

July 13, 2022

The Honourable Steven Guilbeault
Minister of the Environment
c/o Christina Paradiso
Executive Director Chemicals Management, Environmental Protection Branch
Department of the Environment
351 Saint-Joseph Boulevard, Gatineau, Quebec K1A 0H3
Email: ec.interdiction-prohibition.ec@ec.gc.ca

Re: Notice of Objection and Request for Board of Review in relation to proposed regulations prohibiting the manufacture, use, sale and import of decabromodiphenyl ethane (DBDPE, CAS Registry Number 84852-53-9) and polybrominated diphenyl ethers (PBDEs) while providing exemptions to the prohibitions, Canada Gazette, Part I, Volume 156, Number 20 – May 14, 2022: Prohibition of Certain Toxic Substances Regulations, 2022.

Dear Minister Guilbeault:

Our company writes to express our formal objection to the above-referenced regulatory proposal. SACO AEI Polymers Inc. is a manufacturer of polymer compound systems for use as primary insulation on electrical power cables (300V to 5000V) for the North American Wire and Cable industry. DBDPE is a widely used and widely accepted flame retardant that works with antimony trioxide synergist to provide mandatory and necessary flame-retardancy to a broad range of polymer compounds, including wire and cable insulation. SACO AEI Polymers sells approximately 1.5 million kgs of DBDPE-containing compound directly to the wire and cable manufacturing industry in Canada each year. In addition to this, SACO sells another 15 million kgs per year to wire and cable manufacturers in the U.S. who in turn sell their products universally into both Canada and the U.S.

Robust flame-retardancy in current-carrying electrical power cables is considered necessary for life safety and mandated by the Canadian Electrical Code in many applications. Cross-linked polyolefin wire and cable insulations offer important advantages over plasticized flexible PVC insulations including superior electrical performance in wet locations and high short-circuit and overload performance. The robustness of flame retardancy in power cables made with cross-linked polyolefin insulation relies almost exclusively on DBDPE. Currently there are no 'drop-in' alternatives to DBDPE.

As provided for by section 332(2) of CEPA 1999, SACO AEI Polymers inc. is filing this Notice of Objection and respectfully request that a Board of Review be established, pursuant to section 333 of CEPA 1999, to "inquire into the nature and extent of danger" posed by DBDPE and PBDEs for the reasons set out below.

Proposed Risk Management Measures May Lead to Severe Risk to Public Health and Safety

DBDPE performs a valuable function by reducing the flammability of the products where it is used. Those products include consumer devices and appliances, airplanes and motor vehicles, and a broad range of electrical wires and cables. In the absence of alternatives, the prohibitions on DBDPE pose a genuine risk of increasing flammability of those products therefore creating a severe risk to public health and safety.

Specifically, in electrical power cable insulation, prohibitions mean the reduction or elimination of flame retardancy of polymeric insulation in current-carrying conductors, in contradiction to domestic and international product safety standards and electrical codes. It is understood globally that elimination of flame retardancy in wire and cable products would sharply increase the risk of and likelihood of structure fires, again creating a severe risk to public health and safety that simply cannot be ignored. In addition, the increased likelihood of structure fires may spread to the environment, harming the target these prohibitions seek to protect.

Proposed Risk Management Measures for DBDPE are Not Aligned with Other Regulatory Agencies or Agreements

The proposed risk management measures as set out in the proposed Prohibition of Certain Toxic Substances Regulations, 2022 (the “draft Regulation”) for DBDPE are an outlier globally. No regulatory authority in the world has proposed risk management measures as sweeping as those set out in the draft Regulation. Canada is acting alone to prohibit DBDPE. By way of example, the United States Environmental Protection Agency (U.S. EPA) is not currently conducting a risk evaluation for DBDPE and is not contemplating risk management measures.

ECCC has noted that Canada is a party to the Stockholm Convention on Persistent Organic Pollutants (POP), and that the proposed risk management measures would allow Canada to meet “its international commitments implementing amendments to the Stockholm Convention.” Yet, DBDPE is not listed as a POP under the Stockholm Convention. ECCC also cites meeting the goals of the Great Lakes Water Quality Agreement as a justification for its proposed risk management measures, even though DBDPE is not listed as a Chemical of Mutual Concern as part of the agreement. Accordingly, neither rationale justifies the proposed risk management measures.

Last, the Final Screening Assessment of DBDPE (the “Final Screening Assessment”) published in the May 11, 2019 Canada Gazette, Part I, as well as the Proposed Order to add the substance to Schedule 1 of the Canadian Environmental Protection Act, 1999 published in the June 29, 2019 Canada Gazette, Part I Notice, and the subsequent draft Regulation are inconsistent with the U.S.-Mexico-Canada Agreement (USMCA), which requires a risk-based approach to chemical regulations.

Any risk management measures for DBDPE need to align with other national and international regulatory bodies and with international agreements to avoid potential unintended consequences that could negatively affect Canadian consumers and businesses operating in Canada.

Draft Regulations are in Conflict with the U.S.-Mexico-Canada Agreement

The proposed Regulations would allow a manufacturer or importer of DBDPE to continue their activities for 5 years following the publication of the final Regulations if the import, sale and use of the DBDPE is in the form of pellets or flakes and is for the manufacture of wire and cable products. While this exemption will allow Canadian manufacturers of wire and cable to import and use DBDPE-containing polymers compounds, wire and cable containing DBDPE that is manufactured outside Canada will not be permitted to be imported or sold into Canada, even product originating from the U.S. or Mexico. This is not only illogical since DBDPE in finished wire and cable form posed no greater risk than in pellet form, but it also constitutes a restraint of trade under the USMCA. If the ECCC proceeds with this ban, finished wire and cable products from the U.S. or Mexico should be given the 5-year exemption similar to the compounded pellets and flakes.

Proposed Risk Management Measures May Lead to Supply Chain Disruptions

Product manufacturers operate in a global regulatory environment and must consider a broad range of product safety and design factors. This includes considerations related to product certification, performance, use and end of life, and even chemical registration. These regulatory, design, and performance requirements are addressed through a complex global supply chain for components and subcomponents.

A 2020 socioeconomic study commissioned by ECCC on DBDPE in the Canadian market noted that “at this time, effective fully tested alternatives are not currently known for many critical applications.” ECCC suggests that its consultations with industry stakeholders have helped it develop permits and exemptions to address the lack of available alternatives to DBDPE. However, these permits and exemptions are insufficient in addressing the lack of available alternatives for DBDPE. ECCC notes several times during the draft Regulation that there is a lack of certainty regarding cost and availability of alternatives to DBDPE for some critical applications, and consequently that compliance costs have not been accurately estimated for proposed risk management measures affecting wire and cable, automotive products, and other applications.

The engineering and certification of products is a time-consuming process that can take years, and there are considerable financial costs involved in this effort. SACO AEI Polymers Inc. designs products to meet relevant safety standards and to be safe when used as intended. Given the lack of available alternatives for DBDPE and unknown costs of compliance with the regulatory proposal, ECCC must revise its approach in regulating DBDPE to avoid disruptions to an already overburdened supply chain.

The substitution or replacement of DBDPE in power cable insulation products involves the evaluation, testing, and approval of other halogen-containing alternates and is expected to take a minimum of 5 years to complete. Full approval of halogen-containing alternatives through the UL and/or CSA process would cost SACO at least \$500,000 in direct certification costs, not including the thousands of person-hours internally devoted to this process. Even more significant indirect certification costs would be borne by the wire and cable manufactures, likely into the millions of dollars. Alternatives that are free-of-halogens are many years away from commercialization because of technical issues of reduced performance and efficacy. From the standpoint of wholesale replacement of DBDPE in the industries and products in which it is used,

shortages of those alternatives would be expected for many years until global production capacity was converted and was able to meet the new demand.

Final Screening Assessment for DBDPE Ignores the “Weight of the Evidence”

Section 76.1 of Canada Environmental Protection Act (CEPA) requires equal weight in the application of both the weight of evidence and the precautionary principle in conducting the evaluation of the scientific evidence relating to a particular substance. Section 76.1 does not give precedence to either of these two principles. The application of the precautionary principle is not stated or intended to govern decision-making.

The conclusion reached in the Final Screening Assessment that DBDPE has the potential to transform into lower brominated products that could pose a risk to aquatic organisms conflicts with the proper application of the weight of evidence approach and has not been substantiated. ECCC reached its conclusion regarding the potential for breakdown of DBDPE based on a theory that the DBDPE would behave in the same way as another flame retardant, decabromodiphenyl ether (decaBDE). That conclusion is inconsistent with the available evidence on DBDPE.

The approach taken by ECCC is contrary to the statutory requirement to apply the weight of evidence approach. DBDPE is very different scientifically and structurally than decaBDE. Thus, the use of decaBDE as a proxy for DBDPE in computer modelling to draw this conclusion of potential breakdown products in the absence of any supporting studies is not appropriate and based on faulty assumptions given their different molecular structures.

The Conclusions of the Final Screening Assessment upon which the Proposed Risk Management Measures for DBDPE Rely is not Supported by the State of the Science

ECCC notes for the Final Screening Assessment that “given the available information on potential human health effects, DBDPE is not a concern for human health.”¹ A comprehensive list of 50 analytical, toxicological, environmental, and pharmacological studies were conducted on DBDPE to evaluate its safety and to register as appropriate in other jurisdictions. These studies were provided to ECCC through the assessment process to assist in the evaluation of this substance. The state of the science as demonstrated by these studies does not support a conclusion that would justify the proposed risk management measures.

In addition to the studies discussed above, there is new scientific information since publication of the Final Screening Assessment in May 2019 that was not available and therefore not evaluated by ECCC or HC during the Screening Assessment. This additional scientific information provides a sufficient justification for the Minister to reconsider the conclusion reached in the Final Screening Assessment that DBDPE is “toxic” under CEPA.

First, in November 2020, an independent third-party review was provided to ECCC of the available scientific reports, as well as the draft and final screening assessments, for the purpose

¹ ECCC, Decabromodiphenyl Ethane (DBDPE) – Information Sheet, <https://www.canada.ca/en/health-canada/services/chemical-substances/fact-sheets/chemicals-glance/decabromodiphenyl-ethane.html#a5.1>.

of providing an opinion on the validity of the approach taken and conclusions reached by ECCC with respect to DBDPE. Below are several of the conclusions from the independent review:

- DecaBDE is not a good read-across substance for the purpose of estimating the rate of potential debromination of DBDPE;
- Guidelines and recommendations for applying a read-across approach exist but were not adequately followed by ECCC in the Final Screening Assessment; and,
- The Final Screening Assessment does not include evidence to substantiate that lower-form DBDPE products enter the environment in a quantity or concentration that have or may have an immediate or long-term harmful effect.

Second, the National Academy of Sciences, Engineering, and Medicine (“NAS”) published a study report² in May 2019 to determine if organohalogen flame retardants (“OFRs”) – which includes DBDPE – could be divided into subgroups based on similar chemical structures or physicochemical properties for the purposes of further assessment. NAS recommended dividing 161 OFRs into 14 subclasses. It is noteworthy that in the study, NAS grouped DBDPE and decaBDE into separate subclasses. This finding further supports the position that it is not appropriate to use decaBDE as a surrogate for DBDPE to draw any conclusion regarding potential breakdown products in the absence of supporting studies.

Third, the results of a 2,000-hour study modelling the photodegradation of DBDPE within high impact polystyrene (HIPS) and polypropylene (PP) in the Canadian environment has been shared with ECCC. Conclusions from that study are that DBDPE has a long half-life under realistic photodegradation conditions, any formation of lower brominated products from DBDPE is negligible and are not the species of concern expressed by ECCC, and lower form brominated products can be prevented with the help of ultraviolet absorption and light stabilizers.

Can the Minister of the Environment, respectfully, answer why a requirement for the use of UV stabilizers/absorbers was not chosen over the approach of outright banning the suspected UV-sensitive compound (DBDPE) instead?

The 50 studies previously shared with ECCC, along with new information that has been shared with ECCC since publication of the Final Screening Assessment, does not support either the finding that DBDPE is “toxic” under CEPA or the proposed risk management measures.

Based upon the facts and arguments set out above we ask the Minister to appoint a Board of Review to “inquire into the nature and extent of danger” posed by DBDPE.

² National Academies of Sciences, Engineering, and Medicine. 2019. A Class Approach to Hazard Assessment of Organohalogen Flame Retardants. Washington, DC: The National Academies Press. doi: <https://doi.org/10.17226/25412>.

Sincerely,

Colin Harrison

A handwritten signature in black ink that reads "Colin J. Harrison". The signature is written in a cursive style with a large, stylized "J" and "H".

Product Manager – Wire & Cable
SACO AEI Polymers