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CANADIAN ENVIRONMENTAL LAW ASSOCIATION
L'ASSOCIATION CANADIENNE DU DROIT DE L'ENVIRONNEMENT

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Dear Ministers Ambrose and Clement:

Regulating PBDEs under the *Canadian Environmental Protection Act*

Re: Response to the Canada Gazette Order Part I, Vol. 140 No. 26 – Order Adding Toxic Substances to Schedule 1 to the Canadian Environmental Protection Act, 1999

The Canadian Environmental Law Association expresses its support for the proposal published in the *Canada Gazette* (Vol. 140, No. 26) adding the following polybrominated diphenyl ethers to Schedule 1 of the Canadian Environmental Protection Act, 1999: tetraBDE, pentaBDE, hexaBDE, hepta BDE, octaBDE, nonaBDE, and decaBDE. Further we would like to state that we agree with adding the following to the Virtual Elimination list: tetraBDE, pentaBDE, and hexaBDE.

Recommendation 1: CELA supports the addition of tetraBDE, pentaBDE, hexaBDE, hepta BDE, octaBDE, nonaBDE, and decaBDE to Schedule 1 under CEPA, 1999 as proposed under the Canada Gazette Order Vol. 140, No. 26.

Recommendation 2: We also support the listing of tetraBDE, pentaBDE, and hexaBDE on the virtual elimination list.

However, we note that the proposed Order does not articulate why octaBDE, nonaBDE and decaBDE have not been included in the proposed additions to the Virtual Elimination list, despite preliminary data suggesting the potential for some debromination of these higher brominated diphenyl ethers. We are aware of the on-going debate around the assessments conducted on decaBDE in other jurisdictions and in particular the controversy regarding the rate of debromination of decaBDE and its

contribution to the lower, more persistent forms of polybrominated diphenyl ether. Current discussion of the contribution of decaBDE to the formation of pentaBDE and other forms of PBDEs should remain a priority for further scrutiny by Canadian decision makers despite the current uncertainty of the science. We are pleased to read that the assessment by Canada of decaBDEs recognizes the resistance of this substance to breakdown into more benign substances. However, we had hoped that despite the limited science available on decaBDE and the availability of safer substitutes, Canadian decisions makers would follow the precautionary principle and add these substances to the virtual elimination list.

The use of deca-BDEs is extensive and will continue to increase. In jurisdictions where regulatory action has been imposed on pentaBDEs there has been a marked increase in use of the decaBDE commercial mixture to replace the use of pentaBDEs. Increasingly more studies are being released to demonstrate the evidence of debromination of decaBDE to lower forms of PBDEs. Despite the uncertainty that remains on the rate of debromination and to what degree debromination contributes to the formation of lower forms of PBDEs¹ in the long-term, decision makers should be concerned about possible increases in levels of pentaBDEs and other lower form PBDEs to the environment and to human and wildlife populations. In addition, the monitoring exercises focused on PBDEs confirm that these substances travel very long distances from their original sources and are detected in very remote regions of the world, including the circumpolar Arctic. Studies such as the Canadian Partnership on Children's Health and Environment's Child Health and the Environment – A Primer (2005) and biomonitoring results² effectively demonstrate how Canadians, in particular children, are exposed to these substances. The potential pathway for exposure to these substances remains in question; however, it has been determined that major potential pathways of exposure include indoor air (through dust) and food sources. For children, who are known to be at higher risk of exposure to toxic substances, these sources of toxic substances are cause for heightened concern.

Development of a Risk Management Strategy for Schedule 1 Substances under CEPA

With the addition of these substances to Schedule 1, we eagerly await the opportunity to provide input in the development of the risk management strategy for PBDEs: tetraBDE, pentaBDE, hexaBDE, heptaBDEs, hexaBDE, octaBDE, nonaBDE, and decaBDE. Action on these substances is needed immediately. A recent report by CERESANA Research titled, *Market Study: Flame Retardants (UC-405E)* (www.ceresana.com/en/html/flame_retardants.html#intro) predicts that "The total flame retardant market will continue to increase with annual growth rates of 5%, which is due in part to the fact that the use of plastics in the past few years has increased significantly."

¹ See: Heather M. Stapleton. May 2006. *Brominated Flame Retardants: Assessing DecaBDE Debromination in the Environment*.

² Environmental Defence. 2006. Toxics Nation. www.environmentaldefence.ca

Hence, one of the goals for a management strategy on PBDEs should be the immediate prohibition of these substances in manufacture, use, sale, generation, import and production of PBDEs. This prohibition would be consistent with the regulatory efforts of other jurisdictions. Given the extensive use of these substances in consumer products, the risk management strategy should outline an aggressive approach that aims to address PBDEs in industrial processes, in products as well as in the disposal methods. Key elements for the risk management strategy should include:

- An outline of options for method of safe disposal for products containing PBDEs. The list of options should not include incineration, which leads to the production and release of other hazardous substances, including POP substances (dioxins and furans, hexachlorobeneze, mercury, etc.), heavy metals, greenhouse gases and smog-forming substances.
- A regime to identify, develop and promote alternatives to PBDEs. Any alternatives considered as a safe alternative should not possess the same hazardous properties of PBDEs. Studies show that there are viable alternatives to flame retardants. Canada's work on PBDEs has not focused on these opportunities nor have these alternatives been promoted extensively. We recommend the following resources found on-line at <http://www.saferproducts.org/> :
 - Decabromodiphenylether: An Investigation of Non-Halogen Substitutes in Electronic Enclosure and Textile Applications, prepared by Pure Strategies, Inc. for The Lowell Center for Sustainable Production, University of Massachusetts Lowell (April 2005)
- A review and strengthening of fire standards in Canada to ensure the dependency on brominated flame retardants is assessed. The aim would be eliminating the use of PBDEs from this application and identifying opportunities to promote alternatives that do not possess the same hazardous properties but retain and improve flame resistance in materials;
- A review aimed at promoting and applying the extended producer responsibility and its role in promoting pollution prevention strategies. This discussion should review the full life cycle of PBDEs (from source to production processes to use and disposal methods), in order to identify the various points in their life cycle that results in the release of PBDEs or in the formation of other toxic substances.
- Mandatory labelling requirement for all importers of products containing any CEPA Schedule 1 substance.
- A process for identifying other brominated flame retardants in use in Canada, and for review of their hazardous properties. This work would be a good follow-up to the initial assessments conducted on the seven polybrominated diphenyl ethers.
- A government process to review the debromination process of decaBDEs within a year. The lack of certainty on the science on the debromination rate of decaBDEs to lower forms of PBDES should not be used as an excuse not to target decaBDE for virtual elimination at this time.

- Annual reporting of progress on implementing the risk management strategy for PBDEs.
- An effective public engagement process throughout the development, implementation and review of risk management on PBDEs.

Recommendation 3: One of the goals of the risk management strategy should be the immediate prohibition of the seven brominated flame retardants listed under the assessment.

Recommendation 4: We urge the government to establish a multi-stakeholder process to discuss elements of the management strategy immediately.

Other jurisdictions, such as various US states and Europe, have taken regulatory action to eliminate and phase out pentaBDEs and octaBDE over the past years. These regulatory efforts have resulted in dramatic decreases in levels of such substances in biota, sediments and soils over the years. Hence, in the immediate future, Canada should take necessary steps to announce regulations requiring the prohibition of penta and octaBDEs. In keeping with this approach, we strongly recommend that the timeframe available under CEPA should be focused on the development of regulations and additional instruments to manage the higher brominated PBDE substances such as hepta, nona- and decaBDEs that are found in the commercial decabromodiphenyl ether. The use of this commercial mixture of PBDEs will be on the rise as the lower forms of PBDEs are targeted for virtual elimination. Canada should require stringent measures when addressing decaBDEs in products, similar to the European Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment that targets the prohibition of PBDEs in electronic equipment as of July 1, 2006.³ To further these efforts, information to confirm the status of the voluntary withdrawal of PBDE production by a US chemical company for December 2004 and the current status of levels of imports of PBDEs to Canada are essential. This information was made available in the draft ecological screening assessment for PBDEs released in 2004 but was not noted in the Canada Gazette Order.

Recommendation 5: Canada should use the stringent measures outlined by the European Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, as models for setting Canadian targets for PBDEs in products.

³ Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0095:EN:HTML>

Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE) - Joint declaration of the European Parliament, the Council and the Commission relating to Article 9
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0096:EN:HTML>

Also see article: Apple in the Environment at <http://www.apple.com/environment/materials/>.

The finding of the health screening assessment, that the information was insufficient for making a conclusion of toxicity under section 64(c) of CEPA, remains a concern.

In our view, there is sufficient weight of evidence to fulfil the CEPA section 64 (c) requirements. In fact, we have identified several gaps in the assessment. For example, if the cumulative impact of these substances were considered in the human health assessments, would the conclusion by Health Canada be different? How would the consideration of exposure to PBDEs to vulnerable subpopulations such as children affect the outcome of the human health assessment? Would a ten-fold safety margin change the findings of the assessment?

We do not want the lack of uncertainty in this area to diminish the type of management options to be proposed for PBDEs. We therefore recommend that prohibition of these substances be given serious consideration. The regulatory actions of other jurisdictions provide strong evidence that bans or prohibitions are effective and are appropriate for brominated flame retardants. We urge Health Canada to review its assessment and apply the precautionary principle with respects to its conclusion of toxicity to human health from the seven brominated flame retardants. Where lack of evidence is available to demonstrate the safety of these substances throughout its life cycle, Health Canada's findings should support an approach that is protective of Canadians. In this case, we support a prohibition on the seven brominated flame retardants.

Recommendation 6: We urge Health Canada to apply the precautionary principle with respect to its conclusion of toxicity to human health from the seven brominated flame retardants and support a prohibition of these substances.

Should you have questions on our submission, please do not hesitate to contact me at 416-960-2284 ext. 223.

Sincerely,

A handwritten signature in black ink, appearing to read "Fe de Leon", with a long horizontal flourish extending to the right.

Fe de Leon
Researcher

c.c. Danie Dubé, Environment Canada; Bette Meek, Health Canada