

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) 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:

GTS Flexible Materials Ltd (GTS) writes to express our formal objection to the above-referenced regulatory proposal. GTS designs and manufactures cast adhesives, insulation tapes and laminate products for use in EV, Automotive and Power distribution applications. GTS depends on DBDPE as it is the only material identified that can give the adhesion, temperature and humidity stability and stringent fire safety requirements which mandatory in the Automotive and power distribution marketplace. The Canadian Automotive market is a key industry responsible for the sale of 1.7 million Vehicles annually, contributing sales of 14 billion Canadian dollars per month to the economy, and 38,000 jobs directly in the motor vehicle manufacturing industry.

GTS Flexible Materials Ltd has no ties or commercial interests in the brominated flame retardant industry, and has aspirations to offer halogen free and sustainable products to its customer base. GTS currently uses DBDPE as it is the only additive than can give the best in class UL94 VTM-0 classification to its tapes and laminates. Our trials with halogen free alternatives give VTM-2 classification to our assemblies which maintain flame and produce molten burning drips upon ignition which are unacceptable to our automotive customers and OEMs, and we consider to be a serious risk to consumer safety in result of an electrical failure. Other additives produce failures for temperature and humidity aging, interacting with adhesive chemistries in a negative way which could also compromise the safety and reliability of parts made with potential replacement flame retardants. GTS has also partnered with Research Institutes who have reached the same conclusions that there is a clear lack of available alternatives that can give the performance our customers need.

In our view the proposed exemption for 5 years from publication of the final regulations for automotive and EEE markets, and 20 years for replacement parts, is totally inadequate for automotive qualification. Based on our trials we have not identified an alternative adhesive that gives comparable performance, and even if samples were provided today for qualification, minimum qualification time needed for our OEMs and end customers would be 8 years, and there are new projects due to come on stream continually which would face disruption during the 8 year life cycle, which could prove catastrophic for the industry with large economic consequences. We desperately need your support in terms of a longer exemption for Automotive and EEE, our suggestion is a 10

year exemption minimum is needed, and even then we will require new flame retardant additives to come on stream to meet our strict safety requirements, with a suitable follow up period of 20 years for replacement parts.

As provided for by section 332(2) of CEPA 1999, GTS Flexible Materials Ltd 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 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 not just consumer devices and appliances, but also include airplanes and motor vehicles. In the absence of alternatives, the prohibitions pose a genuine risk of increasing flammability of those products therefore creating a severe risk to public health and safety.

GTS has a grave concern regarding the safety of commonly used halogen free flame retardants, which give a UL94 V/VTM 2 rating of two classes lower than our DBDPE materials, where propagation of flame and burning drips which can ignite surrounding environment instantaneously, and we fear that this could be a regrettable substitution with the unintended consequences of putting lives of consumers and first responders in danger whose lives would have been saved by DBDPE.

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.

Particularly with regard to DBDPE and decaBDE in the context of the Stockholm Convention, clearly decaBDE has been identified as a POP yet will be free to be supplied in replacement parts until 2036, where its use is already reduced dramatically worldwide due to its restriction under REACH and RoHS, so clearly ECHA and Stockholm convention have concluded this is a more harmful substance than DBDPE.

DBDPE is, in our industry and many others a drop in replacement for decaBDE with a greener environmental profile, and we feel a more environmentally favourable approach would be for the phase out of decaBDE in favour of DBDPE as a start point with a sound environmental chemistry context and international alignment.

It seems to completely undermine the scientific rationale that the internationally restricted and largely phased out decaBDE, restricted under RoHS, REACH and a POP, will be able to be used for replacement parts for 8 years following the withdrawal of DBDPE from production of new cars, and international supply of pallets containing harmful decaBDE to Canada will continue indefinitely. DBDPE is not restricted under RoHS or REACH and is not a POP under the Stockholm convention, and we suggest that encouraging the transition from decaBDE to DBDPE as a stepping stone is a sound argument both for business and for environmental reasons, minimising economic disruption while continuing to meet the requirements of the Stockholm convention.

Proposed Risk Management Measures May Lead to Supply Chain Disruptions

Product manufacturers operate in a global regulatory environment and must take into account 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.” GTS testing agrees with this assessment and informs that there is no readily available alternative for continued supply of its products. 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 data and certainty regarding cost and availability of alternatives to DBDPE for some critical applications, and consequently that compliance costs have not been 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. GTS design 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.

Given the worldwide ambitious commitments for Net Zero, including a target of 2050 in Canada, I would seriously question the green rationale for restriction of DBDPE at this time. Given the need for extensive resources of research and development, testing, certification and qualification by OEM's of replacement parts to those already used in EV manufacture (assuming these

replacements are even achievable with halogen free alternatives), the restriction of DBDPE and delay in EV rollout could directly contribute to a failure to hit Net Zero targets not just in Canada but worldwide. Given the large question marks over any tangible benefit to the Environment over DBDPE restriction, the electrification of the transport network should be allowed proceed unhindered, and any distraction caused by a restriction of DBDPE could slow down the path to net zero and directly contribute massive and irreversible climate change globally, which is a very real environmental phenomenon almost universally accepted, in contrast.

It is also clear that production of halogen free flame retardants particularly those using phosphorus chemistries is a hugely energy intensive process with highly toxic by products, which cannot be recycled, so there are question marks over the environmental credentials of possible substitutes. This may compromise programmes such as the EU WEEE directive encouraging the recyclability of automotive parts. It is possible that DBDPE may be the greener alternative with a more favourable environmental profile, the substitution DBDPE could in fact have unintended negative effects on the Canadian Environment.

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 any 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

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>.

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 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.

Specific to GTS’s products, our automotive parts are used exclusively in under the hood/ internal applications where the exposure to UV light is negligible, so we believe any risk of debromination by photodegradation is virtually impossible considering the end use in application. Parts are also chemically bound into a thermoset polymer matrix and are not free to leach to the environment, so

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>.

we believe any environmental risk to the environment of GTS products is fundamentally at odds with the screening assessment. At end of life parts are typically either recycled (possible due to the high thermal stability of DBDPE, in contrast to halogen free additives that cannot be recycled) or disposed of in landfill, with similarly low to negligible risks of photodegradation.

Given the obviously safety risks given the potential regrettable substitution of DBDPE parts with halogen free alternatives that cannot achieve fire safety standards putting consumers and first responders lives at increased risk, it is crucial that the scientific rationale for the restriction of DBDPE be proven beyond reasonable doubt. The arguments so far presented thus far center around computer modelling of possible photodegradation to of a completely different molecule (decaBDE), which has failed to be replicated for DBDPE in a single real world study, this hardly seems a sound justification for the very real increased risk to life for Canadian consumers and First Responders posed by current halogen free flame retardants.

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 including woefully insufficient timescales for requalification of DBDPE parts in automotive and EEE applications, the very real dangers posed by regrettable substitution, and the questionable scientific justification for the restriction and new evidence that come to light, we ask the Minister to appoint a Board of Review to "inquire into the nature and extent of danger" posed by DBDPE.

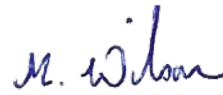
Yours sincerely,



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13/07/22