



Government
of Canada

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**Certain Organic Flame Retardants Grouping
Risk Management Approach**

For

**Benzene, 1,1'-(1,2-ethanediyl)bis [2,3,4,5,6-
pentabromo-**

Decabromodiphenyl ethane (DBDPE)

**Chemical Abstracts Service Registry Number
(CAS RN): 84852-53-9**

Environment and Climate Change Canada

Health Canada

May 2019

Summary of Proposed Risk Management

This document outlines the proposed risk management actions for benzene, 1,1'-(1,2-ethanediyl)bis[2,3,4,5,6-pentabromo-, commonly known as decabromodiphenyl ethane (DBDPE), which has been found to be harmful to the environment.

As described in *Consultation document on proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2012 for certain PFASs, HBCD, PBDEs, DP and DBDPE* (Canada 2018a), the Government of Canada is proposing measures to manage anthropogenic releases of DBDPE from all industrial sectors and activities by amending the *Prohibition of Certain Toxic Substances Regulations, 2012*, to prohibit the manufacture, import, use, sale and offer for sale of DBDPE, as well as products and manufactured items containing it.

Moreover, because certain data gaps remain, the following information is requested (ideally on or before June 9, 2019), to the contact details identified in section 8 of this document, to further inform risk management decision-making:

Activity	Information Needs
Import, use, sale, and/or offer for sale of DBDPE or a product containing it for use in applications including: <ul style="list-style-type: none"> - Adhesives and sealants; - Automotive, aircraft and transportation; - Basic organic chemical manufacturing; - Electronical and electronic equipment; - Plastic and rubber materials, 	<ul style="list-style-type: none"> • Description of the specific application, including the quantity and concentration of DBDPE. • Known alternatives to DBDPE in the application. • Achievable timeline for your company to complete a phase out, explaining significant challenges, cost estimates and efficiency or suitability of alternatives.
Import or use of manufactured items, including parts, which contain any of the substances.	<ul style="list-style-type: none"> • Name and description of the manufactured items imported or used. • Quantities of manufactured items imported or used annually (with unit of measurement). • Concentration of DBDPE (with unit of measurement).

	<ul style="list-style-type: none"> • Known alternatives to DBDPE in these manufactured items. • Achievable timeline for your company to complete a phase-out, explaining significant challenges, cost estimates, and efficiency or suitability of alternatives.
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The Certain Organic Flame Retardants Substance Grouping:

DBDPE is one of seven substances in the first subset of the Certain Organic Flame Retardants Substance Grouping of the Substance Groupings Initiative of the CMP.

In addition to DBDPE, one other substance in this subset, Dechlorane Plus, has been concluded to meet criteria for toxicity set out in section 64 of the *Canadian Environmental Protection Act (CEPA)*.

Three substances in this subset, benzene, 1,3,5-tribromo-2-(2-propenyloxy)-, (2,4,6-tribromophenyl allyl ether) (ATE), 1,2-benzenedicarboxylic acid, 3,4,5,6-tetrabromo-bis(2-ethylhexyl) ester (TBPH) and Benzoic acid, 2,3,4,5-tetrabromo-, 2-ethylhexyl ester (TBB), are not listed on the Domestic Substances List and are therefore subject to the *New Substances Notification Regulations (Chemicals and Polymers)* whereby importing or manufacturing these substances may be subject to pre-market notification and appropriate risk management measures, where applicable.

The two remaining substances in this subset, Phosphoric acid, tris(methylphenyl) ester (TCP), and 1H-isoindole-1,3(2H)-dione, 2,2'-(1,2-ethanediyl)bis[4,5,6,7-tetrabromo- (EBTBP) were concluded not to meet any of the criteria for toxicity set out in section 64 of CEPA.

The Screening Assessment Reports for the remaining three substances in this grouping, 2-Propanol, 1-chloro-, phosphate (3:1) (TCP), 2-Propanol, 1,3-dichloro-, phosphate (3:1) (TDCPP) and melamine are being revised to take into consideration information provided following publication of the draft documents, and will be published in the winter/spring of 2019-2020.

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1. Context

The *Canadian Environmental Protection Act, 1999* (CEPA) (Canada 1999) provides the authority for the Minister of the Environment and the Minister of Health (the Ministers) to conduct assessments to determine if substances are toxic to the environment and/or harmful to human health as set out in section 64 of CEPA^{1,2}, and if so to manage the associated risks.

As part of the second phase of the Chemicals Management Plan, the Ministers plan to assess and manage, where appropriate, the potential health and ecological risks associated with approximately 500 substances, in nine substance groupings (Canada 2011a).

The substance benzene, 1,1'-(1,2-ethanediyl)bis[2,3,4,5,6-pentabromo-, Chemical Abstracts Service Registry Number 84852-53-9, commonly known as decabromodiphenyl ethane and referred to throughout this document as DBDPE, is included in the Certain Organic Flame Retardants Substance Grouping of the Substance Groupings Initiative of the Chemicals Management Plan.

2. Issue

Environment and Climate Change Canada (ECCC) and Health Canada conducted a joint scientific assessment relevant to the evaluation of DBDPE in Canada. A notice summarizing the scientific considerations of the final Screening Assessment Report for this substance was published in the *Canada Gazette*, Part I, on May 11, 2019 (Canada 2019). For further information, refer to the [Final Screening Assessment Report for DBDPE](#).

2.1 Final Screening Assessment Report Conclusion

On the basis of the information available, the final Screening Assessment Report concludes that DBDPE is toxic under section 64(a) of CEPA because it is

¹ Section 64 [of CEPA]: *For the purposes of [Parts 5 and 6 of CEPA], except where the expression “inherently toxic” appears, a substance is toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that*

- (a) *have or may have an immediate or long-term harmful effect on the environment or its biological diversity;*
- (b) *constitute or may constitute a danger to the environment on which life depends; or*
- (c) *constitute or may constitute a danger in Canada to human life or health.*

² A determination of whether one or more of the criteria of section 64 are met is based upon an assessment of potential risks to the environment and/or to human health associated with exposures in the general environment. For humans, this includes, but is not limited to, exposures from ambient and indoor air, drinking water, foodstuffs, and products used by consumers. A conclusion under CEPA is not relevant to, nor does it preclude, an assessment against the hazard criteria specified in the *Hazard Product Regulations*, which are a part of the regulatory framework for the Workplace Hazardous Materials Information System for products intended for workplace use. Similarly, a conclusion on the basis of the criteria contained in section 64 of CEPA does not preclude actions being taken under other sections of CEPA or other Acts.

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.

The final Screening Assessment Report also concludes that DBDPE meets the criteria for persistence but does not meet the criteria for bioaccumulation, as defined in the *Persistence and Bioaccumulation Regulations* made under CEPA (Canada 2000).

The final Screening Assessment Report also concludes that DBDPE may contribute to the formation of persistent, bioaccumulative and inherently toxic transformation products, such as lower brominated diphenyl ethanes, in the environment.

The risks of concern identified in the final Screening Assessment Report, are based on the release of DBDPE from industrial processing activities and from the use and disposal of products containing DBDPE. While the risks posed by DBDPE itself are low, the potential for DBDPE to transform into persistent, bioaccumulative and inherently toxic transformation products presents a risk of concern. These findings are consistent with the concerns expressed in the 2010 Ecological State of the Science Report on Decabromodiphenyl Ether, in that DBDPE is expected to transform to lower brominated products in a manner similar to decaBDE, which are harmful to the environment (Canada, 2019). As such, this document will focus on these activities of concern (refer to section 5).

For further information on the final Screening Assessment, refer to the final Screening Assessment Report for Decabromodiphenyl ethane (DBDPE).

2.2 Recommendation under CEPA

On the basis of the findings of the final Screening Assessment conducted as per CEPA, the Ministers recommend that DBDPE be added to the List of Toxic Substances in Schedule 1 of the Act.³

The Ministers have taken into consideration comments made by stakeholders during the 60-day public comment period on the draft Screening Assessment Report and the Risk Management Scope document.

Placing a substance on Schedule 1 of the Act allows the Minister to take certain actions with respect to the substance. As the Ministers finalize the recommendation to add DBDPE to Schedule 1, risk management instruments will be proposed within 24 months from the date on which the final Screening

³ When a substance is found to meet one or more of the criteria under section 64 of CEPA, the ministers can propose to take no further action with respect to the substances, add the substance to the Priority Substances List for further assessment, or recommend the addition of the substance to the List of Toxic Substances in Schedule 1 of the Act.

Assessment Report is published, and finalized within 18 months from the date on which the risk management instruments are proposed.

2.3 Public Comment Period on the Risk Management Scope

The Risk Management Scope document for DBDPE, which summarized the proposed risk management actions under consideration at that time, was published on October 8, 2016. Industry and other interested stakeholders were invited to submit comments on the Risk Management Scope document during a 60-day comment period. Comments received on the Risk Management Scope document were taken into consideration in the development of this document. A [summary of responses to public comments](#) received is available].

2.4 Notice of Intent to amend the Prohibition of Certain Toxic Substances Regulations, 2012 and Consultation document on proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2012 for certain PFASs, HBCD, PBDEs, DP and DBDPE

On October 13, 2018, Environment and Climate Change Canada (ECCC) and Health Canada (HC) published the Notice of Intent to amend the Prohibition of Certain Toxic Substances Regulations, 2012. The notice stated that should the final screening assessment reports conclude that DBDPE is toxic under section 64 of CEPA, that the Department of the Environment and the Department of Health will initiate the development of amendments to the Prohibition of Certain Toxic Substances Regulations, 2012 to prohibit its manufacture, use, sale, offer for sale and import (Canada 2018b).

A Consultation document on proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2012 for certain PFASs, HBCD, PBDEs, DP and DBDPE was published on **December 21, 2018** to inform and solicit comments from stakeholders on the proposed amendments to the Regulations.

Stakeholder comments received for the Notice of Intent and Consultation document will be considered in the development of amendments to the Prohibition of Certain Toxic Substances Regulations, 2012 to prohibit manufacture, use, sale, offer for sale and import of DBDPE.

3. Proposed Risk Management

Section 3 presents the environmental and risk management objectives, as well as the proposed actions to achieve them. For more information on the context

and rational for these actions, please consult sections 4 and 5 titled “Background” and “Exposure Sources and Identified Risks,” respectively.

3.1 Proposed Environmental Objective

Proposed environmental objectives are quantitative or qualitative statements of what should be achieved to address environmental concerns.

The final Screening Assessment Report concludes that DBDPE is toxic, persistent and results predominantly from human activities and that DBDPE is expected to contribute to the formation of persistent, bioaccumulative and inherently toxic transformation products, such as lower brominated diphenyl ethanes, in the environment. As such, DBDPE meets the criteria outlined in the Government of Canada’s *Toxic Substances Management Policy* for virtual elimination from the environment (Canada, 1995).

For DBDPE, the proposed objective is focused on addressing the exposure sources identified in the final Screening Assessment Report, outlined in section 5 of this document. As such, the proposed environmental objective for DBDPE is to reduce its concentrations in the Canadian environment to the greatest extent practicable.

3.2 Proposed Risk Management Objective and Proposed Action

Proposed risk management objectives set quantitative or qualitative targets to be achieved by the implementation of risk management regulations, instrument(s) and/or tool(s) for a given substance or substances.

The proposed risk management objective for DBDPE is to achieve the lowest level of release of the substance into the Canadian environment, taking into account social, economic and technical matters.

To achieve the proposed risk management objective and to work towards achieving the proposed environmental objective, the proposed risk management action for DBDPE is to prevent and reduce releases of DBDPE into the environment.

The proposed action is described below. Context and rationale for this action is described in section 5.

3.2.1 Amend the *Prohibition of Certain Toxic Substances Regulations, 2012*, to include DBDPE

The proposed action to address exposure sources is to amend the *Prohibition of Certain Toxic Substances Regulations, 2012* to include the substance DBDPE and products containing DBDPE.

This would prohibit the manufacture, import, use, sale and offer for sale of DBDPE, as well as products and manufactured items containing DBDPE. The proposed action would target all manufacturers, importers and users of the substance DBDPE and products containing DBDPE.

As detailed in Section 7, Ministerial Conditions under CEPA have been imposed on DBDPE to mitigate potential risks to the environment. Pending the implementation of regulations to amend the *Prohibition of Certain Toxic Substances Regulations, 2012* to include the substance DBDPE and products containing DBDPE, the existing Ministerial Conditions for DBDPE will be rescinded.

3.3 Risk Management Information Gathering

In order to address remaining data gaps and understand the challenges faced by stakeholders in, we are asking for specific information related to DBDPE and activities that are proposed to be managed under the *Prohibition of Certain Toxic Substances Regulations, 2012*. If your company undertakes an activity listed below ECCC invites you to submit information identified below, within the timelines (and to the contact) identified in section 8 of this document.

Activity	Information Needs
<p>Import, use, sale, and/or offer for sale of DBDPE or a product containing it for use in applications including:</p> <ul style="list-style-type: none"> - Adhesives and sealants; - Automotive, aircraft and transportation; - Basic organic chemical manufacturing; - Electronical and electronic equipment; - Plastic and rubber materials, 	<ul style="list-style-type: none"> • Description of the specific application, including the quantity and concentration of DBDPE. • Known alternatives to DBDPE in the application. • Achievable timeline for your company to complete a phase out, explaining significant challenges, cost estimates and efficiency or suitability of alternatives.

<p>Import or use of manufactured items, including parts, which contain any of the substances.</p>	<ul style="list-style-type: none"> • Name and description of the manufactured items imported or used. • Quantities of manufactured items imported or used annually (with unit of measurement). • Concentration of DBDPE (with unit of measurement). • Known alternatives to DBDPE in these manufactured items. • Achievable timeline for your company to complete a phase-out, explaining significant challenges, cost estimates, and efficiency or suitability of alternatives.
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4. Background

4.1 General Information on DBDPE

DBDPE is a brominated flame retardant substance. DBDPE is marketed under numerous trade names as indicated in Annex A.

4.2 Current Uses and Identified Sectors

In Canada, as DBDPE is not present on the DSL and it is subject to the *New Substances (NS) Notifications Regulations (Chemicals and Polymers)* pursuant to CEPA (Canada 2005). Recent risk management measures (i.e., Ministerial Conditions), based on New Substances ecological risk assessments, have limited the import of the substance for use as a flame retardant component of wire and cable coatings, thermoplastic parts, thermoplastic coatings, thermoset parts and thermoset coatings, as well as placing some restrictions on its release and disposal (Canada 2004, 2011b). Please refer to section 7 for additional information on the controls currently in place for DBDPE under the *New Substances Regulations (Chemicals and Polymers)*.

According to submissions made under section 71 of CEPA (Canada 2013, 2017) and submissions under the New Substance Notifications Regulations (Canada 2019), DBDPE is used in Canada as a flame retardant in applications of: plastic and rubber materials such as thermoplastic or thermoset parts and coatings (for use in polymer resins and polymer plastics); electrical and electronics including appliances and wire and cable coatings for the telecommunications industry;

automotive, aircraft, and transportation, adhesives and sealants, appliances; and basic organic chemical manufacturing. DBDPE was also reported to be used in the manufacture of automotive airbag textile and generally in motor vehicles (Canada 2013, 2017).

Based on surveys conducted under section 71 of CEPA, and considering data from New Substances notifications, the total quantity of DBDPE imported into Canada in 2011 was in the range of 1 000 000 to 10 000 000 kg, and in 2016 was in the range of 100 000 - 1 000 000 kg, including DBDPE in neat form, in formulations and in commercial products or products available to consumers. No DBDPE was identified as being manufactured in Canada in 2011 or 2016. The total quantity of DBDPE exported from Canada in 2011 was less than 100 tonnes (Canada 2013a, 2016a, 2017).

5. Exposure Sources and Identified Risks

The volumes of DBDPE imported into Canada, along with information on its uses, indicate potential for widespread release into the Canadian environment (Canada 2019).

It is expected that DBDPE may be released to the Canadian environment as a result of industrial processing activities. Releases to the environment are expected to occur primarily through wastewater, with some release to water directly from industrial sites. Canadian effluent and wastewater sludge data show that publicly owned wastewater treatment systems (WWTS) with higher proportional industrial inputs (e.g., >30%) have higher DBDPE concentrations (e.g., 10X) than those dominated by domestic (non-industrial) influent input (Canada 2019).

Industrial scenarios (which considered available site information), with DBDPE release to water and predicted partitioning to sediment and releases to soil, were used to estimate exposure. Risk quotient analyses, integrating conservative estimates of exposure with toxicity information, were performed for the sediment and terrestrial compartments (soil and wildlife). These analyses showed that current risks posed by DBDPE itself, are low (Canada 2019).

Additive use of DBDPE in products suggests diffuse emissions may occur from commercial products or products available to consumers and, although there are uncertainties, the rate is assumed to be low in comparison to industrial point sources during incorporation of the substance into products (Canada 2019).

A risk quotient analysis for DBDPE transformation products was not conducted given the lack of information on transformation product quantity in Canada. Transformation products are expected to represent a minor fraction relative to parent DBDPE; however, they are similar to predicted/measured fractions of analogue decabromodiphenyl ether (decaBDE) debromination products, and if

DBDPE levels in the environment were to increase (e.g., due to its use as a replacement flame retardant), the pool of potential brominated transformation products could become important (Canada 2019).

6. Risk Management Considerations

6.1 Alternatives and Alternate Technologies

Flame retardant substances are generally used to meet performance-based flammability requirements. These requirements do not specify that chemical flame retardants need to be used; rather they may require a product or component to pass a laboratory test such as a cigarette smolder or open flame ignition test (ASTM 2014). Using chemical flame retardants in their products is one means through which companies can achieve flammability requirements for their products. Alternate technologies as well as non-chemical-based alternatives, such as nano-technologies and barrier materials, may also be used to replace the use of flame retardant substances in various applications.

Due to similar performance, in some applications substances in the OFR Grouping, including DBDPE, may be used as alternatives for each other as well as in place of other “legacy” flame retardants that have been prohibited or are subject to risk management measures in Canada, in other jurisdictions or globally.

Leading candidates for substituting DBDPE are expected to be various brominated flame retardants. Due to similar applications and performance in high impact polystyrene (HIPS), acrylonitrile-butadiene-styrene (ABS) and textiles, potential alternatives for DBDPE include: Tetrabromobisphenol-A (TBBPA), Bis(tribromophenoxy)ethane (BTBPE), Dechlorane Plus (DP), Tris(tribromophenoxy)triazine (TBPC), Ethylene bis(tetrabromophthalimide) (EBTBP). Potential substitutes for these substances could also be alternatives to DBDPE (Cheminfo 2012).

DP and EBTBP, which are included in the Certain Organic Flame Retardants Substance Grouping, are potential alternatives to DBDPE. While EBTBP is proposed not-toxic, DP is proposed to be toxic under paragraph 64(a) of CEPA, and risk management measures are being considered. Please refer to the [Risk Management Approach for DP](#) for additional information on options under consideration.

However, available data, much of which has been focused on identifying and evaluating suitable alternatives for different PBDE formulations, indicate that there are other potentially viable alternative chemical flame retardants (e.g. polyphosphonate and substituted amine phosphate mixture) commercially available which are less hazardous than DBDPE or other halogenated

alternatives and are suitable for applications for which DBDPE is reported to be used in Canada (US EPA, 2014).

6.2 Socio-economic and Technical Considerations

Where information was available, socio-economic factors have been considered in the selection process for an instrument respecting preventive or control actions, and in the development of the risk management objective. Socio-economic factors will also be considered in the development of regulations, instrument(s) or tool(s) as identified in the *Cabinet Directive on Regulatory Management* (TBS, 2012) and the guidance provided in the Treasury Board document *Assessing, Selecting, and Implementing Instruments for Government Action* (TBS, 2007).

7. Overview of Existing Risk Management

7.1 Related Canadian Risk Management Context

DBDPE has been in commerce in Canada since the transitional period, between the establishment of the DSL and the coming into force of the New Substance Notification Regulations (Chemicals and Polymers) (between January 1, 1987 and July 1, 1994). As such, DBDPE is not listed on the DSL, and is subject to the New Substance Notification Regulations (Chemicals and Polymers) pursuant to CEPA.

Ecological and human health risk assessments completed under the New Substances program indicated ecological concerns and this substance was suspected of being toxic, as per paragraph 64 of CEPA. As a result, Ministerial Conditions under CEPA have been imposed on DBDPE to mitigate potential risks to the environment.

There are several Ministerial Conditions currently in force for DBDPE that apply only to specific stakeholders and limit the import of the substance for specific use and impose restrictions on its handling and disposal in industrial settings. The Ministerial Conditions for DBDPE do not apply to similar stakeholders who submitted high volume notifications prior to the coming into force of the New Substance Notification Regulations (Chemicals and Polymers).

As outlined in Section 3.2, pending the implementation of regulations to amend the *Prohibition of Certain Toxic Substances Regulations, 2012* to include the substance DBDPE and products containing DBDPE, the existing Ministerial Conditions for DBDPE will be rescinded.

7.2 Pertinent International Risk Management Context

7.2.1 United States

In the United States, DBDPE is listed as a new chemical under the Toxic Substances Control Act (TSCA) inventory. DBDPE is also subject to a Significant New Use Rule (SNUR) (US EPA 2013). Under the SNUR, persons are required to submit a significant new use notice (SNUN) to the US EPA at least 90 days before they manufacture, import or process DBDPE for industrial, commercial and consumer activities. However, the requirements of the SNUR do not apply once DBDPE has been incorporated into a resin. Additionally, export notification is required for DBDPE as a chemical substance or in a mixture (US EPA 2015).

7.2.2 Europe

DBDPE is listed as a Low Production Volume Chemical (under 1000 tonnes/yr) on the European Chemical Substance Information Systems (ESIS) (ECHA 2016).

In 2012, DBDPE was identified for immediate evaluation as part of the Community Rolling Action Plan (CoRAP) under the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation (ECHA 2014). REACH makes industry responsible for assessing and managing the risks posed by chemicals and providing appropriate safety information to their users. The addition of DBDPE to the CoRAP substance list required the designated Member State to complete the evaluation of DBDPE within 12 months. The evaluation recommended that additional information be submitted by industry to identify if DBDPE transformed into products that could be persistent, bioaccumulative and inherently toxic (ECHA 2014). Testing results are expected in 2019.

8. Next Steps

8.1 Public Comment Period

Industry and other interested stakeholders are invited to submit comments on the content of this Risk Management Approach or other information that would help to inform decision-making. Please submit additional information and comments prior to June 9, 2019.

Please note that stakeholder comments received for the Consultation document on proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2012 for certain PFASs, HBCD, PBDEs, DP and DBDPE (Canada, 2018) will be considered along with comments submitted for this Risk Management Approach document.

Comments and information submissions on the Risk Management Approach should be submitted to the address provided below:

Environment and Climate Change Canada
Chemicals Management Division

Gatineau Quebec K1A 0H3
Tel: 1-800-567-1999 | 819- 938-3232
Fax: 819-938-3231
Email: eccc.substances.eccc@canada.ca

Companies who have a business interest in DBDPE are encouraged to identify themselves as stakeholders. Stakeholders will be informed of future decisions regarding DBDPE and may be contacted for further information.

Following the public comment period on the Risk Management Approach document, the Government of Canada will initiate the development of the amendments to the Prohibition of Certain Toxic Substances Regulations, 2012. Comments received on the Risk Management Approach document will be taken into consideration in the development of these amendments.

8.2 Timing of Actions

Publication of the final Screening Assessment Report and the Risk Management Approach document: May 11, 2019.

Electronic consultation on the Risk Management Approach: May 11, 2019 to June 9, 2019.

Submission of additional studies or information on DBDPE: on or before June 9, 2019.

Publication of responses to public comments on the Risk Management Approach: On or before May 2021.

Publication of the proposed amendments to the *Prohibition of Certain Toxic Substances Regulations, 2012*: On or before May 2021.

Publication of final amendments to the *Prohibition of Certain Toxic Substances Regulations, 2012*: On or before November 2022.

9. References

[ASTM] ASTM International. 2014. [Fire Standards and Flammability Standards](#).

Canada. 1995. [Toxic Substances Management Policy](#). Catalogue Number: En 40-499 / 1-1995.

Canada. 1999. [Canadian Environmental Protection Act, 1999](#). S.C., 1999, ch. 33. [Canada Gazette](#). Part III. vol. 22, no. 3. Ottawa: Queen's Printer [PDF].

Canada. 2000. *Canadian Environmental Protection Act, 1999: [Persistence and Bioaccumulation Regulations](#)*, P.C. 2000-348, 23 March 2000, [SOR/2000-107\[PDF\]](#).

Canada. 2004. Dept. of the Environment. *Canadian Environmental Protection Act, 1999: [Announcement of conditions regarding application, use and release of 1,1'-\(1,2-ethanediyl\)bis\(2,3,4,5,6-pentabromo\)- substances](#)*. Canada Gazette, Part I, vol. 138, no. 40 – October 2, 2004, p. 2644-2646.

Canada. 2005. *Canadian Environmental Protection Act, 1999: [New Substances Notification Regulations \(Chemicals and Polymers\)](#)*. P.C. 2005-1484. August 31, 2005. [SOR/2005-247](#).

Canada. 2006. Dept. of the Environment. *Canadian Environmental Protection Act, 1999: [Notice with respect to selected substances identified as priority for action](#)*. *Canada Gazette Part I*, vol. 140, no. 9, p. 435-459 [PDF].

Canada. 2008a. Dept. of the Environment. *Canadian Environmental Protection Act, 1999: [Ministerial Condition No. 15096 and Ministerial Condition No. 15193](#)*. *Canada Gazette, Part I*, vol. 142, no. 40 – October 4, 2008, p. 2730-2734.

Canada. 2008b. Dept. of the Environment. *Canadian Environmental Protection Act, 1999: [Ministerial Condition No. 15005](#)*, Part I, vol. 142, no. 16 – April 19, 2008, p. 1100-1102.

Canada. 2009. Dept. of the Environment. *Canadian Environmental Protection Act, 1999: [Ministerial Condition No. 15300](#)*. *Canada Gazette, Part I*, vol. 143, no. 1 – January 3, 2009, p. 4-6.

Canada. 2011a. Dept. of the Environment. *Canadian Environmental Protection Act, 1999: [Announcement of planned actions to assess and manage, where appropriate, the risks posed by certain substances to the health of Canadians and the environment](#)*. *Canada Gazette, Part I*, vol. 145, no. 41 – October 8, 2011, p. 3125-3129.

Canada. 2011b. Dept. of the Environment. [Ministerial Condition No. 16260](#). *Canada Gazette Part I*, vol. 145 no. 20 – May 14, 2011, pp.1513-1515.

Canada 2013. Dept. of the Environment. *Canadian Environmental Protection Act, 1999: [Notice with respect to certain organic flame retardant substances](#)*. *Canada Gazette, Part I*, vol. 147, no. 13 – March 30, 2013, pp. 613-633.

Canada. 2015. [Treasury Board of Canada Secretariat. Red Tape Reduction Act](#). S.C. 2015, c.12.

Canada. 2017. Dept. of the Environment. *Canadian Environmental Protection Act, 1999: [Notice to provide information for the risk management of certain substances – Summer 2017](#)*. Canada Gazette, Part I, vol. 151, no. 13 – April 01, 2017, pp. 1444-1468.

Canada. 2018a. Dept. of the Environment. [Consultation document on proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2012 for certain PFASs, HBCD, PBDEs, DP and DBDPE](#). Available from: <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/proposed-amendments-certain-toxic-substances-2018-consultation.html>.

Canada. 2018b. Dept. of the Environment, Dept. of Health. Canadian Environmental Protection Act, 1999: [Notice of intent to amend the Prohibition of Certain Toxic Substances Regulations, 2012](#). Canada Gazette, Part I, Volume 152, no. 41 - October 13, 2018, pp 3376-3378.

Canada. 2019. Dept. of the Environment, Dept. of Health. Final Screening Assessment for the [Certain Organic Flame Retardants Grouping, Benzene, 1,1'-\(1,2-ethanediyl\)bis \[2,3,4,5,6-pentabromo- \[Decabromodiphenyl ethane \(DBDPE\)\]](#).

[ECHA] European Chemicals Agency. 2014. [Community rolling action plan – CoRAP list of substances. \[Search results for 1,1'-\(ethane-1,2-diyl\)bis\[pentabromobenzene\]](#). Retrieved October 2015

[ECHA] European Chemicals Agency. 2016. [Database for registered substances. \[Search results for 1,1'-\(ethane-1,2-diyl\)bis\[pentabromobenzene or CAS 84852-53-9\]](#). Retrieved March 2016

[TBS] Treasury Board of Canada Secretariat. 2012a. [Cabinet Directive on Regulatory Management](#).

[US EPA] US Environmental Protection Agency. 2013. [TSCA chemical substance Inventory](#).

[US EPA] US Environmental Protection Agency. 2014. [An Alternatives Assessment for the Flame Retardant Decabromodiphenyl Ether \(DecaBDE\)](#).

[US EPA] US Environmental Protection Agency. 2015. [EPA Actions to Reduce Risk for New Chemicals under TSCA](#). Retrieved October 2015

ANNEX A. Synonyms and Trade Names

CAS RN	Other selected names
84852-53-9	<p> Benzene, 1,1'-(1,2-ethanediyl)bis[2,3,4,5,6-pentabromo- (TSCA, ASIA-PAC, NZIoC) 1,1'-(ethane-1,2-diyl)bis[pentabromobenzene] (EINECS) 1,2-Bis(2,3,4,5,6-pentabromophenyl)ethane ;1,2-Bis(pentabromophenyl)ethane; Decabromodiphenylethane;Decabromodiphenylethylene Decadiphenyl 8010; Ethylenebis(pentabromobiphenyl); Ethylenebispentabromobenzene; 1,2,3,4,5-pentabromo-6-[2-(2,3,4,5,6-pentabromophenyl)ethyl]benzene; 2,2',3,3',4,4',5,5',6,6'-Decabromobibenzyl; Ethane 1,2-bis(pentabromophenyl); BDPE-209; DBDiPhEtb; DBDE; EBPE; DeBrPylE, EPB FCP 801; Firemaster 2100; Firemaster 2100C; Planelon BDE; RDT 3; S 8010; SAYTEX 8010; CG 801; PBB-209; SLFR-2; SAYTEX 4010 Flame Retardant; SAYTEX 4010 ZD; SAYTEX 402 Flame Retardant (no longer marketed); SAYTEX 8010 Flame Retardant; SAYTEX 8010 ZD; Netguard 8010; NNN® Br-971, Ecoflame B-971, YCFR-03, DBDPE/RDT-3, FR-1410 </p>