the diluted foam when applying the substance. The public could also be exposed to the foam.

Skin irritancy (6.3B)

4.6. It is **likely** that skin exposure may occur during the loading of this substance by the users, but any effect is expected to be minor and reversible. The prescribed HSW (HS) requirements include requirements for Personal Protective Equipment (PPE) and as such the risk from the skin irritancy hazard for users is assessed to **negligible**.

4.7. It is **likely** that skin exposure may occur if members of the public come in contact with the foam, but any effect is expected to be **negligible** because the foam is diluted so that it is no longer irritant.

Eye corrosivity (8.3A)

4.8. It is **unlikely** that eye exposure may occur during the loading of this substance by the users, and any effect is expected to be **major and irreversible**. The prescribed HSW (HS) requirements include requirements for PPE and as such the residual risk from the eye corrosivity hazard has been assessed as being **negligible**.

Risks to human health in a workplace

4.9. The EPA sought advice from WorkSafe on whether the HSW requirements are adequate to manage the risk associated with the use of this substance in the workplace. WorkSafe provided a response on whether the risks posed by Foamstream V4 to human health (in the workplace) can be managed by the HSW requirements.

4.10. WorkSafe has assessed the available information for APP2203594 and considers that compliance with the HSW (HS) and HSW (General Risk and Workplace Management) Regulations will be adequate to reduce the risks associated with the use of this substance in the workplace. While the regulations cover standard risk mitigation measures, occupational exposure in the workplace needs to be assessed at each site and appropriate controls put in place to mitigate the identified risks. Specifically for Foamstream V4, the risks associated with spraying hot water need to be considered by the user and mitigation controls put in place to minimise the risk.

Assessment of risks to the environment

4.11. Foamstream V4 is intended for use as a herbicide for the control of weeds, moss, and algae in publicly accessible areas such as cobbles, pavements, monuments, street furniture, parks, schools, waterways (waste water site filter-beds, clean water sites), and artificial surfaces (astro-turf and rubber playgrounds/ pitches). The heat in the hot water is responsible for killing the weeds, whilst Foamstream V4 merely acts as an insulator to retain the heat.

Biocidal effect

4.12. It is unlikely that non-target organisms will be exposed to Foamstream V4, because the application by means of specialised applicator heads will minimize spray drift, run off and exposure of non-target sensitive areas.

4.13. Once applied, Foamstream V4 quickly loses its biocidal properties with the cooling down of the foam. Furthermore, the surfactant foaming agents and other components of Foamstream V4 are all rapidly degradable, therefore, should the diluted substance enter waterways or other environmental compartments, no significant effect on aquatic organisms, soil-dwelling organisms, and terrestrial vertebrates and invertebrates is expected.

4.14. It is unlikely that the foam, once applied to weeds, will be attractive to bees, other pollinators or other non-target organisms because the sugars in the foam are diluted to 0.5%.

4.15. The prescribed controls include requirements to avoid adverse effects to the environment beyond the application area (Clause 46 of the HPC Notice) and to not apply the substance to water (Clause 52 of the HPC Notice).

4.16. The application of Foamstream V4 by a purpose-built machine is key in reducing the exposure to the environment. It is therefore necessary to apply an additional control to restrict the use of Foamstream V4 to the appropriate equipment (Clause 47 of the HPC Notice): the Foamstream Municipal machine.

Assessment of risks to Māori and their relationship to the environment

4.17. The potential effect of Foamstream V4 on the relationship of Māori to the environment has been assessed in accordance with sections 5(b), 6(d) and 8 of the Act. Under these sections all persons exercising functions, powers, and duties under the Act shall:

- recognise and provide for the maintenance and enhancement of people and communities to provide for their cultural well-being, and
- take into account the relationship of Māori and their culture and traditions with their ancestral lands, water, taonga and the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

4.18. Findings of the cultural risk assessment (CRA) for Foamstream V4 in relation to the above provisions of the Act are summarised below.

Section 5(b) – Recognise and provide for cultural well-being

4.19. This application is not likely to put the cultural well-being of Māori at risk in terms of their cultural beliefs and environmental frameworks.

Section 6(d) – Take into account Māori relationship to the environment

4.20. The CRA for Foamstream V4 considered potential risks and impacts on Māori interests including the relationship of Māori to the environment, culturally significant species and resources, and the tikanga (customary values and practices) associated with these taonga. The CRA has identified cultural concerns in relation to taha hauora (human health and well-being) and culturally significant species, in particular food species. However, potential risks around these issues can be managed, therefore the application is not inconsistent with Māori cultural beliefs and environmental frameworks.

Section 8 – Take into account Treaty of Waitangi principles

4.21. For the EPA, as a Crown agency, this includes the duty to actively protect Māori interests, and ensure that EPA decision making is informed by Māori perspectives. The CRA has assessed cultural risk and identified how Māori interests will be protected.

Assessment of risks to society, the community and the market economy

4.22. No risks to society, communities or the market economy from the approval of Foamstream V4 have been identified.

New Zealand's international obligations

4.23. No international obligations that may be impacted by the approval of Foamstream V4 have been identified.

The effects of the substance being unavailable

4.24. The likely effects of the substance being unavailable in accordance with section 29(1) of the Act have been considered. Should this substance not be available, it could lead to less consumer choice.

Assessment of benefits

4.25. The applicant considers that the approval of Foamstream V4 will provide the following benefits:

4.26. Foamstream V4 is an effective component of the Foamstream herbicide process, which will control unwanted vegetation, common weeds, moss, and algae in cities (cobble and streets, pavements, monuments, street furniture), parks, schools, waterways (waste water site filter-beds, clean water sites), and artificial surfaces (astro-turf and rubber playgrounds/pitches). This will result in a quality, higher value, and tidier environment for the community.

4.27. Furthermore, it is considered that the availability of Foamstream V4 will provide beneficial economic effects for some businesses with the potential for flow-on effects to local communities and the New Zealand economy, including improved consumer choice and greater market competition.

5. Changes to prescribed controls

5.1. The following additional HSNO control apply to this substance under section 77A of the Act, as set out in Table 3:

Table 3: Justification for the section 77A additional controls (see Appendix A for the control wordings)

Control	Justification
Equipment HPC Notice Clause 47	The risk assessment indicates that restrictions on the application methods of this substance are necessary to mitigate the risk of adverse effects that Foamstream V4 could present to organisms in the environment. Accordingly, it is considered that specifying the application method will be more effective than the prescribed controls with respect to their effects on the management, application and risks of this substance.

5.2. The applicant was provided an opportunity to comment on the controls as set out in this decision and no concerns were raised.

6. Risk assessment summary

6.1. After taking into account the prescribed controls and any variations to these controls, it was concluded that the residual level of risk of any potentially significant adverse effects, is negligible.

7. Decision

7.1. Pursuant to section 29 of the Act, I have considered this application for approval under section 28 of the Act. I have considered the effects of this substance throughout its life cycle, the controls that may be imposed on this substance and the likely effects of this substance being unavailable. I have also taken into account the considerations set out in Part 2 of the Act.

7.2. I consider that, with controls in place, the risks to human health and to the environment are negligible, and the benefits associated with the release of this substance will outweigh the adverse effects. Therefore, I have decided that Foamstream V4 is approved with controls in accordance with section 29 of the Act and clause 26 of the Hazardous Substances and New Organisms (Methodology) Order 1998.

Dr Fiona Thomson-Carter	**Date:** 20 August 2018
General Manager, HSNO, EPA	

Appendix: Controls applying to Foamstream V4

EPA Controls

Control code	Notice	Control description
LAB	EPA Labelling Notice 2017	Requirements for labelling of hazardous substances
PKG	EPA Packaging Notice 2017	Requirements for packaging of hazardous substances
SDS	EPA Safety Data Sheet Notice 2017	Requirements for safety data sheets for hazardous substances
DIS	EPA Disposal Notice 2017	Requirements for disposal of hazardous substances
HPC-1	EPA Hazardous Property Controls Notice 2017 Part 1	Hazardous Property Controls preliminary provisions
HPC-3	EPA Hazardous Property Controls Notice 2017 Part 3	Hazardous substances in a place other than a workplace
HPC-4A	EPA Hazardous Property Controls Notice 2017 Part 4A	Site and storage controls for class 9 substances
HPC-4B	EPA Hazardous Property Controls Notice 2017 Part 4B	Use of class 9 substances

HSNO Additional Controls and Modifications to Controls

Code	HSNO Act	Control
Equipment	Section 77A	This substance must only be applied with the Foamstream Municipal machine.

HSW Requirements

Note: these requirements are not set for the substance under this approval but apply in their own right under the HSW Act and HSW (HS) Regulations according to the classification of the substance. They are listed here for information purposes only.

Code	Regulation	Description	Extra information
HSW2-1	Reg 2.1 - 2.4	Workplace labelling of hazardous substance containers	
HSW2-2	Reg 2.5 - 2.10	Signage	
HSW2-3	Reg 2.11	Safety data sheets	
HSW2-4	Reg 2.12 - 2.14	Packaging	
HSW3-1	Reg 3.1	Inventory	

HSW3-2	Reg 3.2 - 3.3	Managing risks associated with hazardous substances	
HSW4-2	Reg 4.5 - 4.6	Information, instruction, training and supervision	
HSW5-2	Reg 5.6 - 5.13	Emergency response plans	
HSW13-2	Reg 13.7	Duty of PCBU who directs work using class 6, 8.1, 8.2, or 8.3 substances to ensure equipment is appropriate	
HSW13-3	Reg 13.8	Duty of PCBU who directs work using class 6 and 8 substances to ensure personal protective equipment used	
HSW13-8	Reg 13.17	Prohibition on use of substance in excess of tolerable exposure limit	
HSW13-9	Reg 13.18	Duty of PCBU to ensure prescribed exposure standards for class 6 substances not exceeded	
HSW13-14	Reg 13.30	Secondary containment requirements for class 6 and 8 pooling substances	
HSW16-1	Part 16	Requirements for tank wagons and transportable containers	
HSW17-1	Part 17	Requirements for stationary container systems	