



May 5, 2021

Mr. Francis Scarpaleggia, M.P.
Chair, Standing Committee on Environment and Sustainable Development
Sixth Floor, 131 Queen Street
House of Commons
Ottawa ON K1A 0A6
By email: ENVI@parl.cgc.ca

Dear Mr. Scarpaleggia,

Re: NAPCOR Response to Label Plastic Manufacturing Items as Toxic

On behalf of our members, the National Association for PET Container Resources (NAPCOR) is compelled to comment on the negative impact that the broad sweeping label of plastics as toxic will have. NAPCOR is the trade association for the Polyethylene Terephthalate (PET) Packaging Industry in the United States, Canada and Mexico. NAPCOR members represent the entire PET value chain, ranging from manufacturers of PET resin, bottles, sheet and thermoforms to PET reclaimers and suppliers to the PET industry. Polyethylene Terephthalate, a plastic used in the production of everything from beverage bottles to pharmaceutical packaging and apparel should not be designated as toxic.

Canada has a strong recycling infrastructure, bottle deposit schemes and economy in place for PET bottles and containers which contributes to circular systems in the country. Bottles and containers made from PET offer a clear route to circularity when properly recycled. The postconsumer flake may be converted into new bottles, packaging or longer life items such as carpeting and apparel.

CEPA allows listing of a chemical or material on the List of Toxic Substances if any of the following criteria are met:

- (a) have or may have an immediate or long-term harmful effect on the environment or its biological diversity;
- (b) constitute or may constitute a danger to the environment on which life depends; or
- (c) constitute or may constitute a danger in Canada to human life or health.

The List of Toxic Substances currently contains substances such as polybrominated biphenyls, lead, mercury, and asbestos. It also includes plastic microbeads, which are small spheres of various polymers intentionally added to toiletries.

Plastic is a broad category. Included are many different polymers which serve in many different uses. This response focuses on one specific polymer, PET, or polyethylene terephthalate (polyester) and its copolymers as used in commerce.

National Association for PET Container Resources (NAPCOR)

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PET is used to make fibers for clothing, textiles, and carpeting. It is used for bottles, jars, trays, and thermoformed packaging. Additionally, it is used as a relatively stiff film in the graphic arts industry and as flexible film for magnetic recording tape.

PET has a long history of use for food packaging material. PET is used neat, meaning it does not require additives such as plasticizers or antioxidants. PET's useful properties are achieved depending on how it is processed and crystallized. Health Canada, the European Union, the Japanese Ministry of Health, Labor, and Welfare (MHLW), and the United States Food and Drug Administration (FDA) all permit PET in food contact, whether it is virgin and or recycled PET. PET is used medically to replace blood vessels, demonstrating its long-term biological inertness.

The Canadian federal government appears to rely on the January 2020 Health Canada document Draft Science Assessment as justification for listing all 'plastics' as toxic. Certainly, the actual toxicity of PET is not in question. Over forty years of use in packaging for all regulated food types, without adverse health or safety issues, demonstrates that the polymer is not toxic. Long-term animal feeding studies show no ill effects, other than the non-nutritive nature of the biologically-inert PET. Being non-degradable means PET is biologically inert in the environment, although ultraviolet light can embrittle it. PET is not persistent in the environment and does not bio-accumulate. There are microbes that do feed on polyesters, but such are not ubiquitous.

The Draft Science Assessment focuses on macro and micro plastic particle presence in the environment. The presence of errant plastics in the environment is most often the result of human actions – littering and poor solid waste management. PET is not intentionally introduced into the environment (as are the microbeads in toiletries, which are flushed down the drain after use). Most importantly, the scientific papers cited in the Draft Science Assessment do not demonstrate any toxicological harm created by PET macro or micro particles. No cited papers refer to the problematic ingestion of PET bottles by whales or other large animals.

The Draft Science Assessment provides no statement that PET harms biodiversity. None of the studies done on marine, fresh-water, or terrestrial animals (including earthworms, amphipods, zebra fish, sea bass, oysters, daphnia, mussels, crabs, rotifer, coral, midges, and nematodes) cite issues with PET. One paper on amphipods specifically stated that intentional exposure to PET did not create acute or chronic issues for the organism.

The Draft Science Assessment further provides no substantiation that PET exerts or creates long-term environmental harm. Rather, life cycle assessments show PET bottles provide for food and beverage provision with less depletion of natural resources and less generation of waste than do alternative packaging materials, and do so economically and safely. PET is regularly recycled in Canada to the extent that it is collected, and more used material is sought for recycling.

The Draft Science Assessment provides no indication that PET endangers human health or life. On the contrary, PET bottles do not shatter and do not expose consumers to harmful levels of dubious chemicals.

The Draft Science Assessment does not cite any issues with the discharge of virgin material in the form of PET pellets into the environment. While the accidental release of raw material in the form of PET pellets is rare, it should not constitute an environmental incident.

The Draft Science Assessment does not focus on environmental impacts of PET bottles and packaging, but rather that of PET microparticles in the form of fiber. These microfibers are released to the environment as a result of washing polyester clothing. One study of drinking water showed that over three fourths of the microfibers in water were cellulosic, rather than polyester. Cellulosic fibers were twenty-five times as prevalent in drinking water as fibers from synthetic plastics. Health Canada should consider that cellulosic fiber from natural sources has been in surface water for eons with no known effect, and PET fibers also have no known adverse effect.

The presence of PET fibers in waters is an indication of inadequate water treatment, but not of human peril. No paper cited in the Draft Science Assessment found any medical issue with ingested PET microfibers. In 2019 the World Health Organization (WHO) stated “microplastics in drinking water don't appear to pose a health risk at current levels,” though this was accompanied with a call for more research. WHO also said “there is currently no evidence to suggest a human health risk from microplastics associated with biofilms in drinking-water,” referring to microorganisms that attach to microplastics. WHO suggests that diseases associated with untreated or poorly treated drinking water should remain a more urgent priority for public health officials. The risk posed by microplastics “is considered far lower than the well-established risk posed by the high concentration and diversity of pathogens from human and livestock waste in drinking-water sources.”

PET is not lipophilic. PET does not preferentially adsorb oily compounds in water, such as PCBs. As such, any microparticle of PET that is ingested is not a vector for introducing potentially dangerous oily compounds to the ingesting organism. Additionally, PET exhibits low diffusion coefficients, meaning it does not absorb materials to carry them to the digestion areas of organisms. PET is biologically non-participating.

If PET is improperly and unjustly included on the List of Toxic Substances, the public may well be unnecessarily alarmed about a non-health risk. The Canadian PET industry, including both virgin PET manufacturers, recycled PET manufacturers, and packaging converters could be harmed economically with no benefit to human or environmental health. In fact, substitutions to PET fibers and packaging may ultimately be worse for the public with more costly, poorer performing, more depleting, and more polluting alternatives.

For further perspective, a Swiss study shows automobile tire residue to be plentiful in the environment. A researcher found “that 93 percent of polymer-based microparticles are from tire abrasion, while only seven percent [consist] of the seven most widely used commodity plastics... The amount of micro-rubber in the environment is huge and therefore highly relevant.”

CONCLUSION

The Minister of Environment and Climate Change, and the Minister of Health are properly executing their responsibility to protect human health and the environment. In doing so, a proper risk assessment must be

made. When the issue is considered in its totality, the risks to human and environmental health posed by PET and its copolymers are very low because the polymer exhibits little or no health hazard.

Also, studies of the prominence, impact and long-term environmental consequences of plastic microparticles arising from the various types of plastics utilized across a common range of applications should be considered in order to fully inform ongoing and future regulatory decisions on the toxicity of plastics and plastic microparticles. Such studies should also consider the prominence, impact and long-term environmental consequences from naturally occurring microparticles in order to dutifully assess the relative risk of plastic microparticles.

Canada has a robust recycling infrastructure in place for PET bottles and containers which contributes to circular systems in country. By designating PET as a toxic substance, your objective of achieving circularity is at risk.

In closing, NAPCOR strongly recommends that PET not be listed as a Toxic Substance based on the preponderance of scientific evidence accumulated over many years. We remain committed to ongoing collaboration and look forward to further discussion and consultation.

Sincerely,



Darrel Collier
Executive Director

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ABOUT NAPCOR: Founded in 1987, the **National Association for PET Container Resources (NAPCOR)** is the industry association for the polyethylene terephthalate (PET) plastic packaging industry in the United States, Canada and Mexico. NAPCOR is dedicated to promoting the PET package; to overcoming hurdles to the successful recycling of PET; and to communicating the attributes of the PET container as a sustainable package.