Government of Canada / Gouvernement du Canada

Certain Organic Flame Retardants Grouping Risk Management Approach For 1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro- Dechlorane Plus (DP) Chemical Abstracts Service Registry Number (CAS RN): 13560-89-9

Environment and Climate Change Canada

Health Canada

May 2019

Canada

Summary of Proposed Risk Management

This document outlines the proposed risk management actions for 1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-, commonly known as Dechlorane Plus (DP), 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 DP 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 DP, as well as products and manufactured items containing it.

Additionally, the nomination of DP as a chemical of mutual concern under Annex 3 of the Canada – United States Great Lakes Water Quality Agreement will be pursued, as a means of addressing transboundary releases of DP which may contribute to environmental exposure in Canada.

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 DP or a product containing it for use in applications including: - Automobile manufacturing; - Electronical and electronic equipment (e.g. cable coatings and hard plastic connectors); - Building and construction materials (e.g. plastic roofing);	• Description of the specific application, including the quantity and concentration of DP. • Known alternatives to DP 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.	• Name and description of the manufactured items imported or used. • Quantities of manufactured items imported or used annually (with unit of measurement). • Concentration of DP (with unit of measurement).

	• Known alternatives to DP 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.

The Certain Organic Flame Retardants Substance Grouping:

DP 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 DP, one other substance in this subset, Decabromodiphenyl ethane (DBDPE), 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, 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) (TCPP), 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 onin the winter/spring 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 2011).

The substance 1,4:7,10-Dimethanodibenzo[a,e]cyclooctene, 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-, Chemical Abstracts Service Registry Number 13560-89-9, commonly known as Dechlorane Plus® (Dechlorane Plus) and referred to throughout this document as DP, 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 DP 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 DP*..

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[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.

2.1 Final screening assessment report conclusion

On the basis of the information available, the final Screening Assessment Report concludes that DP is toxic under section 64 of CEPA because it is 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 DP meets the criteria for persistence and meets the criteria for bioaccumulation, as defined in the *Persistence and Bioaccumulation Regulations* made under CEPA (Canada 2000).

The risks of concern, identified in the final Screening Assessment Report, are based on the anthropogenic release of DP to water from industrial activities, including cable and wire manufacturing and automobile manufacturing. In addition, environmental transport of DP released from manufacturing activities in the northern USA may contribute to DP exposure in Canada. Additive use of DP suggests diffuse emissions may occur from products containing DP, which are identified as a potential risk of concern to the environment. This document will focus on these exposure sources of concern (refer to section 5.2).

For further information on the final Screening Assessment, refer to the final Screening Assessment Report for Dechlorane Plus (DP).

2.2 Recommendation under CEPA

On the basis of the findings of the final Screening Assessment conducted as per CEPA, the Ministers recommend that DP 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 Ministers to take certain actions with respect to the substance. As the Ministers finalize the recommendation to add DP to Schedule 1, risk management instruments will be proposed within 24 months from the date on which the final Screening Assessment Report is published, and finalized within 18 months from the date on which the risk management instruments are proposed.

[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.

2.3 Public comment period on the risk management scope

The Risk Management Scope document for DP, 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. No comments were received on the Risk Management Scope document.

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 DP 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 DP.

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 DP is toxic, persistent and bioaccumulative and results predominantly from human activity. As such, DP meets the criteria outlined in the Government of Canada's *Toxic Substances Management Policy* for virtual elimination from the environment (Canada 1995).

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

3.2 Proposed risk Management objective and proposed actions

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 DP 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 actions for DP will reduce environmental releases of DP.

The proposed actions are described below. Context and rationale for these actions are discussed in section 5.

3.2.1 Amend the *prohibition of certain toxic substances regulations, 2012*, to include DP

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

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

3.2.2 Pursue the nomination of DP as a chemical of mutual concern the *Canada – U.S. Great Lakes Water Quality Agreement*

The proposed action to address the contribution to exposure to DP in Canada from transboundary releases associated with the manufacture of DP in northern U.S is to pursue the nomination of DP so that it would be considered for

designation as a chemical of mutual concern (CMC) under Annex 3 of the Canada – United States Great Lakes Water Quality Agreement.

If designated as a CMC, the Canada and the United States would jointly develop a binational strategy to reduce the anthropogenic release of DP into the waters of the Great Lakes, which may include research, monitoring, surveillance and pollution prevention and control provisions.

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 DP 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
Import, use, sale, and/or offer for sale of DP or a product containing it for use in applications including: - Automobile manufacturing; - Electronical and electronic equipment (e.g. cable coatings and hard plastic connectors); - Building and construction materials (e.g. plastic roofing);	• Description of the specific application, including the quantity and concentration of DP. • Known alternatives to DP 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.	• Name and description of the manufactured items imported or used. • Quantities of manufactured items imported or used annually (with unit of measurement). • Concentration of DP (with unit of measurement). • Known alternatives to DP 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.

4. Background

4.1 General information on DP

DP is a chlorinated cycloaliphatic flame retardant. The commercial technical product DP is primarily a mixture of syn and anti-stereoisomers, typically composed of approximately 25% syn-DP and 75% anti-DP (Canada 2019).

4.2 Current uses and identified sectors

Based on surveys conducted under section 71 of CEPA for the years 2011 and 2016, between 1000 and 10 000 kg of DP, including DP in some products, was imported into Canada by a few companies (Canada 2017, 2018). No DP was identified as being manufactured in Canada for 2011, 2015 or 2016. According to the result of a Domestic Substances List Inventory Update conducted for the year 2008, DP was found to be imported into Canada by a number of companies in similar quantities (same order of magnitude range) as reported in 2011 and 2016 (Canada 2019).

Currently there are two known producers of DP in the world: one located in the U.S. and the other in China. The worldwide annual production volume for DP has been estimated at approximately 4500-5000 tonnes. According to the US EPA, DP production/import quantities in the U.S. have been constant within the same reporting range of 450-4500 tonnes for 1986-2006. A manufacturer in China has been producing DP since approximately 2003-2005, with annual DP production estimated to range from 300 to 1000 tonnes (Canada 2019).

Internationally, DP is used as an additive flame retardant in applications of wiring and cable jacketing, electronics, automobiles, plastic roofing materials, and hard plastic connectors and similar uses of DP are known or expected in Canada. According to submissions under section 71 of CEPA, DP is used in Canada as a flame retardant in automobile manufacturing (Canada 2019).

5. Exposure sources and identified risks

Releases of DP to the Canadian environment, due to the substance's use as a flame retardant, are expected from point sources (e.g., from processing facilities and wastewater treatment systems). Additive use of DP in products suggests diffuse emissions may occur from products containing DP and are expected to be geographically dispersed and spread out over the duration of the service life and end-of-life. DP is also a High Production Volume substance in the USA; past and/or present environmental transport of DP from the northern USA, in

particular manufacturing near the Great Lakes, may therefore contribute to DP exposure in Canada (Canada 2019).

DP's high persistence suggests the potential for build-up in the environment from past and current emissions, resulting in long-term exposures in sediment and soil. DP is expected to strongly adsorb to suspended solids/particulates when released to surface water, either directly from industrial activities or indirectly via wastewater treatment systems, and eventually settle in depositional sediment areas (i.e. sinks) (Canada 2019).

The final Screening Assessment Report includes several conservative aquatic industrial release scenarios that provide estimates of exposure, based on available industrial site information including potential quantities used. The scenarios were developed to cover a range of known DP industrial activities that could occur in Canada including: manufacturing of wires and cables, automobile manufacturing, and manufacturing of hard plastic connectors. All scenarios involved industrial release to water resulting in DP partitioning to sediment, and partitioning to wastewater biosolids followed by their application to soil. In addition, recent monitoring data from wastewater treatment systems across Canada (effluent and bio-solid data) were used to further develop the exposure analysis (Canada 2019).

Risk quotient analyses, integrating conservative estimates of exposure from the industrial release scenarios with toxicity information, were performed for sediment and soil organisms, and wildlife. Results of these analyses indicate that industrial releases of DP could represent a risk to sediment dwelling organisms (Risk Quotient = 29.9). Furthermore, several studies have reported DP sediment concentrations in the Great Lakes region that exceed the predicted environmental concentrations for sediment developed under the industrial scenarios. This suggests that DP exposure, and therefore risk, in specific areas of Canada could be underestimated and further precaution is warranted (Canada 2019).

In addition, although in most soil scenarios DP poses a low risk to organisms based on current levels of use and release in Canada, at least one soil exposure scenario suggests predicted environmental concentrations of DP approach a level that could result in risk to soil organisms (i.e. risk quotient = 0.78) (Canada 2019).

There is limited information characterizing potential releases from products in use and during disposal/recycling of at the end of their service life. While a coarse exposure scenario was developed which suggested low quantities for dispersed release of DP from products, this area of the final Screening Assessment Report represents an area of uncertainty of DP exposure to organisms in Canada. Furthermore recent wastewater treatment system monitoring data suggest release from end-of-life products may be an important source (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 applications and performance, substances in the OFR Grouping, including DP, are sometimes 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.

Indeed, leading candidates for substituting DP include various brominated flame retardants, for example: Decabromodiphenyl ether (DecaBDE), which is toxic under section 64 of CEPA and subject to the *Prohibition of Certain Toxic Substances Regulations*, and decabromodiphenyl ethane (DBDPE), which is also proposed to be toxic under section 64 of CEPA and risk management measures are being considered. DP is currently marketed as an alternative for DecaBDE in a range of additive flame retardant applications including electronic wiring and cables, automobiles, plastic roofing materials, and hard plastic connectors.

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 commercially available which are less hazardous than DP (e.g. polyphosphonate and substituted amine phosphate mixture) or other halogenated alternatives and are suitable for applications for which DP is reported to be used in Canada (US EPA, 2014a).

In many cases, a major concern identified with alternatives to brominated flame is that they often require higher loading levels in order to obtain equivalent flame retardant properties. However, DP is already typically used at much higher concentrations than other additive halogenated flame retardants (US EPA, 2014a).

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

Currently, DP is not subject to any substance-specific risk management in Canada and is listed under the DSL under CEPA.

7.2 Pertinent international risk management context

7.2.1 United States

7.2.1.1 Federal level

In the United States, DP is listed under the Toxic Substances Control Act inventory and is subject to the Chemical Data Reporting Rule, which required manufacturers and importers to provide the US Environmental Protection Agency with production, import and use volumes, as well as other relevant information (e.g. facility size and location) (US EPA 2014b).

7.2.1.2 State level

Under S.703.5 of the New York State Environmental Conservation Law (ECL), DP is subject to the principal organic contaminant water quality standard for groundwater of 5 µg/L. These standards are the basis for all programs to protect state waters by setting forth the maximum allowable levels of chemical pollutants and are used as the regulatory targets for permitting, compliance, enforcement, monitoring and assessing water quality (NY DEC 1999).

7.2.2 Europe

The European Chemical Agency (ECHA) has identified DP as a substance of very high concern (SVHC) and on January 15th, 2018, added DP to the *Candidate List of substances of very high concern for Authorization*, in accordance with Article 59(10) of the Registration, Evaluation, and Authorization of Chemicals (REACH) Regulation. DP's inclusion on the Candidate List brings immediate obligations for suppliers, such as: supplying a safety data sheet, communicating on safe use, responding to consumer requests within 45 days and notifying ECHA if the article they produce contains DP in quantities above one tonne per producer/importer per year and if DP is present in those articles above a concentration of 0.1% (w/w) (ECHA 2018a).

ECHA regularly assesses the SVHCs on the Candidate List to determine whether they should be included on the Authorization List as a priority. Authorization aims to ensure that SVHCs are progressively replaced by less dangerous substances or technologies. Once added to the Authorization List, a chemical cannot be placed on the market or used after a given date, unless an authorization is granted for a specific use or the use is exempted (ECHA 2018b).

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 DP are encouraged to identify themselves as stakeholders. Stakeholders will be informed of future decisions regarding DP 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 document: May 11, 2019 to June 9, 2019.

Submission of additional studies or information on DP: on or before June 9.

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.

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ANNEX A. Synonyms and Trade Names

CAS RN	Other selected names[a]
13560-89-9	1,4:7,10-Dimethanodibenzo[a,e]cyclooctene 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro- 1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-; IUPAC name: (1,6,7,8,9,14,15,16,17,17,18,18- Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca- 7,15-diene); Bis(hexachlorocyclopentadieno)Cyclooctane; Dodecachlorodimethanodibenzocyclooctane; DDCDiMeDiBzcOb; 1,2,3,4,7,8,9,10,13,13,14,14-Dodecachloro- 1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro- 1,4,7,10-dimethanodibenzo[a,e]cyclooctane; Bis(hexachlorocyclopentadieno)cyclooctane; Dechloran A; Dechlorane Plus; Dechlorane Plus 1000; Dechlorane Plus 25; Dechlorane Plus 2520; Dechlorane Plus 35; Dechlorane Plus 515; Dech Plus; Dodecachlorododecahydrodimethanodibenzocyclooctane; Dodecachlorododecahydrodimethanodibenzocyclooctene