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CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999

Regulations Amending the Prohibition of Certain Toxic Substances Regulations, 2012

P.C. 2016-816 September 23, 2016

Whereas, pursuant to subsection 332(1) (see footnote a) of the *Canadian Environmental Protection Act, 1999* (see footnote b), the Minister of the Environment published in the *Canada Gazette*, Part I, on April 4, 2015, a copy of the proposed *Regulations Amending the Prohibition of Certain Toxic Substances Regulations, 2012*, substantially in the annexed form, and persons were given an opportunity to file comments with respect to the proposed Regulations or to file a notice of objection requesting that a board of review be established and stating the reasons for the objection;

Whereas, pursuant to subsection 93(3) of that Act, the National Advisory Committee has been given an opportunity to provide its advice under section 6 (see footnote c) of that Act;

And whereas, in the opinion of the Governor in Council, pursuant to subsection 93(4) of that Act, the proposed Regulations do not regulate an aspect of a substance that is regulated by or under any other Act of Parliament in a manner that, in the opinion of the Governor in Council, provides sufficient protection to the environment and human health;

Therefore, His Excellency the Governor General in Council, on the recommendation of the Minister of the Environment and the Minister of Health, pursuant to subsection 93(1) of the *Canadian Environmental Protection Act, 1999* (see footnote d), makes the annexed *Regulations Amending the Prohibition of Certain Toxic Substances Regulations, 2012*.

Regulations Amending the Prohibition of Certain Toxic Substances Regulations, 2012

Amendments

1 Section 3 of the *Prohibition of Certain Toxic Substances Regulations, 2012* (see footnote 1) **is replaced by the following:**

Non-application — use

3 (1) These Regulations, except for subsections (2) and (3), do not apply to any toxic substance or to any product containing it that is to be used in a laboratory for analysis, in scientific research or as a laboratory analytical standard.

Information to Minister — more than 10 g

(2) Every person must submit to the Minister in any calendar year the information set out in Schedule 3 for each toxic substance or a product containing it that they intend to use for a purpose referred to in subsection (1) as soon as feasible before the use of more than 10 g of the substance, by itself or in a product, in that calendar year. The information must be submitted only once in a calendar year in respect of each

substance or product.

Added substance — Schedule 2.1

(3) Any person that is using a toxic substance set out in column 1 of Schedule 2.1 or a product containing it on the date set out in column 2 in respect of that substance, for a purpose referred to in subsection (1), must, if the quantity of the toxic substance used, by itself or in a product, exceeded 10 g in the calendar year in which that day occurs, submit to the Minister, within 60 days after that day, the information referred to in Schedule 3. The information must be submitted only once in a calendar year in respect of each substance or product.

2 (1) Subsection 4(1) of the French version of the Regulations is replaced by the following:

Substance toxique — annexe 1

4 (1) Sous réserve des articles 5 et 9, il est interdit de fabriquer, d'utiliser, de vendre, de mettre en vente ou d'importer toute substance toxique mentionnée à l'annexe 1 ou tout produit qui en contient, à moins que la présence de celle-ci ne soit incidente.

(2) Section 4 of the Regulations is amended by adding the following after subsection (2):

Non-application — certain products

(3) Subsection (1) does not apply to products other than those set out in column 2 of Part 3 of Schedule 1 that contain the toxic substance set out in column 1 of that Part.

3 The Regulations are amended by adding the following after section 4:

Exception — inventory of substance

4.1 (1) A person may use, sell or offer for sale a toxic substance set out in item 13 of Part 1 of Schedule 1 that was manufactured or imported before January 1, 2017.

Exception — inventory of products

(2) A person may use, sell, or offer for sale any product set out in column 2 of Part 3 of Schedule 1 that contains a toxic substance set out in item 13 of Part 1 of Schedule 1 if the product was manufactured or imported before January 1, 2017.

4 Section 5 of the Regulations is replaced by the following:

Exception — manufactured or imported before March 14, 2013

5 (1) A person may use, sell or offer for sale a product containing a toxic substance set out in item 11 or 12 of Part 1 of Schedule 1 if the product was manufactured or imported before March 14, 2013.

Exception — manufactured or imported before coming into force of subsection

(2) A person may use, sell or offer for sale a product containing the toxic substance set out in item 5 of Part 2 of Schedule 1, with the molecular formula $C_{12}H_{(10-n)}Br_nO$ in which n=10, if the product was manufactured or imported before the day on which this subsection comes into force.

5 (1) Subsection 6(1) of the Regulations is replaced by the following:

Toxic substance — Schedule 2

6 (1) Subject to subsections (2) to (2.5) and sections 7 and 9, a person must not manufacture, use, sell, offer for sale or import a toxic substance set out in column 1 of Part 1, 1.1, 1.2, 2, 3 or 3.1 of Schedule 2 or a product containing it unless the toxic substance is incidentally present.

(2) Paragraph 6(2)(a) of the Regulations is replaced by the following:

(a) the toxic substance set out in column 1 of Part 1 of Schedule 2 or the product containing it is

designed for a use set out in column 2 in respect of that substance;

(3) Paragraph 6(2)(c) of the Regulations is replaced by the following:

(c) a product set out in column 2 of Part 3 of Schedule 2 contains the toxic substance set out in column 1 in a concentration less than or equal to that set out in column 3, including any incidental presence of the substance.

(4) Section 6 of the Regulations is amended by adding the following after subsection (2):

Permitted use and import — Part 1.1 of Schedule 2

(2.1) The prohibition to use or import a product containing a toxic substance set out in column 1 of item 1 of Part 1.1 of Schedule 2 does not apply to a product set out in column 2 of that item that contains that substance.

Permitted activities — Part 1.1 of Schedule 2

(2.2) The prohibition to use, sell, offer for sale or import a product containing a toxic substance set out in column 1 of any of items 2 to 5 of Part 1.1 of Schedule 2 does not apply to a product set out in column 2 of those items that contains that substance.

Permitted use — Part 1.2 of Schedule 2

(2.3) The prohibition to use a product containing a toxic substance set out in column 1 of Part 1.2 of Schedule 2 does not apply to a product set out in column 2 that contains that substance.

Non-application — manufactured items

(2.4) The prohibition to use, sell, offer for sale or import a product containing a toxic substance set out in column 1 of any of items 2 to 5 of Part 2 of Schedule 2 does not apply to a product that is a manufactured item that is formed into a specific physical shape or design during its manufacture and that has, for its final use, a function or functions dependent in whole or in part on its shape or design.

Permitted use — Part 3.1 of Schedule 2

(2.5) The prohibition to use a product containing a toxic substance set out in column 1 of Part 3.1 of Schedule 2 does not apply to a product set out in column 2 that contains the substance in a concentration less than or equal to that set out in column 3, including any incidental presence of the substance.

(5) Subsection 6(3) of the French version of the Regulations is replaced by the following:

Précisions

(3) Il est entendu que l’exception relative à la présence incidente prévue au paragraphe (1) ne s’applique pas dans le cas d’un produit visé à l’alinéa (2)c).

(6) Subsections 6(4) and (5) of the Regulations are replaced by the following:

Exception — personal use

(4) Subsection (1) does not apply to the use or import of a product containing a toxic substance set out in column 1 of Part 2 of Schedule 2 if the product is used or intended to be used for a personal use.

6 Subsection 7(2) of the Regulations is replaced by the following:

Exception — products

(2) A person may use, sell or offer for sale a product

(a) containing a toxic substance that is set out in any of items 2 to 5 of Part 2 of Schedule 2, if the product was manufactured or imported before the coming into force of this subsection; or

(b) containing a toxic substance that is set out in item 2 of Part 3 of Schedule 2, if the product was manufactured or imported before March 14, 2013.

Exception — manufactured items

(3) A person may use, sell or offer for sale a product that was manufactured or imported before May 29, 2008 and that contains the toxic substance set out in item 1 of Part 3.1 of Schedule 2 if the product is a manufactured item that was formed into a specific physical shape or design during its manufacture and that has, for its final use, a function or functions dependent in whole or in part on its shape or design.

7 Subsections 9(1) to (3) of the Regulations are replaced by the following:

Requirement for permit

9 (1) Any person that, on March 14, 2013, is a manufacturer or importer of a toxic substance or a product containing it that is prohibited under section 4 or 6 may continue to manufacture or import the substance or product if they have been issued a permit under section 10.

Addition of substance

(2) Subject to subsection (3), in the case of a toxic substance that, after March 14, 2013, is either added to Schedule 1 and prohibited under section 4 — other than the toxic substance set out in item 13 of Part 1 of Schedule 1 — or added to Schedule 2 and prohibited under section 6, any person that is a manufacturer or importer of the toxic substance or a product containing it on the date set out in column 2 of Schedule 2.1 in respect of that substance may continue to manufacture or import the substance or a product containing it if they have been issued a permit under section 10.

Temporary permitted uses

(3) Any person that, under paragraph 6(2)(b), manufactures or imports a toxic substance that is set out in any of items 1 to 5 of Part 2 of Schedule 2 or a product containing it on the date set out in column 3 in respect of that substance may continue that activity if they have been issued a permit under section 10.

8 Subsection 10(3) of the Regulations is replaced by the following:

Expiry and permit renewal

(3) A permit expires 12 months after the day on which it is issued unless, at least 30 days before the day on which the permit expires, the applicant submits an application for renewal to the Minister that contains the information referred to in Schedule 4.

Limits on renewal

(4) A permit may only be renewed twice and subsections (1) and (2) apply to any renewal.

9 The portion of section 12 of the French version of the Regulations before paragraph (a) is replaced by the following:

Certaines substances

12 Toute personne qui fabrique ou importe une substance toxique mentionnée à la colonne 1 de la partie 4 de l'annexe 2 ou un produit qui en contient, incidemment ou non, présente au ministre un rapport contenant les renseignements prévus à l'annexe 5 au plus tard le 31 mars suivant la fin de l'année civile durant laquelle la substance toxique ou le produit qui en contient a été fabriqué ou importé si, au cours de cette année :

10 Section 13 of the Regulations is replaced by the following:

Accredited laboratory

13 Any determination of concentration or quantity under these Regulations must be conducted by a laboratory that

(a) is accredited under the International Organization for Standardization standard ISO/IEC 17025:2005, entitled *General requirements for the competence of testing and calibration laboratories*, as amended from time to time;

(b) meets a standard equivalent to the standard referred to in paragraph (a); or

(c) is accredited in accordance with the Quebec *Environment Quality Act*, CQLR, c. Q-2, as amended from time to time.

11 Section 15 of the Regulations is amended by adding the following after subsection (2):

Records moved

(3) If the records are moved, the person must notify the Minister, in writing, of the civic address of the new location within 30 days after the day of the move.

12 Section 16 of the Regulations is replaced by the following:

Activities prohibited under repealed regulations

16 A permit must not be obtained under these Regulations for an activity that is prohibited under the *Prohibition of Certain Toxic Substances Regulations, 2005*, the *Perfluorooctane Sulfonate and its Salts and Certain Other Compounds Regulations* or the *Polybrominated Diphenyl Ethers Regulations*.

13 Part 1 of Schedule 1 to the Regulations is amended by adding the following references after the heading "PART 1":

(Sections 1 and 2 and subsections 4(1), 4.1(1) and (2) and 5(1))

14 Part 1 of Schedule 1 to the Regulations is amended by adding the following after item 12:

Item	Toxic Substance
13	Hexabromocyclododecane, which has the molecular formula $C_{12}H_{18}Br_6$

15 Part 2 of Schedule 1 to the Regulations is amended by adding the following references after the heading "PART 2":

(Sections 1 and 2 and subsections 4(1) and (2), 5(2) and 9(2))

16 Part 2 of Schedule 1 to the Regulations is amended by adding the following after item 4:

Item	Toxic Substance
5	Polybrominated diphenyl ethers that have the molecular formula $C_{12}H_{(10-n)}Br_nO$ in which $4 \leq n \leq 10$

17 Schedule 1 to the Regulations is amended by adding the following after Part 2:

PART 3

(Sections 1 and 2 and subsections 4(1) and (3) and 4.1(2))

Prohibited Products

Item	Column 1	Column 2

	Toxic Substance	Product Containing the Toxic Substance
1	Hexabromocyclododecane, which has the molecular formula $C_{12}H_{18}Br_6$	Expanded and extruded polystyrene foams and their intermediary products for a building or construction application

18 Parts 1 and 2 of Schedule 2 to the Regulations are replaced by the following:

PART 1

(Sections 1 and 2, subsection 6(1), paragraph 6(2)(a) and subsection 9(2))

Permitted Uses — All Activities

Item	Column 1 Toxic Substance	Column 2 Permitted Uses
1	Benzidine and benzidine dihydrochloride, which have the molecular formulae $C_{12}H_{12}N_2$ and $C_{12}H_{12}N_2 \cdot 2HCl$, respectively	**(a)** Staining for microscopic examination, such as immunoperoxidase staining, histochemical staining or cytochemical staining; **(b)** Reagent for detecting blood in biological fluids; **(c)** Niacin test to detect certain micro-organisms; and **(d)** Reagent for detecting chloralhydrate in biological fluids.
2	2-Methoxyethanol, which has the molecular formula $C_3H_8O_2$	**(a)** Adhesives and coatings for aircraft refinishing; and **(b)** Semiconductor manufacturing process.
3	Benzenamine, *N*-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene	Additive in rubber, except in tires
4	Perfluorooctane sulfonate and its salts and compounds that contain one of the following groups: $C_8F_{17}SO_2$, $C_8F_{17}SO_3$ or $C_8F_{17}SO_2N$	**(a)** Photoresists or anti-reflective coatings for photolithography processes; and **(b)** Photographic films, papers and printing plates.

PART 1.1

(Sections 1 and 2 and subsections 6(1), (2.1) and (2.2) and 9(2))

Permitted Uses — Certain Activities

Item	Column 1 Toxic Substance	Column 2 Permitted Uses

Note 1
"Military operation" means any operation taken to protect national security, support humanitarian relief efforts, participate in multilateral military or peace-keeping activities under the auspices of international organizations or defend a member state of the North Atlantic Treaty Organization.

PART 1.2

(Sections 1 and 2 and subsections 6(1) and (2.3))

Permitted Uses — Use Only

Item	Column 1 Toxic Substance	Column 2 Permitted Uses
1	Pentachlorobenzene, which has the molecular formula C_6HCl_5	Use with chlorobiphenyls contained in equipment or liquids in the service of equipment in which their use is permitted under the *PCB Regulations*
2	Tetrachlorobenzenes, which have the molecular formula $C_6H_2Cl_4$	Use with chlorobiphenyls contained in equipment or liquids in the service of equipment in which their use is permitted under the *PCB Regulations*

PART 2

(Sections 1 and 2, subsection 6(1), paragraph 6(2)(b), subsections 6(2.4) and (4) and 7(1), paragraph 7(2)(a) and subsections 9(2) and (3))

Temporary Permitted Uses

Item	Column 1 Toxic Substance	Column 2 Permitted Uses	Column 3 Date
1	Benzenamine, *N*-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene	Additive in lubricants	March 14, 2015
2	Perfluorooctanoic acid, which has the molecular formula $C_7F_{15}CO_2H$, and its salts	Water-based inks and photo media coatings	January 1, 2017
3	Compounds that consist of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which n = 7 or 8 and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom	Water-based inks and photo media coatings	January 1, 2017
4	Perfluorocarboxylic acids that have the molecular formula $C_nF_{2n+1}CO_2H$ in which $8 \leq n \leq 20$, and their salts	Water-based inks and photo media coatings	January 1, 2017

5	Compounds that consist of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which $8 \leq n \leq 20$ and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom	Water-based inks and photo media coatings	January 1, 2017

19 Part 3 of Schedule 2 to the Regulations is amended by adding the following references after the heading "PART 3":

(Sections 1 and 2, subsection 6(1), paragraphs 6(2)(c) and 7(2)(b) and subsection 9(2))

20 Schedule 2 to the Regulations is amended by adding the following after Part 3:

PART 3.1

(Sections 1 and 2 and subsections 6(1) and (2.5), 7(3) and 9(2))

Concentration Limit for Certain Uses

	Column 1	Column 2	Column 3
Item	Toxic Substance	Product Containing the Toxic Substance	Concentration Limit of the Toxic Substance
1	Perfluorooctane sulfonate and its salts and compounds that contain one of the following groups: $C_8F_{17}SO_2$, $C_8F_{17}SO_3$ or $C_8F_{17}SO_2N$	Aqueous film forming foam	10 ppm

21 Part 4 of Schedule 2 to the Regulations is amended by adding the following references after the heading "PART 4":

(Sections 1 and 2, subsection 9(2) and section 12)

22 The Regulations are amended by adding, after Schedule 2, the Schedule 2.1 set out in the schedule to these Regulations.

23 The references after the heading "SCHEDULE 3" in Schedule 3 to the Regulations are replaced by the following:

(Subsections 3(2) and (3))

24 (1) Paragraph 2(b) in Schedule 4 to the Regulations is replaced by the following:

(b) the quantity of the toxic substance manufactured or imported during a 12-month period ending no more than six months before the day on which the application is submitted, and its unit of measurement;

(2) Subparagraph 2(d)(i) of Schedule 4 to the Regulations is replaced by the following:

(i) the quantity of the product manufactured or imported during any 12-month period ending no more than six months before the day on which the application is submitted, and its unit of measurement,

(3) Subparagraph 2(d)(iii) of Schedule 4 to the Regulations is replaced by the following:

(iii) the estimated concentration of the toxic substance in that product or the estimated mass of the toxic substance contained in the product, and its unit of measurement; and

(4) Section 2 of Schedule 4 to the Regulations is amended by striking out the word "and" at the end of paragraph (e) and repealing paragraph (f).

Transitional Provision

25 Section 11 of the *Perfluorooctane Sulfonate and its Salts and Certain Other Compounds Regulations*, as it read immediately before the day on which these Regulations come into force, continues to apply until March 31, 2019 to any person to whom section 9 of those Regulations applied.

Consequential Amendments

26 Items 19 and 21 of the schedule to the *Regulations Designating Regulatory Provisions for Purposes of Enforcement (Canadian Environmental Protection Act, 1999)* (see footnote 2) **are repealed.**

Repeals

27 The following Regulations are repealed:

(a) the *Perfluorooctane Sulfonate and its Salts and Certain Other Compounds Regulations* (see footnote 3)**; and**

(b) the *Polybrominated Diphenyl Ethers Regulations* (see footnote 4)**.**

Coming into Force

28 (1) Subject to subsection (2), these Regulations come into force on the day that, in the third month after the month in which they are registered, has the same calendar number as the day on which they are registered or, if that third month has no day with that number, the last day of that third month.

(2) Sections 2, 3, 14 and 17 come into force on January 1, 2017.

SCHEDULE

(Section 22)

SCHEDULE 2.1

(Subsections 3(3) and 9(2))

Added Toxic Substances

Item	Column 1 Toxic Substance	Column 2 Date Substance Added
1	Polybrominated diphenyl ethers that have the molecular formula $C_{12}H_{(10-n)}Br_nO$ in which $4 \leq n \leq 10$	Day on which this Schedule comes into force
2	Perfluorooctane sulfonate and its salts and compounds that contain one of the following groups: $C_8F_{17}SO_2$, $C_8F_{17}SO_3$ or $C_8F_{17}SO_2N$	Day on which this Schedule comes into force

3	Perfluorooctanoic acid, which has the molecular formula $C_7F_{15}CO_2H$, and its salts	Day on which this Schedule comes into force
4	Compounds that consist of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which n = 7 or 8 and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom	Day on which this Schedule comes into force
5	Perfluorocarboxylic acids that have the molecular formula $C_nF_{2n+1}CO_2H$ in which $8 \leq n \leq 20$, and their salts	Day on which this Schedule comes into force
6	Compounds that consist of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which $8 \leq n \leq 20$ and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom	Day on which this Schedule comes into force
7	Hexabromocyclododecane, which has the molecular formula $C_{12}H_{18}Br_6$	January 1, 2017

REGULATORY IMPACT ANALYSIS STATEMENT

(*This statement is not part of the Regulations*.)

1. Issues

The *Regulations Amending the Prohibition of Certain Toxic Substances Regulations, 2012* (the amendments) address different issues with respect to Canada's management of five toxic substances to reduce harmful releases to the environment. These five substances are hexabromocyclododecane (HBCD); perfluorooctanoic acid, its salts, and its precursors (collectively referred to as PFOA); long-chain perfluorocarboxylic acids, their salts, and their precursors (collectively referred to as LC-PFCAs); polybrominated diphenyl ethers (PBDEs); and perfluorooctane sulfonate, its salts and its precursors (collectively referred to as PFOS). (see footnote 5)

Final screening assessments conducted in 2012 by the Department of the Environment (the Department) concluded that HBCD, PFOA, and LC-PFCAs are toxic to the environment under the *Canadian Environmental Protection Act, 1999* (CEPA). (see footnote 6) Currently, there are no risk management instruments in place respecting preventive or control actions for HBCD in Canada. In the case of PFOA and LC-PFCAs, early risk management actions have been taken.

In addition, although regulatory controls pertaining to PBDEs and PFOS already exist under CEPA, further restrictions are required to ensure that the substances continue to be phased out.

Also, the Standing Joint Committee for the Scrutiny of Regulations (SJCSR) (see footnote 7) had suggested housekeeping changes to the *Prohibition of Certain Toxic Substances Regulations, 2012* (the Prohibition Regulations, 2012) which would improve the clarity of the regulatory text.

2. Background

The amendments have been developed as part of Canada's Chemicals Management Plan (CMP). The CMP is a Government of Canada initiative aimed at reducing the risks posed by certain chemicals to Canadians and their environment. The CMP builds on previous initiatives by assessing chemicals used in Canada and by taking action on chemicals found to be harmful.

The Prohibition Regulations, 2012, which were developed under CEPA, came into force on March 14, 2013.

They prohibit the manufacture, use, sale, offer for sale, or import of specified toxic substances and products that contain these substances, with a limited number of exemptions.

2.1 Background and context for HBCD

HBCD is used primarily as a flame retardant in insulation materials in the building and construction industry. The final screening assessment report for HBCD concluded that HBCD meets the criterion as defined in paragraph 64(a) of CEPA, as it is entering or may be entering the environment in a quantity or a concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity. (see footnote 8) In fact, the substance HBCD has demonstrated ecotoxicity (see footnote 9) in both aquatic and terrestrial species. The assessment report also concluded that HBCD meets the criteria for persistence and bioaccumulation, as defined in the *Persistence and Bioaccumulation Regulations* made under CEPA. In addition, the report concluded that HBCD meets the virtual elimination criteria set out in subsection 77(4) of CEPA. HBCD was added to the List of Toxic Substances in Schedule 1 of CEPA in 2012.

2.1.1 Current uses

Prior to global action to phase out HBCD, beginning in 2013, HBCD was one of the largest volume flame retardants manufactured globally. Its major end-use application has been in the production of expanded polystyrene (EPS) and extruded polystyrene (XPS) foam, and both products are mostly used as insulation materials in the building and construction industry. EPS and XPS foam in building and construction applications account for approximately 99% of HBCD use in Canada.

Other minor and historical uses of HBCD include its use in high-impact polystyrene for electrical and electronic parts, in polymer dispersions as a coating agent for residential and commercial textiles (upholstered furniture, transportation seating, automobile interior textiles, wall coverings and draperies), and in EPS and XPS foam for transportation applications and in household appliances.

While HBCD has never been manufactured in Canada, it is imported into Canada mainly for the production of intermediary and finished EPS and XPS products. A study conducted for the Department estimated that in 2012, approximately 363 tonnes of HBCD were imported for the production of XPS foam and EPS resin, as well as within EPS resin. Of this total, approximately 27 tonnes of HBCD were exported within EPS resin, which translates to approximately 336 tonnes of net HBCD consumption in Canada. (see footnote 10) This study also reported that there may be a low volume of imports of high-impact polystyrene and textiles into Canada containing HBCD in very niche applications.

2.1.2 Release profile

Releases of HBCD to the environment may occur during the manufacture, service life, and disposal of the substance and products containing the substance. HBCD may be released to air, water, soil and sediment. Based on the 2012 HBCD import and use data, there is little expected release of HBCD into the Canadian environment. It is estimated that 92.4% of HBCD (approximately 336 tonnes) will eventually be landfilled as a component of EPS and XPS foams, and 7.5% of HBCD (approximately 27 tonnes) was exported within EPS resin. The remaining 0.1% of HBCD (approximately 0.4 tonnes) was released during the manufacture and use of EPS and XPS foams, as well as during the manufacture of EPS resins. Tables 1 and 2 show, respectively, the estimated release of HBCD by media and by activity for EPS and XPS foams containing HBCD.

Table 1: Estimated release of HBCD contained in EPS and XPS by media in 2012

Release media	Quantity (Tonnes)	Percentage of HBCD
Release to solid waste	0.03	0.01%
Release to air	0.17	0.05%

Release to water	0.17	0.05%
Total (rounded figures)	0.40	0.10%

Source: Cheminfo Services

Table 2: Estimated release of HBCD contained in EPS and XPS by activity in 2012

Production activity	Quantity (Tonnes)	Percentage of HBCD
Release during manufacturing operations	0.04	<0.1%
Release during service life	0.32	0.1%
Release during disposal	0.00	0.0%
Total (rounded figures)	0.40	0.1%

Source: Cheminfo Services

2.1.3 Current federal risk management

Currently, HBCD is not subject to any federal risk management measures.

2.1.4 Risk management activities in other jurisdictions

United States

The United States Environmental Protection Agency (U.S. EPA) announced an HBCD Action Plan in August 2010. As part of this Action Plan, the U.S. EPA published a Significant New Use Rule (SNUR), which came into force on November 23, 2015, that requires manufacturers, importers and processors to notify the U.S. EPA before manufacturing, importing or processing HBCD and products containing HBCD for use in consumer textiles, other than those used in motor vehicles. In addition, the U.S. EPA is considering a comprehensive ban as part of this Action Plan. The U.S. EPA also conducted a Design for the Environment (DFE) alternatives assessment of HBCD to aid users in selecting suitable alternative substances. The final report, published in June 2014, focused on EPS and XPS foam containing HBCD, and alternatives for uses in the building and construction industry. In August 2015, the U.S. EPA published a problem formulation and initial assessment for the Cyclic Aliphatic Bromides Cluster, which included HBCD used as a flame retardant in EPS and XPS foams and polystyrene products. The report identifies scenarios where further analysis is necessary to assess the risks to workers, consumers, the general population and aquatic, terrestrial and avian wildlife exposed as a result of the manufacture, processing and use of HBCD.

Other countries

In February 2011, HBCD was included in the amended Annex XIV of the European Union’s Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation. As a result, HBCD is subject to the authorization procedure under REACH whereby only those authorized to manufacture, import or use HBCD may do so after August 2015. Imported articles containing HBCD are outside the scope of the authorization procedure and may continue to be imported after August 2015. In February 2014, a consortium of eight European Union EPS formulators submitted two joint applications for authorization for the continued use of HBCD in EPS in building applications after August 2015. The consortium was granted an authorization for the continued use of HBCD in EPS in building applications until August 21, 2017. In May 2014, Japan designated

HBCD as a Class I Specified Chemical Substance, (see footnote 11) and published regulations placing controls on the substance. The regulations prohibit the manufacture and import of HBCD as well as the import of four types of products containing HBCD: flame retardant textile, chemicals for flame retardant treatment for textile, expandable polystyrene for flame-retardant EPS and flame-retardant curtains.

International organizations

HBCD was listed to Annex A (Elimination) of the Stockholm Convention on Persistent Organic Pollutants (the Stockholm Convention) in November 2013. Upon ratification of the listing, parties will be required to prohibit the production and use of HBCD. The listing of HBCD included a five-year specific exemption for the use of HBCD in EPS and XPS in buildings which expires in November 2018. HBCD is also under consideration for listing to the Protocol on Persistent Organic Pollutants to the Convention on Long-range Transboundary Air Pollution.

2.2 Background and context for PFOA and LC-PFCAs

PFOA and LC-PFCAs are primarily used as water, oil and grease repellants; as surfactants; and as spreading and wetting agents. The final screening assessment reports concluded that PFOA and LC-PFCAs meet the criterion under subsection 64(a) of CEPA, as they are entering or may enter the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity.

The reports also concluded that PFOA and LC-PFCAs were persistent, as defined by the *Persistence and Bioaccumulation Regulations*, and based on the weight of evidence, the substances accumulate and biomagnify in terrestrial and marine mammals. As a result of the assessments, PFOA and LC-PFCAs were added to the List of Toxic Substances in Schedule 1 of CEPA in 2013.

2.2.1 Historical and current uses

While PFOA and LC-PFCAs are not manufactured in Canada, they were historically imported and may continue to be imported for use in the following manufacturing sectors: textile mills, paper and packaging, paints and coatings, inks and photo media, chemical manufacturing, electrical and electronics, cleaning products, plastic and rubber products. A study conducted for the Department estimated that approximately 308 tonnes of PFOA and LC-PFCAs were imported into Canada in 2010.

2.2.2 Release profile

PFOA and LC-PFCAs may be found in the environment due to releases from manufacturing or processing facilities, effluent releases from wastewater treatment plants, landfill leachate, and the degradation and transformation of precursor compounds. No data are available on the actual release of these substances to the Canadian environment.

2.2.3 Current federal risk management

In June 2006, the Government of Canada published a Notice of Action Plan for the assessment and management of PFCAs and their precursors. (see footnote 12) The Action Plan included measures to prevent the introduction of new substances into Canada that would contribute to the level of PFCAs in the environment, and to seek action from industry to address sources of PFCAs already in Canadian commerce. To this end, a voluntary *Environmental Performance Agreement Respecting Perfluorinated Carboxylic Acids (PFCAs) and their Precursors in Perfluorochemical Products Sold in Canada* (the Performance Agreement) was signed on March 30, 2010. Signatories to the Performance Agreement agreed to reduce the amount of PFOA and LC-PFCAs in perfluorinated chemicals in Canadian commerce by 95% by December 31, 2010, and to eliminate them by December 31, 2015. The 2010 reduction target was met by all signatories and annual progress reports received to date show that the 2015 target should also be met. The Performance Agreement was implemented as an early risk management action while the Department and Health Canada pursued further assessment to guide future risk management actions.

2.2.4 Risk management activities in other jurisdictions

United States

The U.S. EPA announced the Long-Chain Perfluorinated Chemicals (PFCs) Action Plan in December 2009. As part of this Action Plan, the U.S. EPA published a final SNUR on September 30, 2013, requiring manufacturers, importers and processors to notify the U.S. EPA before manufacturing, importing or processing LC-PFCAs and products containing these substances for use in carpets, or for treating carpets, except for their use as a surfactant in carpet cleaning products. In addition, the U.S. EPA published a proposed SNUR on January 15, 2015. The proposed SNUR would require manufacturers, importers and processors to notify the U.S. EPA before manufacturing, importing or processing LC-PFCAs or manufacturing and processing articles containing LC-PFCAs for which any use will not be ongoing after December 31, 2015. Prior to establishing this Action Plan, the U.S. EPA established a Stewardship Program where industry committed to reduce global facility emissions and product content of the substance PFOA and related chemicals by 95% by 2010, and to work toward eliminating emissions and product content by 2015. These targets are the same as in the Performance Agreement mentioned above. The U.S. EPA has also conducted a new chemical review of alternatives for the substance PFOA and related chemicals to ensure that new substances are safer alternatives. To date, over 100 alternatives have been assessed. (see footnote 13)

Other countries

In December 2012, the European Chemicals Agency (ECHA) identified LC-PFCAs as being very persistent and very bioaccumulative. Subsequently, the substances were added to the Candidate List of Substances of Very High Concern. (see footnote 14) Inclusion of substances on this list creates legal obligations, (see footnote 15) such as preparing notifications and reports, for companies that are manufacturing, importing or using such chemicals. In June 2013, the ECHA also concluded that the substance PFOA is persistent, bioaccumulative, and toxic. A proposal to restrict PFOA, PFOA salts and PFOA-related substances in the European Union was published in October 2014 for public consultations. The public consultations will inform the European Commission decision to restrict PFOA, PFOA salts and PFOA-related substances under Annex XVII of the REACH regulation.

International organizations

Canada is a member of the Global Perfluorinated Chemicals Group, consisting of governments, international organizations, and other stakeholders. The objectives of the Group are to consider the development, facilitation and promotion of national and international stewardship programs and regulatory approaches to reduce emissions and the content of relevant perfluorinated chemicals of concern, including PFOA and LC-PFCAs, in products and to work toward global elimination, where appropriate and technically feasible.

In June 2015, the European Union submitted a proposal to list PFOA under the Stockholm Convention.

2.3 Background and context for PBDEs

PBDEs are used as a flame retardant mostly in consumer products such as electrical and electronic goods, and in transportation, textile and construction products. PBDEs include tetraBDE, pentaBDE, hexaBDE, heptaBDE, octaBDE, nonaBDE, and decaBDE. These PBDEs are used in the formulation of three commercial mixtures: PentaBDE, OctaBDE and DecaBDE. (see footnote 16) The composition of PBDEs in each commercial mixture is shown in Table 3. PBDEs and resins, polymers and mixtures containing PBDEs are currently managed under the *Polybrominated Diphenyl Ethers Regulations* (the PBDEs Regulations), (see footnote 17) in response to a final screening assessment report which concluded that PBDEs meet the criterion under paragraph 64(a) of CEPA as they are entering or may enter the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity. (see footnote 18) The report also concluded that tetraBDE, pentaBDE and hexaBDE meet the criteria for persistence and bioaccumulation as defined in the *Persistence and Bioaccumulation Regulations* made under CEPA. PBDEs were added to the List of Toxic Substances in Schedule 1 of CEPA in 2006.

Table 3: Composition of PBDEs in each commercial mixture

Commercial mixtures	PBDEs						
	tetraBDE	pentaBDE	hexaBDE	heptaBDE	octaBDE	nonaBDE	decaBDE

PentaBDE	X	X	X	X	-	-	-
OctaBDE	-	X	X	X	X	X	X
DecaBDE	-	-	-	-	X	X	X

An ecological state of the science report on the bioaccumulation and transformation of decaBDE was published by the Department in August 2010 based on new information that became available after the publication of the final PBDEs assessment. (see footnote 19) The report concluded that decaBDE may also contribute to the formation of bioaccumulative or potentially bioaccumulative transformation products, such as lower brominated BDEs, in organisms and in the environment. The findings of the ecological state of the science report and comments received from the public provided justification for the development of additional regulatory controls.

2.3.1 Current uses

PBDEs have been used in three commercial mixtures: PentaBDE, OctaBDE and DecaBDE. Historically, these have been used as flame retardants, mostly in consumer products such as furniture, televisions and computers.

A voluntary phase-out of the production of PentaBDE and OctaBDE in the United States was completed at the end of 2004. Subsequently, production of these commercial mixtures was phased-out globally.

Furthermore, the three main manufacturers of the DecaBDE commercial mixture operating in the United States voluntarily ceased exports of the DecaBDE commercial mixture to Canada in mid-2012. Currently, there are no known Canadian users or importers of the DecaBDE commercial mixture. Until recently, the aerospace sector was using products that contain decaBDE for niche applications, but has since completed their transition to alternate products that do not contain decaBDE.

2.3.2 Release profile

Releases of PBDEs into the environment may occur during manufacture, processing, transportation, use, improper handling, improper storage or containment and disposal.

2.3.3 Current federal risk management

The PBDEs Regulations, which were developed under CEPA, came into force on June 19, 2008. The PBDEs Regulations prohibit the manufacture of all seven PBDEs. Therefore, the manufacture of the three commercial mixtures (i.e. PentaBDE, OctaBDE and DecaBDE) is prohibited. The PBDEs Regulations also prohibit the use, sale, offer for sale or import of tetraBDE, pentaBDE and hexaBDE, as well as mixtures (i.e. PentaBDE and OctaBDE), polymers and resins containing these substances. The PBDEs Regulations do not prohibit the use, sale, offer for sale or import of decaBDE or mixtures, polymers and resins containing decaBDE. The Department is currently evaluating approaches for managing any risks associated with manufactured items containing PBDEs which are not currently prohibited.

2.3.4 Risk management activities in other jurisdictions

United States

The U.S. EPA launched the PBDEs Action Plan in 2010. One component of the PBDEs Action Plan is the voluntary commitment from principal U.S. manufacturers and importers of the DecaBDE commercial mixture to initiate a reduction in the manufacture, import and sales of the DecaBDE commercial mixture starting in 2010, with all sales to cease by December 31, 2013. The U.S. EPA intends to encourage other importers of the DecaBDE commercial mixture to join this initiative. As part of the Action Plan, the U.S. EPA also conducted a DFE alternatives assessment of decaBDE to aid users in selecting suitable alternative substances. The final report released in January 2014 focused on alternatives to decaBDE in a variety of polymers and applications.

Other countries

The European Commission has published Regulation No. 757/2010, which prohibits the production and use of the PentaBDE and OctaBDE commercial mixtures. In August 2014, the European Chemicals Agency (ECHA) proposed a restriction on the manufacture, use and placement on the market of decaBDE, and articles containing decaBDE in concentrations greater than 0.1% by weight. The proposal includes exemptions for resale of previously used electrical and electronic equipment within the scope of the Directive 2002/95/EC and for the aviation sector.

International organizations

Components of the PentaBDE and OctaBDE commercial mixtures (i.e. tetraBDE, pentaBDE, hexaBDE and heptaBDE) were added to the Stockholm Convention and to the Protocol on Persistent Organic Pollutants to the Convention on Long-range Transboundary Air Pollution in 2009. Parties ratifying these additions are required to prohibit the manufacture and use of these substances. Canada ratified these amendments to the Stockholm Convention in 2011. In 2013, Norway submitted a proposal to add decaBDE to the Stockholm Convention. The proposal is currently being evaluated and the substance could be considered for addition to the Convention as early as 2017.

2.4 Background and context for PFOS

PFOS was primarily used as a surfactant in fume suppressants and aqueous film-forming foam. PFOS releases are currently managed under the *Perfluorooctane Sulfonate and its Salts and Certain Other Compounds Regulations* (the PFOS Regulations) (see footnote 20) following the completion of the final screening assessment, which concluded that PFOS meets the criterion under paragraph 64(a) of CEPA as it is or may be entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity. (see footnote 21) The assessment also concluded that PFOS is persistent, and the weight of evidence is also sufficient to conclude that PFOS substances are bioaccumulative. PFOS was therefore added to the List of Toxic Substances in Schedule 1 of CEPA in 2006.

2.4.1 Historical and current uses

Historically, PFOS was also used in a wide variety of surface treatments for textiles, upholstery, leather, carpet and packaging to affect water, oil, soil and grease repellent properties. Potential ongoing uses of PFOS include aviation hydraulic fluids, photographic films, papers and printing plates, and photolithography applications (semi-conductor manufacturing).

2.4.2 Release profile

Releases of PFOS into the environment may occur during the manufacture, processing, transportation, use, improper handling, improper storage or containment and disposal of PFOS or products containing it.

2.4.3 Current federal risk management

The PFOS Regulations, which were developed under CEPA, came into force on May 29, 2008. They prohibit the manufacture, use, sale, offer for sale, or import of PFOS and products containing PFOS, with a number of exemptions. These exemptions include the use of PFOS in aviation hydraulic fluids, photographic films, papers and printing plates and photolithography applications (semi-conductor manufacturing).

2.4.4 Risk management activities in other jurisdictions

United States

The U.S. EPA has two SNURs regulating 271 PFOS-related chemicals. These SNURs require manufacturers and importers of PFOS to notify the U.S. EPA at least 90 days before the manufacture or import of these substances for any use other than certain specific, ongoing uses, which include aviation hydraulic fluids, photographic films, papers and printing plates, and certain applications in photolithography processes (semi-conductor manufacturing).

Other countries

The European Commission has published Regulation No. 757/2010, which prohibits the manufacture and use of PFOS with certain exemptions, including aviation hydraulic fluids, photographic films, papers and printing plates and specific applications in photolithography processes (semi-conductor manufacturing).

In Australia, industry has initiated a voluntary phase-out action since 2000. The action is motivated by four alerts concerning PFOS published on the National Industrial Chemicals Notification and Assessment Scheme.

International organizations

PFOS was added to both the Stockholm Convention and the Protocol on Persistent Organic Pollutants to the Convention on Long-range Transboundary Air Pollution in 2009, with a number of exemptions. In spite of these exemptions, parties using PFOS are encouraged to phase out the substance in the exempted uses.

3. Objectives

The objectives of the amendments are to

- protect the Canadian environment from risks associated with the manufacture, use, sale, offer for sale or import of HBCD, PFOA, LC-PFCAs, PBDEs and PFOS;
- streamline regulations under CEPA pertaining to the control of toxic substances and further restrict existing regulatory controls for PBDEs and PFOS; and
- address comments received from the SJCSR on the Prohibition Regulations, 2012 as well as other housekeeping changes to improve clarity of the regulatory text.

4. Description

HBCD

The amendments prohibit the manufacture, use, sale, offer for sale or import of HBCD and EPS and XPS foams and their intermediary products that contain HBCD for use in a building or construction application. The amendments come into force on January 1, 2017 and allow

- the use, sale, offer for sale or import of all other products that contain HBCD;
- the use, sale or offer for sale of HBCD that was manufactured or imported before the coming into force of the amendments; and
- the use, sale or offer for sale of EPS and XPS foams and their intermediary products, that contain HBCD, for use in a building or construction application that were manufactured or imported before the coming into force of the amendments.

The amendments do not make permits available for manufacturers and importers of HBCD and EPS and XPS foams and their intermediary products that contain HBCD for use in a building or construction application to continue any activities which are prohibited upon the coming into force of the amendments.

PFOA and LC-PFCAs

The amendments prohibit the manufacture, use, sale, offer for sale or import of PFOA and LC-PFCAs and products containing these substances with a limited number of exemptions to the prohibitions. The amendments allow

- the use, sale, offer for sale or import of manufactured items containing PFOA or LC-PFCAs;
- the use, sale, offer for sale and import of these substances in aqueous film-forming foams used in firefighting applications;
- the manufacture, use, sale, offer for sale or import of water-based inks and photo media coatings containing PFOA and LC-PFCAs, until December 31, 2016;
- the use, sale or offer for sale of PFOA and LC-PFCAs and products containing these substances that were either manufactured or imported before the coming into force of the amendments or the end of the temporary exemption period, as applicable; and
- the use or import of products containing PFOA and LC-PFCAs if intended for personal use.

The amendments allow manufacturers and importers of PFOA and LC-PFCAs and products containing these substances to apply for a permit to continue their activities after the coming into force of the amendments or after expiry of a temporary exemption. Permits are valid for one year and can potentially be renewed twice allowing manufacturers and importers to continue their activities for an additional three years.

PBDEs (including decaBDE)

The amendments prohibit PBDEs unless contained in a manufactured item. This maintains the prohibition on the manufacture of PBDEs as specified under the PBDEs Regulations. In addition, the amendments extend the existing prohibition on the use, sale, offer for sale or import to include decaBDE. As a result, the manufacture, use, sale, offer for sale or import of the DecaBDE commercial mixture is prohibited. The amendments also expand the scope of the existing prohibition on products, which covers three product types (resins, polymers and mixtures), to include all products that contain PBDEs, except for manufactured items.

The amendments allow the use, sale, or offer for sale of decaBDE and products containing this substance that were either manufactured in or imported into Canada before the coming into force of the amendments.

The amendments allow existing manufacturers or importers of decaBDE and products that contain the substance to apply for a permit to continue their activities after the coming into force of the amendments. Permits are valid for one year and can potentially be renewed twice allowing manufacturers and importers to continue their activities for an additional three years.

The amendments also repeal the PBDEs Regulations, since there is no longer a need for separate regulations for these substances. The repealing of the PBDEs Regulations also requires a consequential amendment to the *Regulations Designating Regulatory Provisions for Purposes of Enforcement* under CEPA (the Designation Regulations), by repealing the PBDEs Regulations from the Schedule of the Designation Regulations.

PFOS

The amendments maintain the prohibition on PFOS and products containing PFOS as specified in the PFOS Regulations. However, the amendments modify three exemptions:

- remove the current exemption for the use, sale, offer for sale or import of aviation hydraulic fluids containing PFOS;
- remove the current exemption for aqueous filmforming foams containing PFOS used in a military vessel deployed before May 2013 for a military operation; and
- modify the permitted concentration limit for the use of PFOS in aqueous film-forming foams by increasing the limit from 0.5 ppm to 10 ppm.

The removal and modification of current exemptions are based on consultations with stakeholders, who have indicated that the activities associated with the two exemptions no longer occur, and that the concentration limit needs to be updated.

The amendments also repeal the PFOS Regulations. However, the amendments include provisions to ensure that the record-keeping requirements in Section 11 of the PFOS Regulations continue to apply. The repealing of the PFOS Regulations also requires a consequential amendment to the Designation Regulations, by repealing the PFOS Regulations from the Schedule of the Designation Regulations.

Laboratory use

The amendments allow the use of HBCD, PFOA, LC-PFCAs, PBDEs, and PFOS in a laboratory for analysis, in scientific research or as a laboratory analytical standard. Intended laboratory use of these substances requires annual reporting in respect of each substance.

Housekeeping changes

The amendments include housekeeping changes to the Prohibition Regulations, 2012 regarding the accredited laboratory and record-keeping provisions, by updating references in section 13 to include laboratories that are accredited under Quebec's *Environment Quality Act* (C.Q.L.R., c. Q-2), and by adding a new subsection 15(3) that requires regulatees to notify the Minister if records are moved.

The amendments also include housekeeping changes recommended by the SJCSR to improve the clarity and consistency of the regulatory text. These include minor editorial changes to subsection 3(2) and subsection 10(3) and the addition of a new subsection 10(4).

The amendments also include changes to the information required in an application for a permit or an application for renewal of a permit (Schedule 4). These changes are aimed at simplifying the application process.

5. "One-for-One" Rule

The "One-for-One" Rule applies to the amendments, as there are incremental administrative costs ("INs") to business. Under the Regulations, there is a reporting requirement for laboratories which uses more than 10 g of any of the toxic substances listed under the Regulations for use for analysis, in scientific research or as a laboratory analytical standard. It is estimated that 10 laboratories will be affected and bear administrative costs. The 10 laboratories need to learn about the administrative requirements, and are required to submit annual reports and keep these reports for record-keeping purposes.

Following Treasury Board Secretariat's guidance on standard costing and using a 7% discount rate and 2012 dollars, it is estimated that overall, the total annualized administrative costs over a 10-year time frame is approximately $1,100 for all stakeholders (or $110 per stakeholder). (see footnote 22)

The assumptions used for the "One-for-One" Rule calculations are detailed below:

- learning about the administrative requirements (10 stakeholders x 1 time x 1 hour x $46 per hour); and
- submit annual reports (10 stakeholders x once per year x [3 hours per year x $32 per hour + 1 hour per year x $46 per hour]);

The repeal of the PFOS Regulations and the PBDEs Regulations also results in an "OUT" of two titles under the Rule, and it is not expected to have any impact on the administrative burden of the regulated community, as the amendments maintain the same administrative requirements. The removal of certain exemptions for PFOS does not affect the administrative burden on regulatees, as the associated activities no longer occur.

6. Small business lens

The small business lens does not apply to the amendments since the cost impact of the amendments is below $1,000,000 annually, and the cost impact per small business is negligible and is not considered disproportionate.

The 10 laboratories mentioned above in the "'One-for-One' Rule" section are considered small businesses, as the number of employees per laboratory is below 100. All small businesses are expected to learn about the administrative requirements and are required to submit annual reports. Since the cost per small business is expected to be minimal, as discussed above, and since the reporting cost on laboratories is not disproportionate, the small business lens is not triggered.

7. Consultation

7.1 Comments received prior to publication in the *Canada Gazette*, Part I

HBCD

In October 2012, the Department published a consultation document regarding the addition of HBCD to the Prohibition Regulations, 2012, with a 60-day public comment period to solicit comments. (see footnote 23) Stakeholders were generally supportive of the proposed amendments. The proposed temporary permitted use of EPS and XPS foams that contain HBCD and are used for building or construction applications was expected to allow stakeholders adequate time to phase out HBCD use and transition to alternatives while still managing potential environmental risks.

Through consultations, the automotive sector provided information on the progress it had made to phase out products that contain HBCD. This sector now represents less than 1% of HBCD use in Canada and the substance is being phased out globally in automotive applications. The risk management measures included in

the consultation document proposed a time-limited regulatory exemption on the use of HBCD within the automotive sector. The sector expressed concern regarding its ability to fully phase out products that contain HBCD in the near-term due to the complexity of its operations. The Department has acknowledged these concerns and will address the use of products that contain HBCD in the automotive sector through non-regulatory measures to work towards achieving a full phase out. This approach allows the sector the flexibility required to support its competitiveness in an integrated North American automotive manufacturing industry. Given that the manufacture, use, sale, offer for sale or import of all products that contain HBCD, except for EPS and XPS foams and their intermediary products for use in a building or construction application is allowed, the automotive sector will not be impacted by these amendments.

Additional outreach was conducted in February 2015 with EPS and XPS foam insulation supply chain stakeholders. Information gathered during this outreach confirmed progress that the EPS and XPS foam insulation sector had made in the transition to alternative substances and the potential impacts of the proposed amendments on industry and Canadian consumers.

PFOA and LC-PFCAs

In January 2014, the Department published a consultation document regarding the addition of PFOA and LC-PFCAs to the Prohibition Regulations, 2012, with a 30-day public comment period to solicit comments. (see footnote 24) In general, stakeholders were supportive of the proposed addition. Moreover, the majority of international manufacturers and domestic importers have indicated that they expected to have completed the phase-out of these substances before the coming into force of the proposed amendments. For certain uses, stakeholders provided evidence that the transition to alternative substances required additional time, and this was accommodated in the temporary exemptions and permitted uses.

In the case of the automotive sector, PFOA and LC-PFCA substances may be present in vehicle parts. Consequently, stakeholders from this sector indicated that they were supportive of the proposed exclusion of manufactured items from the prohibition. The sector also noted that it does not use these substances in domestic manufacturing operations, as pure chemicals or in mixtures, but highlighted the constraints on data for products used within the sector to confirm this definitively. However, the FluoroCouncil members who manufacture PFOA and LC-PFCAs and sell to producers of paints, sealants, coatings, etc., have indicated that they will have transitioned to alternatives prior to the coming into force of the amendments. Thus, the automotive supply chain is no longer expected to have products containing these substances. Given the exclusion of manufactured items, and the global phase out of PFOA and LC-PFCAs, impacts to the automotive sector are not expected as a result of the addition of these substances to the Prohibition Regulations, 2012.

PBDEs (including decaBDE)

In February 2013, the Department published a consultation document regarding the proposal to align substance-based controls for all PBDEs assessed under CEPA, with a 60-day public comment period to solicit comments. (see footnote 25) In general, the regulated community was supportive of the proposed addition. Moreover, primary industries indicated that they have already phased out the use of the DecaBDE commercial mixture in their operations, and are now working with the suppliers to phase out materials containing the DecaBDE commercial mixture in parts and products.

PFOS

In January 2013, the Department published a consultation document with a 60-day public comment period to solicit comments on removing the ongoing exemptions under the PFOS Regulations. (see footnote 26) Comments received indicated that two of these exemptions could be removed, as the associated activities no longer occur, and one exemption should be modified taking into consideration new information. In response, the amendments remove these two exemptions and modify the other exemption.

7.2 Comments received since publication in the *Canada Gazette*, Part I

The proposed amendments were published on April 4, 2015, in the *Canada Gazette*, Part I, for a 75-day public comment period. Approximately 20 written submissions were received on the proposed amendments from industry, non-governmental organizations and private citizens. Comments ranged from general in nature to specific comments on substances. A summary of the comments received is presented below with the

Department responses.

Scope of prohibition/exemptions

Comment: A number of stakeholders submitted comments supporting the proposed regulatory approach for HBCD, PFOA, LC-PFCAs, PBDEs and PFOS; however, many stakeholders also questioned the need for the exemptions outlined in the proposed amendments.

Response: The risk management objective for HBCD, PFOA, LC-PFCAs, PBDEs and PFOS is to achieve the lowest level of releases into the Canadian environment which is technically or economically feasible. Based on feedback from stakeholders, alternatives to HBCD, PFOA, LC-PFCAs, PBDEs and PFOS are available in many but not all applications. Thus the amendments have included exemptions that reflect this information. Even though the amendments include exemptions, it is important to note that the Government of Canada often takes a phased approach to the risk management of toxic substances. For example, earlier actions have been taken to risk manage PFOA, LC-PFCAs, PBDEs and PFOS; therefore, the amendments represent the next phase in the risk management of these substances. The Department also considered current global action in the determination of the domestic risk management measures, such as those under the Stockholm Convention. In addition, the monitoring of these substances is occurring under a comprehensive monitoring and surveillance strategy under the Chemicals Management Plan. This monitoring will be used to help inform further restrictions, as warranted.

Record keeping

Comment: Two stakeholders stated that they were not supportive of the proposed provisions requiring regulatees to notify the Minister within 30 days if records are moved.

Response: These provisions have been added to improve enforceability of the Regulations. Under the Regulations, every person that submits information to the Minister must keep a record containing a copy of that information, a copy of the certification and any documents supporting the information, including test data, if applicable, for a period of at least 5 years from the date of submission of the information. If records are moved, the amendments require regulatees to notify the Minister in writing, of the civic address of the new location, within 30 days after the day of the move. Records must be kept at the principal place of business in Canada or, on notification to the Minister, at any place in Canada where records can be inspected. It is important for the Department to have up-to-date information on the location of records to undertake enforcement activities, such as inspections of records, when verifying compliance with the Regulations. This change is also consistent with the provisions of other regulations under CEPA, such as the *Products Containing Mercury Regulations* and the *Ozone-depleting Substances Regulations, 1998*.

Service standards

Comment: One stakeholder suggested that the Department establish a 30-day service standard for delivering a permit following submission of an application.

Response: The Department understands the importance of providing a reliable and prompt service. The existing permit application processes have been evaluated and, as per the current process for the Prohibition Regulations, 2012, the Department will endeavor to respond to permit applications within 60 working days or less. Permit applications are assessed to determine whether the conditions of issuance outlined in Section 10 of the Prohibition Regulations, 2012 have been met. If the information provided in the application is complete, then the Department can undertake this assessment more rapidly. However, if the application is incomplete, then the Department will require additional time to undertake the assessment. The Department has guidance materials which are intended to assist regulatees when preparing their applications.

Clarification of the regulatory provisions

Comment: Some stakeholders stated that the proposed amendments were complex and suggested that the provisions be simplified.

Response: Where possible, modifications have been made to improve clarity of the regulatory provisions. For example, the provisions for HBCD have been modified to align with the existing provisions of the Prohibition Regulations, 2012. In addition, titles have been added to the schedules in order to clarify the linkages between

schedules and regulatory provisions.

The Department will publish guidance materials to support regulatees awareness and understanding of their obligations.

Chemical Abstracts Service Registry Numbers (see footnote 27)

Comment: Two stakeholders requested that the Department identify the Chemical Abstracts Service Registry Number (CAS RN) for each substance covered by the amendments. Furthermore, some stakeholders stated that there was a lack of information on which products would be covered by the proposed amendments.

Response: The Department provided, to known stakeholders, guidance materials on the proposed amendments when they were published in the *Canada Gazette*, Part I, including a fact sheet describing the proposed regulatory provisions and the products covered by the proposed provisions, and non-exhaustive lists of applicable CAS RNs for HBCD, PFOA, LC-PFCAs, PBDEs and PFOS. These non-exhaustive lists represent a consolidation of CAS RNs that have been identified in a variety of Government of Canada sources and are intended to assist stakeholders with understanding the applicability of the Prohibition Regulations, 2012. Exhaustive CAS RNs lists are not available given the numerous daily additions to the Registry, which make it difficult to track and update. The Department will publish, on the CEPA Registry, updated versions of these materials as part of an information package associated with the publication of the final Regulations in the *Canada Gazette*, Part II, and circulate these materials to known stakeholders.

Stockpiling / End-of-life management

Comment: One stakeholder asked whether the amendments would allow for stockpiling of HBCD.

Response: The amendments allow for the use, sale and offer for sale of HBCD, and EPS and XPS foam and their intermediary products that contain HBCD, for use in building and construction applications, which were manufactured or imported before the coming-into-force date.

Comment: Two stakeholders stated that the Regulations should ensure proper disposal and recycling of HBCD, PFOA, LC-PFCAs, PBDEs and PFOS.

Response: The Prohibition Regulations (2012) is a multi-substance risk management instrument that is intended to prevent releases of toxic substances and products containing them that could occur during their manufacture, use, sale, offer for sale or import. As a result, these Regulations do not apply to end-of-life disposal. As part of a broader approach to environmental protection, the Government of Canada is strengthening its capacity to manage end-of-life risks with respect to various substances, as well as on the presence and potential releases of toxic substances, and other substances of concern, in waste management facilities in Canada.

Export

Comment: Two stakeholders stated that the Regulations should prohibit the export of HBCD, PFOA, LC-PFCAs, PBDEs and PFOS and products containing these substances.

Response: Regulatory export controls for chemical substances are established by adding a substance to Schedule 3 of the CEPA (i.e. the Export Control List), which makes the export subject to the *Export of Substances on the Export Control List Regulations*, which is the Government of Canada's instrument for export controls. The establishment of regulatory export controls is considered on a case-by-case basis for substances subject to domestic prohibitions or severe restrictions on their use, or substances added to the Rotterdam and/or Stockholm Conventions. Where the substance is known to exist in Canada, regulatory export controls are often necessary to ensure compliance with our international obligations under these treaties. In some cases, no export of a certain chemical is possible because its use has been prohibited in Canada along with manufacture and import, and no stockpiles remain. In these cases, regulatory export controls may not be necessary.

Cost benefit analysis

Comment: One stakeholder asked how the proposed amendments would impact Canadian companies that

compete with foreign supplies domestically and internationally.

Response: Given that the import and manufacture of the substances are prohibited across Canada, domestic competitiveness is not expected to be impacted based on the amendments. As indicated in the impact analysis in section 8, the cost of the amendments is estimated to be low, and the impact on stakeholders is not expected to be significant.

Comment: One stakeholder suggested that the costs associated with transitioning away from HBCD should not be identified as "minimal." Also, the stakeholder commented that the assumption that HBCD alternatives would be widely available at the beginning of 2015 is not accurate.

Response: The Department recognizes that there is significant cost to carry out research, develop alternatives and reformulate products using an alternative. However, for the purposes of this analysis, only costs which are incremental to the proposed amendments were captured. The impact analysis had identified the cost as "minimal" in the proposed amendments based on the feedback and information available at the time. The impact analysis in section 8 has been updated to reflect comments received from stakeholders on the proposal. Based on publicly available information, the Department understands that beginning in 2015, the main alternative to HBCD in EPS and XPS applications became more widely available globally as a result of global action to phase out HBCD and as chemical manufacturers initiated production or increased production volumes of the alternative. For applications in which HBCD is still used within the scope of the amendments, the analysis assumes that stakeholders would switch to an alternative before January 1, 2017.

8. Benefits and costs

While no quantitative analysis of benefits has been conducted, the amendments will protect the environment by prohibiting the manufacture, use, sale, offer for sale or import of HBCD, PFOA, LC-PFCAs, PBDEs and PFOS. An improvement in environmental quality is expected from controlling these substances.

The amendments also impose costs on industry stakeholders and the federal government. It is estimated that industry and the federal government will bear total costs of approximately $2.4 million in present value (2012 Canadian dollars) due to industry administrative activities ($13,000), industry compliance with the HBCD regulatory requirements ($2.0 million), and government enforcement and compliance promotion activities ($0.4 million) associated with the amendments. (see footnote 28)

8.1 Impacts on industry and the environment

HBCD

The substance HBCD has demonstrated ecotoxicity in both aquatic and terrestrial species. While most HBCD will be sequestered in landfills, a certain amount of the substance can be released into the environment during the manufacture and use of products containing HBCD. In addition, HBCD has the potential to migrate out of products. The amendments thus protect the Canadian environment by controlling HBCD.

Moreover, an alternative substance to HBCD is now commercially available and has been demonstrated to be as effective as HBCD, but less environmentally harmful. Given that limited monitoring data is currently available, it is challenging to accurately estimate the environmental benefits resulting from the amendments. However, it is expected that the amendments will result in an improvement in environmental quality by contributing to a reduction of HBCD use and ultimately its release to the environment over time.

Based on comments received from a stakeholder after the publication of the proposed amendments in the *Canada Gazette*, Part I, the data and analysis have been revaluated.

Certain manufacturers will replace HBCD with an alternative substance, as the amendments prohibit the use of HBCD. Consequently, certain manufacturers could face upfront capital investment and an ongoing increase in costs as a result of using an alternative that is more expensive than HBCD. Consultations and the study (see footnote 6) have confirmed that most manufacturers of XPS foam and EPS resin have already begun the evaluation process of, and transition to, an alternative to HBCD. As well, the Department expects that the use of HBCD will have been phased out in most applications prior to the end of 2016. While the Department recognizes that significant costs have already been incurred, as well as an ongoing increase in costs as a result of using an alternative, given that most manufacturers have already transitioned away from HBCD, these costs

are not captured in the analysis as incremental to the amendments. For the purposes of the analysis, significant incremental impacts as a result of the amendments are not anticipated. Based on the study, it is estimated that the costs of compliance over 10 years would be approximately $2.0 million in present value (or $240,000 annually), since alternatives could be more expensive per kilogram and more of it would be required to achieve the same performance, new equipment would need to be purchased for production, and new products would need to be tested with the alternative.

Even though the manufacturers of EPS and XPS foams for use in a building or construction application will be using a more expensive flame retardant, it is expected that the potential impacts on consumers will be negligible to very small. Canadian companies are estimating that the switch to alternatives could increase the cost of these insulation products by approximately 0.5% to 2.0%.

PFOA and LC-PFCAs

The scientific evidence has demonstrated that the substance PFOA and its salts and the substances LC-PFCAs and their salts are persistent and that they accumulate and biomagnify in terrestrial and marine animals. The ongoing release of PFOA and LC-PFCAs may result in harm to the Canadian environment.

The amendments protect the Canadian environment by preventing the reintroduction of PFOA and LC-PFCAs as industry is already working towards phasing out these substances.

The amendments are expected to have a low cost impact on industry. The substances are not currently manufactured in Canada and are only known to be imported. Furthermore, industry sectors have already completed the transition to alternatives, or are expected to do so prior to the coming into force of the amendments. Development of alternatives to PFOA and LC-PFCAs in water-based inks and photo media coatings is underway, and companies expect to eliminate their use of these substances by the end of 2016, when the temporary exemption would expire. For aqueous film-forming foams containing PFOA and LC-PFCAs, which would be allowed under the amendments, the development of alternatives has begun and will be monitored.

PBDEs (including decaBDE)

The amendments prohibit all PBDEs unless contained in a manufactured item. The amendments maintain the prohibition on the manufacture of all PBDEs as specified under the PBDEs Regulations. In addition, the amendments extend the existing prohibition on the use, sale, offer for sale or import to include decaBDE. As a result, the manufacture, use, sale, offer for sale or import of the DecaBDE commercial mixture is prohibited. The amendments also increase the scope of the existing prohibition as specified under the PBDEs Regulations by prohibiting all products that contain PBDEs, except for manufactured items. The cost impact on industry is expected to be minimal, as currently, there are no known Canadian users or importers of the DecaBDE commercial mixture. In addition, the use of decaBDE in products, which are not manufactured items (e.g. adhesives, sealant, caulking), has been phased out.

The three main manufacturers of the DecaBDE commercial mixture operating in the United States made a commitment to the U.S. EPA to cease production and sales by the end of 2013 to comply with the SNUR. In mid-2012, these same companies also voluntarily ceased their export of the DecaBDE commercial mixture into Canada.

Since the amendments allow for the use, sale and offer for sale of decaBDE and products that contain the substance which were manufactured or imported before the coming-into-force date, potential releases to the environment will decrease over time as the remaining stocks are depleted.

PFOS

The amendments maintain the same regulatory requirements as those specified under the PFOS Regulations, with the exception of two exemptions that have been removed, as associated activities no longer occur, and one exemption that has been modified to take into consideration new information. Therefore, the amendments protect the Canadian environment by preventing the potential reintroduction of PFOS from these uses. The overall cost impact on industry is expected to be negligible, since PFOS is already a controlled substance.

While activities associated with PFOS are prohibited with some exemptions in Canada, recent consultation with

stakeholders has demonstrated that these exemptions are no longer required in Canada, as the industry has moved to different formulations. Therefore, these exemptions can be removed without negatively impacting Canadian stakeholders.

8.2 Impacts on the Government of Canada

The federal government would incur total costs over 10 years of approximately $383,000 in present value. These costs would be incurred for compliance promotion, including the distribution of guidance materials ($88,000) and enforcement of the provisions of the amendments ($295,000).

Compliance promotion

Compliance promotion activities are intended to encourage the regulated community to achieve compliance. Compliance promotion costs include distributing the final regulations, developing and distributing promotional materials (such as a fact sheet and Web material) and attending association conferences. This cost over 10 years is about $88,000 in present value.

Enforcement

Government of Canada enforcement activities are intended to ensure compliance with the amendments. The present value of enforcement costs for 10 years is about $295,000, which includes inspections, investigations, measures to deal with alleged violations and prosecutions.

8.3 Other impacts

The amendments make minor housekeeping changes to the Prohibition Regulations, 2012, including updating the accredited laboratories references in the regulatory text, adding a deadline for the notification of a change of civic address, simplifying the permit application process and improving the clarity and consistency of the regulatory text between the English and the French versions, which benefit the Government and stakeholders. The amendments also consolidate regulations that pertain to the control of toxic substances.

The amendments also impose an administrative burden on industry, as stakeholders need to learn about the administrative requirements. Furthermore, 10 laboratories that use these substances in quantities above 10 g will be required to submit an annual report. The total administrative costs for 10 years are estimated to be approximately $13,000 in present value (or $1,500 annually).

9. Rationale

Amendments regarding HBCD, PFOA, LC-PFCAs, PBDEs and PFOS

Scientific assessments conducted by the Government of Canada have concluded that HBCD, PFOA, LC-PFCAs, PBDEs and PFOS have or may have an immediate or long-term harmful effect on the environment or its biological diversity. (see footnote 29) Therefore, these substances are toxic to the environment under CEPA. The assessments also concluded that they are persistent and bioaccumulative. The amendments, which control HBCD, PFOA, LC-PFCAs, PBDEs and PFOS, are therefore the most appropriate course of action to respond to the risks to the environment posed by these substances.

The amendments add HBCD, PFOA, LC-PFCAs, PBDEs and PFOS to the Prohibition Regulations, 2012, and repeal the PBDEs Regulations and the PFOS Regulations, to consolidate similar prohibitions under a single regulatory title, and provide added consistency in how these toxic substances are controlled under CEPA. The amendments prohibit HBCD, PFOA, LC-PFCAs, PBDEs and PFOS with certain exemptions to allow on-going and time-limited uses of these substances where technically or economically feasible alternatives do not exist or to allow sufficient time for the transition to alternatives to occur. The amendments also incorporate recommendations from the SJCSR aimed at improving the clarity and consistency of the regulatory text.

The amendments were developed based on consultation with stakeholders, and modifications have been made to address concerns raised following publication of the proposed amendments in the *Canada Gazette*, Part I.

The amendments impose costs on industry stakeholders and the federal government. It is estimated that industry and the federal government will bear total costs of approximately $2.4 million in present value (2012

Canadian dollars) due to industry administrative activities ($13,000), industry compliance with the HBCD regulatory requirements ($2.0 million) and government enforcement and compliance promotion activities ($0.4 million). Notwithstanding these costs, given the associated reduction in risk to the environment, posed by these toxic, persistent and bioaccumulative substances, the amendments are expected to result in an overall benefit to Canadians.

Strategic environmental assessment

This regulatory initiative has been developed as part of Canada's CMP. The CMP is a Government of Canada initiative aimed at reducing the risks posed by certain chemicals to Canadians and their environment. The CMP builds on previous initiatives by assessing chemicals used in Canada and by taking action on chemicals found to be harmful. As the amendments place controls on chemicals found to be harmful, this regulatory initiative is aligned with the objective of the CMP.

In accordance with the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals, a Strategic Environmental Assessment (SEA) was completed for the CMP which includes this regulatory initiative. (see footnote 30)

10. Implementation, enforcement and service standards

Implementation

The amendments come into force three months after they are registered. The compliance promotion approach for the amendments will be similar to that taken for the Prohibition Regulations, 2012, which includes maintaining a database of stakeholders, maintaining a page on the CEPA Environmental Registry Web site for the Prohibition Regulations, 2012, providing guidance materials and responding to inquiries from stakeholders. In addition, promotional materials (such as fact sheets and Web materials) are under development and may be distributed. The Department will undertake outreach activities to raise potential industry stakeholder awareness of the prohibition and associated requirements.

The coordination and implementation of compliance promotion activities will be completed through the Prohibition of Certain Toxic Substances Regulations Working Group, which is composed of the Department officials from headquarters and regional offices. The Department will consider opportunities for compliance promotion coordination with respect to other CEPA regulations that may have similar regulated activities or parties or compliance promotion approaches.

Enforcement

The Regulations are made under CEPA; therefore, enforcement officers will, when verifying compliance with the Regulations, apply the Compliance and Enforcement Policy for CEPA. (see footnote 31)

Service standards

The amendments include provisions for regulatees to request permits from the Minister of the Environment. The applications for permits will be reviewed by the Department. The administrative procedure may take up to 60 working days. The Department will make every effort to respond quickly to permit applications.

11. Contacts

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Footnote a
S.C. 2004, c. 15, s. 31

Footnote b
S.C. 1999, c. 33

Footnote c
S.C. 2015, c. 3, s. 172(d)

Footnote d
S.C. 1999, c. 33

Footnote 1
SOR/2012-285

Footnote 2
SOR/2012-134

Footnote 3
SOR/2008-178

Footnote 4
SOR/2008-218

Footnote 5
Unless stated elsewhere, the abbreviation PFOS will be used to collectively refer to perfluorooctane sulfonate, its salts and compounds that contain one of the following groups: C8F17SO2, C8F17SO3 or C8F17SO2N.

Footnote 6
The screening assessments can be found at http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=0DA2924D-1&wsdoc=4ABEFFC8-5BEC-B57A-F4BF-11069545E434.

Footnote 7
Information on the SJCSR can be found at http://www.parl.gc.ca/MarleauMontpetit/DocumentViewer.aspx?Lang=E&Sec=Ch17&Seq=3.

Footnote 8
The assessment can be found at http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=7882C148-1.

Footnote 9
The ability of a chemical or physical agent to have an adverse effect on the environment and the organisms living in it, such as fish, wildlife, insects, plants and micro-organisms.

Footnote 10
Cheminfo Services Inc., Update on the Use of Hexabromocyclododecane in Canada and Emerging Substitutes to Its Use, March 2013.

Footnote 11
Class I Specified Chemical Substances are defined as those that are persistent, highly bioaccumulative, have long-term toxicity for humans or long-term toxicity for predator animals at higher trophic levels (http://www.cirs-reach.com/Japan_CSCL/Japan_CSCL.pdf).

Footnote 12
In this instance, PFCAs refer to perfluorocarboxylic acids. The focus of the Action Plan is long-chain PFCAs. This definition does not include associated salts or precursors.

Footnote 13
This review can be found at http://www.epa.gov/oppt/pfoa/pubs/altnewchems.html.

Footnote 14
The Candidate List of Substances can be found at http://echa.europa.eu/web/guest/regulations/reach/authorisation/thecandidate-list.

Footnote 15

A summary of these obligations can be found at https://echa.europa.eu/candidate-list-obligations.

Footnote 16
Note that decaBDE refers to the congener and DecaBDE refers to the commercial mixture.

Footnote 17
The Regulations can be found at http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=108.

Footnote 18
The assessment can be found at http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=0DDA2F24-1.

Footnote 19
The report can be found at http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=B901A9EB.

Footnote 20
The Regulations can be found at http://www.ec.gc.ca/lcpe-cepa/eng/regulations/DetailReg.cfm?intReg=107.

Footnote 21
The assessment can be found at http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=98B1954A-1&offset=3&toc=show.

Footnote 22
The non-rounded increase in annualized average administrative burden costs was estimated to be $1,051, or $105 per business.

Footnote 23
The consultation document can be found at http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=6668F8BC-1.

Footnote 24
The consultation document can be found at http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=2A11BA77-1.

Footnote 25
The consultation document can be found at http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=92B7DD05-1.

Footnote 26
The consultation document can be found at http://www.ec.gc.ca/toxiques-toxics/default.asp?lang=En&n=96A225B1-1.

Footnote 27
CAS RN: Chemical Abstracts Service Registry Number. The Chemical Abstracts Service information is the property of the American Chemical Society and any use or redistribution, except as required in supporting regulatory requirements and/or for reports to the Government of Canada when the information and the reports are required by law or administrative policy, is not permitted without the prior, written permission of the American Chemical Society.

Footnote 28
A 3% discount rate over a 10-year study period (from 2014 to 2023) was used for the analysis.

Footnote 29
The screening assessment reports are peer-reviewed. For further details, please refer to the screening assessments.

Footnote 30
Please refer to the public statement for the CMP available at http://www.chemicalsubstanceschimiques.gc.ca/plan/sea-ees-eng.php.

Footnote 31
A copy of the Policy may be obtained from the following Web site: http://www.ec.gc.ca/LCPE-CEPA/default.asp?lang=En&n=5082BFBE-1.

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