



March 10, 2016

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*

Dear Minister McKenna:

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 document "Proposed Regulations for Microbeads in Personal Care Products Used to Exfoliate or Cleanse," issued by Environment and Climate Change Canada, dated February 9, 2016.

As a result of a science review of the impact of microbeads on the environment, Environment Canada concluded that microbeads are toxic to the environment under subsection 64(a) of the *Canadian Environmental Protection Act, 1999* (CEPA 1999), as they are entering or may enter 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.<sup>1</sup> Subsequent to this, there was a proposed order to add microbeads on the List of Toxic Substances (*Canada Gazette, Part 1*) on August 1, 2015).<sup>2</sup>

Also, a Note of Intent was published in August, 2015, stating that Environment Canada is initiating the development of proposed regulations under CEPA 1999 to prohibit the manufacture, import, sale or offer for sale of microbead-containing personal care

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<sup>1</sup> Environment Canada (EC). 2015. Microbeads – A Science Summary.  
<http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=ADDA4C5F-1>

<sup>2</sup> EC. August 2015. Order Adding a Toxic Substance to Schedule 1 to the *Canadian Environmental Protection Act (CEPA) 1999*.  
<http://gazette.gc.ca/rp-pr/p1/2015/2015-08-01/html/reg1-eng.php>

products that are used to exfoliate or cleanse, with proposed regulations to be developed for pre-publication in the *Canada Gazette*, Part I, in 2016.<sup>3</sup>

As indicated in the proposal, “A personal care product is defined as a substance or mixture of substances that is generally recognized by the public for use in daily cleansing or grooming. Depending on how the product is represented for sale and its composition, personal care products may fall into one of three regulatory categories in Canada: cosmetics, drugs or natural health products.” The proposal delays regulation of non-prescription drugs and natural health products until 2018. As well, this regulatory proposal does not address the use of microbeads in other consumer products and industrial applications.

While we welcome the proposal by the government to regulate the use of microbeads in some selected products as a response to the growing evidence of the problems associated with such substances in the aquatic environment, clearly there are limitations to the proposed regulations. These limitations will result in ongoing releases of microbeads to the environment, with subsequent toxic impacts to the environment and wildlife that are not yet fully known and understood.

The following are comments and recommendations related to specific areas of the consultation document: “Proposed Regulations for Microbeads in Personal Care Products Used to Exfoliate or Cleanse”.

### **Areas of concern & recommendations**

#### **▪ Defining the particle size range for microbeads**

Microbeads were proposed for addition to Schedule 1 of CEPA 1999 on August 1, 2015, as “Synthetic polymer particles that, at the time of their manufacture, are greater than 0.1 µm and less than or equal to 5 mm in size”. The alternative definition as stated in the proposed regulation is as follows: “Plastic microbeads that are > 0.5 µm but ≤ 2 mm in size.” Further clarification is expected to be published when the final order to add microbeads to Schedule 1 is issued.

The rationale for the changes to the lower and upper limits (narrowing of the range) for microbeads in this application are inadequate and further information is required before a decision on whether the size range captured by the proposed regulations will be adequate. The “Microbeads - A Science Summary” (EC, 2015) document indicates that the upper limit of 5 mm was based on a value used in research and by other jurisdictions and was also indicative of expert opinion from a workshop on marine debris held in 2008 for secondary microplastics (Arthur et al., 2009).<sup>4</sup> The Science Summary also explains the rationale for the initial choice of the lower limit at 0.1 µm. Other

<sup>3</sup> EC. August 2015. Notice with respect to microbeads in certain personal care applications under *CEPA 1999*. <http://gazette.gc.ca/rp-pr/p1/2015/2015-08-01/html/notice-avis-eng.php#na2>

<sup>4</sup> Environment Canada (EC). 2015. Microbeads – A Science Summary. <http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=ADDA4C5F-1>

jurisdictions which have passed legislation to phase out microbeads in cosmetic products include the US which passed the “Microbead-Free Waters Act of 2015” and targeted microbeads as “...any solid plastic particle that is less than five millimeters (mm) in size ...”<sup>5</sup> Similarly, the US States of California and Illinois apply the same size range of less than 5 mm in their respective legislations.<sup>6,7</sup> The proposed size range for the Canadian regulations is not fully inclusive of a wider range of microbead sizes that are used in the targeted products under this proposed regulation. This will result in a substantially weaker regulation that could possibly exacerbate the on-going problems associated with microbeads in products. If the government’s intent is to stop the dispersal of small, persistent plastic particles, including microbeads, then a broader, more inclusive particle size range would be preferable (within reason). Possible pressure from some stakeholders to narrow the range could suggest that some may attempt to reconfigure plastic microbeads rather than stopping their use.

### Recommendation:

- *The proposed size range of microbeads to be addressed through the proposed regulations is not adequate. At a minimum, the regulations should capture the particle size range up to 5 mm. A broad size range would ensure that materials just outside of the regulated range do not replace newly-banned particles. It is particularly critical that the proposed regulation apply precaution in the selection of a broad range of particle size for microbeads.*

- **Scope of the proposed regulations and timelines**

- a) The scope of the proposed regulations focusing on personal care products for cleansing and exfoliation with delayed action on drugs is considered too narrow and slow for several reasons:

- Non-prescription drugs

Companies manufacturing non-prescription drugs such as toothpaste have already voluntarily initiated the removal of microbeads in their products as well as in their personal care products.<sup>8,9</sup> As a result, it would be appropriate that the category of non-prescription drugs (including toothpastes) be included with personal care products used for cleansing and exfoliation and be subject to the same phase out timelines (for manufacture, import, sale, or offer for sale). Additionally, any delay of regulations may result in Canada receiving unwanted products containing microbeads from other jurisdictions that have banned microbeads.

<sup>5</sup>Microbead-Free Waters Act of 2015. Public Law No: 114-114 (12/28/2015). <https://www.congress.gov/bill/114th-congress/house-bill/1321/text>

<sup>6</sup> California Legislative Information (2015-2016) [https://leginfo.ca.gov/faces/billCompareClient.xhtml?bill\\_id=201520160AB888](https://leginfo.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160AB888)

<sup>7</sup> Public Act 098-0638. <http://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=098-0638>

<sup>8</sup> Microbeads. Proctor and Gamble (P&G). Accessed March 5, 2016.

[http://us.pg.com/our\\_brands/product\\_safety/ingredient\\_safety/microbeads](http://us.pg.com/our_brands/product_safety/ingredient_safety/microbeads)

<sup>9</sup> Beat the microbead. International Campaign Against Microbeads in Cosmetics. 2016. Accessed March 4, 2016. <http://www.beatthemicrobead.org/en/industry>

- Other consumer and industrial products containing microbeads

Consumer products (anti-slip coatings) and industrial products (anti-slip and abrasion) with synthetic beads (not naturally occurring materials), are all potential sources of microbeads that may reach the environment in all parts of Canada including waterbodies such as the Great Lakes, far northern lakes, and rivers. This adds to the growing list of contaminants in those environments. Although the contribution of microbeads from these products may not be as high as the combined contribution from personal care products and non-prescription drugs, these categories require government consideration. In addition, there has been no consideration of the potential growth in application of these products, and therefore, regulatory measures are necessary to deter the use of such products. Like other microbead-containing products, they also all have the potential to contribute to terrestrial pollution through the use of sludge from waste water treatment plants.

### **Recommendations:**

- *For efficiency in the proposed regulations and improved environmental protection, we recommend that the proposed regulations address personal care products used for cleansing and exfoliation and non-prescription drugs that contain microbeads together, for further action.*
- *At this time, we do not support the exclusion of regulatory measures to phase out microbeads in other consumer and industrial products. Furthermore, voluntary measures, if under consideration to address other products, would be inadequate to address this gap in the proposal.*

### b) Timelines / coming into force for the proposed regulations

The timelines as outlined in the proposed regulations for personal care products used for cleansing and exfoliation and non-prescription drugs should be combined so that they have common timelines, and an earlier phase out of microbeads should take place. The different timelines, as currently proposed for phase out, are insufficiently justified. The long phase out times proposed for regulatory actions in Canada will result in ongoing releases of microbeads and negative impacts to the receiving environment.

Also, there should be no distinction in timelines between prohibiting the manufacture and import, and the prohibition of sale or offer for sale of microbead-containing personal care products, including cosmetics that are used to exfoliate or cleanse. The same applies for non-prescription products. Since some companies have already started the elimination of microbeads from their products, the phase-out period has essentially been voluntarily initiated. These voluntary approaches are simply inadequate and unacceptable because they cannot guarantee that all producers and sellers will fulfill their commitments, compared to the certainty of regulatory measures to prohibit such substances.

In the proposed regulations, there was no mention of the export of microbeads. The proposed regulation should be explicit to ensure that the export of microbeads or products containing microbeads in cosmetics and non-prescription drugs is prohibited.

Despite the lack of available information in the public domain regarding microbeads in natural health products, a precautionary approach would be appropriate regarding their proposed phase out, as any microbeads in this products will eventually will eventually end up in the. A similar phase out date as applied to personal care products and non-prescription drugs would be appropriate for natural health products.

### **Recommendations:**

- *Microbead-containing personal care products, including cosmetics that are used to exfoliate or cleanse and non-prescription drugs should be combined into one category for the purposes of regulation.*
- *The proposed deadline of December 31, 2017 to initiate the prohibition of the manufacture and import, of personal care products is not adequate. We recommend combining the prohibition of manufacture, import, sale or offer for sale for both personal care products and non-prescription drugs and setting an earlier timeline for both. We recommend the phase out date to be scheduled for March 31, 2017.*
- *We urge the government to ensure that the proposed regulations also include the prohibition of export of microbeads and personal care products and non-prescription drug products containing microbeads.*
- *Applying a precautionary approach, natural health products should be subject to the proposed regulations at an earlier date.*

### ▪ **Alternatives to microbeads**

Currently, there are alternatives to microbeads on the market but the proposed consultation document indicated that there are reports to suggest their harshness for the application of cleansing and exfoliation. We are pleased that the consultation document does not explicitly include biodegradable forms of microbeads as potential substitutes. A suitable alternative such as a washcloth can also serve to exfoliate, so we would strenuously object to the contemplation of delaying action on plastic microbeads for lack of alternatives. The government should require that any alternatives for microbeads should be tested for environmental and human health hazards before they are used in consumer and other products.

## Recommendations:

- *The proposed measures by the government should require that alternatives for microbeads be tested for their toxicity to the environment and human health before being used in consumer products, including personal care products, non-prescription drugs, and other products.*
- *We support the exclusion of biodegradable forms of plastic microbeads as suitable alternatives.*
- **Potential stockpiles of microbeads**

The proposed regulations do not effectively address the full life cycle 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 microbeads will not be fully addressed. For any substance that will be phased out (for the majority of its applications), there is a need to address the possibility of stockpiles and their subsequent disposal management. It is not clear if companies will be required to collect all personal care products that contain 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 on management activities to address stockpiles of microbeads and the personal care products that contain microbeads, including cosmetics that are used to exfoliate or cleanse, natural health products and non-prescription drugs. This 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 proper disposal.*
- **Microbeads and human health**

The consultation document is critically lacking detail in review and discussion of the potential problems associated with the toxic chemicals absorbed by the microbeads.

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.<sup>10</sup> Some of the pollutants have also been detected in fish from the Canadian waters of the Great Lakes.<sup>11</sup> They also have the potential to be absorbed by 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.<sup>12</sup> NGOs such as 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.<sup>13</sup>

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.<sup>14</sup>

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 others. 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. The properties of chemicals that are leached from the microspheres are also of concern.

For those who eat fish and shellfish, the presence of microbeads with absorbed pollutants in these marine organisms, could impact food safety.<sup>15</sup> 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 microbeads by aquatic organisms but the subsequent human ingestion of this fish and shellfish. Although there is very limited information on the potential effects to human health through the consumption of fish and shellfish containing contaminated microbeads, the government should not adopt a “wait and see” approach for this issue. Existing microspheres in the aquatic bodies that support the food we eat cannot easily be removed.

Microplastics have received less attention in terrestrial environments, for reasons of research practicalities more than merits of concerns.<sup>16</sup> Although microbeads’ escape from sewage plants leads to aquatic pollution, substantial quantities of plastic are most

<sup>10</sup> <http://www.ijc.org/php/publications/pdf/ID696.pdf>

<sup>11</sup> 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>

<sup>12</sup> Great Lakes Executive Committee. June 2015. Meeting Summary. [http://binational.net/wp-content/uploads/2015/12/GLEC-Summary-06-2015-final\\_en.pdf](http://binational.net/wp-content/uploads/2015/12/GLEC-Summary-06-2015-final_en.pdf)

<sup>13</sup> 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>

<sup>14</sup> 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)

<sup>15</sup> 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

<sup>16</sup> Rillig MC. Microplastic in Terrestrial Ecosystems and the Soil? *Environ. Sci. Technol.*, 2012, 46 (12), pp 6453–6454  
DOI: 10.1021/es302011r

probably retained in sludge. Subsequent application to farmland and toxicant accumulation may impact soil organisms and move up food chains, much as in aquatic systems.

### Recommendations:

- *A prompter, more comprehensive approach by the government for the prohibition of microbeads for all consumer applications should be the overall goal of government regulatory measures in order to prevent the continued buildup of microbeads, along with concentration of toxic chemicals by microbeads in the environment.*
- *Additional monitoring and public reporting of the presence of microbeads and the absorbed chemicals found in fish and shellfish should be required on a regular cycle.*
- *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.*

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