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January 19, 2017

The Honourable Catherine McKenna
Minister of Environment and Climate Change
Environment and Climate Change Canada
200 Sacré-Coeur Boulevard
Gatineau QC K1A 0H3

Transmission by email: ec.ministre-minister.ec@canada.ca

Dear Minister McKenna,

RE: Response to Microbeads in Toiletries Regulations - *Canada Gazette Part I* (Vol. 150, No. 45 – November 5, 2016)

The Canadian Environmental Law Association (CELA), Chemical Sensitivities Manitoba, Prevent Cancer Now, Citizens' Network on Waste Management and Ontario Rivers Alliance are responding to the consultation website "Proposed Regulations - Microbeads in Toiletries Regulations," issued by Environment and Climate Change Canada, November 5, 2016 and published in *Canada Gazette Part I (Vol. 150, No. 45 – November 5, 2016)*.^{1,2} We also provided comments to the February 9, 2016, consultation document, "Proposed Regulations for Microbeads in Personal Care Products Used to Exfoliate or Cleanse," issued by Environment and Climate Change Canada (ECCC).³

Several issues we highlighted in the first consultation document have been addressed in the proposed regulations (e.g., microbead size range). However, there are significant gaps in the scope of the regulations that need to be addressed. The commentary and

¹ Environment and Climate Change Canada. November 5, 2016. Proposed Regulations - Microbeads in Toiletries Regulations. Accessed at <https://www.ec.gc.ca/lcpe-cepa/eng/regulations/DetailReg.cfm?intReg=238>

² Government of Canada. Microbeads in Toiletries Regulations. *Canada Gazette Part I (Vol. 150, No. 45 – November 5, 2016)*.

³ Response to the Consultation Document: "Proposed Regulations for Microbeads in Personal Care Products Used to Exfoliate or Cleanse" issued by Environment and Climate Change Canada. February 9, 2016. <http://www.cela.ca/sites/cela.ca/files/Microbeads.pdf>

recommendations provided in this submission aim to improve the scope of the proposed regulations on plastic microbeads in selected products.

In the November 7, 2016 document, the government proposed regulations that would prohibit the manufacture, import, sale or offer for sale of toiletries that contain plastic microbeads, including non-prescription drugs and natural health products.⁴ Plastic microbeads include any plastic particle equal to or less than 5 mm in size, of various chemical compositions, shapes and densities. Toiletries include products used for exfoliating or cleansing such as bath and body products, skin cleansers and toothpaste, but do not include prescription drugs.

While we welcome the proposal by the government to regulate plastic microbeads in toiletries, natural health products and non-prescription drugs, there is a significant and growing body of evidence indicating concerns with the overall presence of plastic microbeads from all sources, in the aquatic environment. Therefore, the proposed regulations are limiting with respect to the scope of the products. This limitation will result in ongoing releases of plastic microbeads to the environment, with subsequent impacts to the environment and wildlife that are not yet fully explored and understood.

The following are comments and recommendations related to the consultation document: “Proposed Regulations - Microbeads in Toiletries Regulations”.

SPECIFIC CONCERNS, COMMENTS & RECOMMENDATIONS

Timelines for the proposed regulations

The prohibition of the manufacture, import, sale or offer for sale, of exfoliating or cleansing toiletries that contain plastic microbeads is scheduled to take effect on January 1, 2018 but for natural health products and non-prescription drugs, the effective date is July 1, 2018. The different timelines, as currently proposed, are insufficiently justified – there has been sufficient time for the affected industries to find safe alternative substances; microbeads are being banned earlier in other jurisdictions. Some personal care products and toothpaste manufacturers have been proactive and have already eliminated plastic microbeads in their products.

In the proposed regulations, there is no mention of the export of plastic microbeads. The proposed regulation should be explicit to ensure that the export of plastic microbeads or products containing plastic microbeads in cosmetics, natural health products and non-prescription drugs (e.g. toothpaste), be prohibited. This approach is a positive step towards the protection of the environment elsewhere and it would benefit

⁴ Environment and Climate Change Canada. November 7, 2016. Proposed Regulations - Microbeads in Toiletries Regulations. Accessed at <https://www.ec.gc.ca/lcpe-cepa/eng/regulations/DetailReg.cfm?intReg=238>

the efforts of other jurisdictions facing similar environmental problems from products containing microbeads.

Importantly, the US is banning the use of microbeads in personal care products as of July 1, 2017.⁵ If Canada does not act in synch with the US, we run the risk of “dumping” of illegal, toxic products at greatly discounted prices on Canadian store shelves prior to the proposed date of January 1, 2018, when the ban will go into effect for Canada. Initially, our groups had recommended that a ban for plastic microbeads be in place after December 31, 2017.

In light of the gap in the phase out dates set in US and Canada, there is the potential of movement of products containing microbeads from US to Canada markets. To address this difference in the phase out dates, Canada should be prepared to strengthen its enforcement and inspection regimes from the proposed approach as well as initiate recall strategies for products targeted under the regulation to ensure that such products are not available on the market when the regulations are in force.

Recommendations:

- *We recommend that plastic microbead-containing toiletries, natural health products and non-prescription drugs (e.g. toothpaste), all have the same timeline for the prohibition of manufacture, import, sale or offer for sale, and that the date be closely harmonized with the US scheduled date for July 1, 2017.*
- *We urge the government to ensure that the proposed regulations also include the prohibition of export of plastic microbeads and microbead-containing toiletries, natural health products and non-prescription drugs.*
- *We urge the government to strengthen its enforcement and inspection regime and initiate recall strategies to ensure that regulated products containing plastic microbeads are not available in the Canadian market after the regulation is in force.*

Laboratory standards - presence of plastic microbeads

The proposed regulation identifies that the presence of plastic microbeads in products is to be determined using an accredited laboratory to ensure that laboratory testing is performed to acceptable quality standards, but the regulation lacks relevant details, including the roles of the accredited laboratory and the government in defining methodologies and determining acceptability of analytical standards. For transparency, some relevant details are essential.

⁵ US Energy and Commerce Committee. <https://energycommerce.house.gov/news-center/press-releases/breaking-bipartisan-bill-banthebead-now-law#sthash.YJJa0C9E.dpuf>

It is also proposed that this information will serve to inform the regulated community of the laboratory standards that will be used to determine the presence of plastic microbeads or to verify compliance with the regulatory provisions. Clarification is required as to how the regulated community will be informed of these laboratory methods and standards, for both analytical performance and product contents. Co-ordinated efforts are essential when there is a phase-out of a substance and for verification of compliance with the regulation.

Recommendation:

- *We urge the government provide relevant details regarding methodology, quality standards and testing for plastic microbeads. This includes clarifying the roles of the accredited laboratory and the government in defining methodologies, quality standards and product content standards, and how this information is then communicated to the regulated community.*

Surveillance and monitoring programs for microbeads

The government approach to regulate microbeads should be undertaken with ongoing commitment to the monitoring and surveillance of microbeads in the environment. It is a particularly important aspect to evaluate the effectiveness of the regulation and this may also identify new sources of microbeads that require additional attention.

Recommendation:

- *We urge the government to require systematic tracking and reporting through environmental monitoring to assess the efficacy of the regulation and potentially identify other sources of microbeads and/or microplastics in the environment, requiring attention.*

Exclusions should be addressed

There are other consumer and industrial products that are potential sources of plastic microbeads or micro-sized materials (e.g. commercial and consumer cleaning and polishing products, anti-slip coatings - using different materials) that may reach the environment in all parts of Canada including water bodies such as the Great Lakes, to far northern lakes, and rivers. This adds to the growing list of contaminants in those environments, although the present contribution of plastic microbeads or micro-sized materials from these products is significantly lower than the combined contributions from toiletries, natural health products and non-prescription drugs. This is a significant gap in the proposed regulations. Like other plastic microbead-containing products, they also all have the potential to contribute to terrestrial pollution through the use of sludge from waste water treatment plants. Regulatory measures would be an effective

approach to address these categories rather than voluntary measures which may not yield the adequate response from manufacturers, and other stakeholders in the supply chain, necessary to improve environmental protection.

Recommendation:

- *We urge the government to advance regulatory measures to prohibit use of microbeads in consumer and industrial products yet to be addressed by the proposed regulation.*

Alternative substances

Currently, there are alternatives to plastic microbeads on the market for the products listed in the proposed regulation; however, biodegradable forms of microbeads as potential substitutes, if under consideration by the government, should be avoided. One potential area of concern is the breakdown period of these materials in lower temperatures that would be experienced in many aquatic bodies in Canada. The government should require that all alternatives for plastic microbeads be tested for environmental and human health hazards before they are used in consumer and other products

Recommendations:

- *Require that alternatives for plastic microbeads be tested for their persistence, interactions (e.g., accumulation of toxicants) and toxic effects to the environment and human health before being used in consumer products, including toiletries, natural health products, non-prescription drugs, and other products.*
- *Exclude purportedly biodegradable forms of plastic microbeads as suitable alternatives.*

Potential stockpiles of microbeads

While the intent of the proposed regulations is laudable, the absence of consideration of the full lifecycle of these products will mean that the environmental problems associated with plastic microbeads will not be fully addressed. For example, the prohibition of plastic microbeads in target products may result in the possibility of stockpiles of these products and their subsequent disposal management.

From the proposed regulations, it is not clear if companies will be required to collect the regulated products that contain plastic microbeads for safe disposal, if they have not been sold at the time the regulations come into force. If such plans are not in place, there are opportunities for these products to be exported, and when used, they would contaminate the environment elsewhere. Canadian companies should be responsible for their products throughout their full life cycle, from design to end of life, regardless of whether they are sold in Canada or beyond the Canadian border. Furthermore, actions

to support the phase out should require companies to remove products from store shelves and establish effective take back programs to encourage consumers to return products to the store (for refund) for proper disposal management.

Recommendation:

- *The government should provide additional commentary and measures on management activities to address stockpiles of plastic microbeads and the products proposed to be regulated containing plastic microbeads. The government approach should also require companies to remove products from store shelves and establish effective take back programs to encourage consumers to return products (for a refund) and suggest proper disposal of these products for consumers.*

Plastic microbeads, microplastics and human health

Further to our comments to the February 9, 2016 consultation document, we again stress that the government must formally recognize the potential problems associated with toxic chemicals absorbed by the plastic microbeads, as well as microplastics.

Persistent organic pollutants such as polychlorinated biphenyls (PCBs), perfluorooctanesulfonic acid (PFOS), and polybrominated diphenyl ethers (PBDEs), among other pollutants, have been detected in the waters of the Great Lakes.⁶ Some of the pollutants have also been detected in fish from the Canadian waters of the Great Lakes.⁷ They also have the potential to be absorbed by plastics microbeads.

These toxic chemicals have been recognized as persistent organic pollutants under the Stockholm Convention on Persistent Organic Pollutants and are subject to global actions for elimination and restriction. In addition, these toxic chemicals have been recommended as chemicals of mutual concern under the Great Lakes Water Quality Agreement Annex 3.⁸ A number of NGOs in the Great Lakes Basin, including the Canadian Environmental Law Association (CELA), also listed these chemicals as emerging chemicals of concern in the Great Lakes Basin and have called for necessary binational measures to address the sources of these toxic chemicals.⁹

⁶International Joint Commission – Great Lakes Regional Office. <http://www.ijc.org/php/publications/pdf/ID696.pdf>

⁷ Environment Canada 2011. Monitoring contaminants in fishes from the Canadian waters of the Great Lakes: 1977 to 2009 – PCBs to PBDEs. <http://www.cvg.ca/Presentations/2011/McGoldrick%20et%20al%20-%20CVG%202011.pdf>

⁸ Great Lakes Executive Committee. June 2015. Meeting Summary. http://binational.net/wp-content/uploads/2015/12/GLEC-Summary-06-2015-final_en.pdf

⁹ Canadian Environmental Law Association & Lowell Centre for Sustainable Production. 2009. The Challenge of Substances of Emerging Concern in the Great Lakes Basin: A review of chemicals policies and programs in Canada and the United States. <http://www.cela.ca/sites/cela.ca/files/667IJC.pdf>

In the marine environment, the pollutants are similar. Another category of concern is metals which have been detected absorbed to plastic debris in a marine environment.¹⁰

As the plastic microbeads absorb pollutants in freshwater and the marine environments, the rate of absorption will likely depend on factors such as the type and complexity of the plastic and the hydrophobicity of the pollutant, among other factors. The actual properties of the absorbed pollutants are important – they can be persistent, bioaccumulative and toxic. Some are carcinogenic and show properties of endocrine disruption. Also of concern are the properties of the chemicals that are leached from the microspheres.

For those who eat fish and shellfish, the presence of plastic microbeads with absorbed pollutants in these marine organisms, could impact food safety.¹¹ This would also be applicable to fresh water bodies that are contaminated with plastic microbeads.

The end result is not only the ingestion of the plastic microbeads by aquatic organisms but the subsequent ingestion of this fish and shellfish up the food chain, by wildlife and humans. Although there is limited information on the potential effects on human health through the consumption of fish and shellfish containing contaminated plastic microbeads or contaminants leached from contaminated microbeads, the government should not adopt a “wait and see” approach on this issue. It is recognized that existing microspheres in the aquatic bodies that support the food we eat, cannot be easily removed.

Plastic microbeads and microplastics have received less attention in terrestrial environments, for reasons of research practicalities more than merits of concerns.¹² Plastic microbeads, microplastics and fibres escape from sewage plants resulting in aquatic pollution, although some of this material is retained in sludge. Subsequent application of this sludge to farmland with the microplastics and their toxicant accumulation, may impact soil organisms (e.g. earthworms¹³) and move up food chains, much as in aquatic systems.

Recommendations:

- *The government should develop a comprehensive approach focused on the prohibition of plastic microbeads in all consumer applications to prevent the*

¹⁰ Rochman CM. et al. Long-Term Sorption of Metals Is Similar among Plastic Types: Implications for Plastic Debris in Aquatic Environments PLoS One. 2014; 9(1)

¹¹ Plastics in the marine environment: the dark side of a modern gift. Hammer, J., Kraak, M.H., Parsons, J.R. Reviews of Environmental Contamination and Toxicology, 2012; 220: 1-44

¹² Rillig MC. Microplastic in Terrestrial Ecosystems and the Soil? Environ. Sci. Technol., 2012, 46 (12), pp 6453–6454 DOI: 10.1021/es302011r

¹³ Microplastics in the Terrestrial Ecosystem: Implications for *Lumbricus terrestris* (Oligochaeta, Lumbricidae). Lwanga et al., *Environ. Sci. Technol.*, 2016, 50 (5), pp 2685–2691.

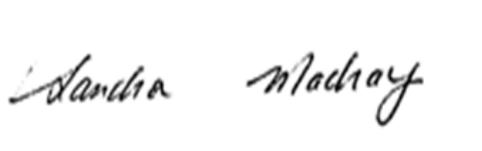
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continued buildup of microbeads, along with the concentration of toxic chemicals by plastic microbeads in the environment.

- *The government should develop an on-going monitoring and public reporting program on the presence of plastic microbeads and the absorbed chemicals in the environment, including in fish and shellfish.*
- *The government should continue monitoring scientific data on the possible health implications of the ingestion of fish and shellfish that are contaminated with plastic microbeads, particularly in communities that rely on this food as a main part of their traditional diet.*

If you have questions regarding the comments and recommendations presented in this submission, please contact us at the information below.

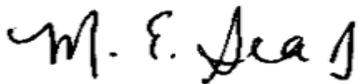
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