

PASSING THE BUCK:

The toxic cost of dollar store products in Canada

AUGUST 2022



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TABLE OF CONTENTS

1.	Executive Summary			
2.	Toxic Chemicals and Our Health			
3.	Dollar Stores and Environmental Justice			
4.	Toxic Chemicals Found in Dollar Store Store Products			
	a.	Lead	p.12	
	b.	Plasticizers (phthalates and bisphenols)	p.15	
	c.	PFAS	p.18	
5.	Company Response		p.20	
6.	Advocate Response		p.22	
7.	Recommendations			
8.	Methods and Findings			
9.	Appendix A			

Executive Summary

Hazardous chemicals were found in chemical testing of household products, toys, electronics and food packaging we purchased from dollar stores. These substances include heavy metals, bisphenols, and PFAS, which are associated with a wide range of negative health outcomes.

In Canada, some toxic substances are prohibited or limited in certain products. However, because our toxics law has not been meaningfully updated in decades, many hazardous substances that are known to cause reproductive, behavioural and cardiovascular effects are still found in consumer products.

Toxic chemicals have no place in our homes. Children's products in particular should not contain highly toxic heavy metals such as lead. Yet several products we tested from dollar stores (Dollarama, Dollar Tree) in Canada were found to contain components with high levels of lead which is a significant health hazard, particularly to children.

Food products, such as canned food and microwave popcorn, have hazardous chemicals in their packaging, which can migrate into the food and lead to exposures to bisphenol-A (BPA), PFAS or 'forever chemicals' and other hazardous substances.

Individual consumers do not have access to this product information, as there are no federal regulations that require companies to label or disclose these ingredients. In fact, many of these ingredients and formulations are considered "trade secrets". Furthermore, discount retailers target low-income and racialized communities as their customer base, and these types of hazardous exposures are part of a broader pattern of poor air quality, drinking water contaminants, toxic soils, and unhealthy food access. Products on all store shelves in Canada should meet and exceed federal regulations on hazardous substances.

In addition to retailer accountability, regulators must also protect consumers from these toxic exposures. Legislation must be amended to protect consumers, particularly children, and products must be tested and removed from commerce when they pose a risk to our health.

For individuals and communities whose only accessible retail option is a dollar store, we need to ensure that they have equal protection to those whose financial, geographical and socioeconomic privilege allows them to buy their way out of these toxic exposures.

REPORT HIGHLIGHTS

- Dollar store products, including headphones and children's toys, contain toxic levels of heavy metals such as lead, cadmium and antimony.
- Up to 30 per cent of products tested at Dollar Tree and Dollarama contain heavy metals such as lead and other toxic chemicals such as phthalates, bisphenols and PFAS or "forever chemicals."
- Exposures to hazardous chemicals, even in small amounts, are linked to reproductive, behavioral, metabolic impacts and chronic diseases such as cancer, asthma and diabetes.

1 in 4 products

We tested contained toxic chemicals, including lead in children's products and electronics such as headphones.

TOXIC CHEMICALS AND OUR HEALTH

Chemicals found in household products, toys, electronics and food packaging can have serious health effects. Exposures to hazardous chemicals, even in small amounts, are linked to reproductive, behavioural, metabolic impacts and chronic diseases such as cancer, asthma, diabetes. Toxic exposures are also linked to learning disabilities such as low IQ, autism spectrum, and attention-deficit/hyperactivity disorder (ADHD). These impacts disproportionately affect racialized and low-income communities^{1,2,3}.

The Canadian Environmental Protection Act (CEPA, 1999) is the legislation that oversees chemical regulations, but it fails to adequately protect our health and the environment from hazardous chemical exposures. Science has evolved over the two decades since CEPA was last updated, and we now know more about the cumulative effects of even small doses of toxic chemicals.

The Government of Canada uses a definition of "toxic" under CEPA, which requires a substance to be a significant hazard to human health or the environment and have high enough levels of exposure among the general population to justify its 'risk management' such as restriction or prohibition. This leads to gaps where many chemicals are not deemed "toxic" under the narrow CEPA definition, despite posing long-term detrimental effects on our health, reproduction, and well-being. Specifically, this definition does include chemicals that have harmful impacts on the endocrine (hormone) system. Because of this, some CEPA-toxic substances have regulated limits, while other, more widely-used carcinogens, mutagens and reproductive toxicants do not have limits that are enforceable by law.

Lead regulations and product lifecycle

Lead is a well-known, highly hazardous and regulated substance. Limits on lead in consumer products only apply to the "accessible portion," which refers to the materials on the outside of the product. However, this limit was established without adequate consideration of the product's real-life use scenarios, such as the tendency for children to break, pull, chew or suck on objects that can expose previously enclosed components.

It also fails to consider the product's lifecycle, such as what happens when these products inevitably break down or are not properly repaired or disposed of. They can become a direct exposure source in the household (dust, ingestion, etc.) or indirectly through contaminated drinking water from landfills. Our regulations fail to consider the holistic toxic picture of lead and these product-based hazardous exposures.

CONSUMER PRODUCTS ON RETAILER SHELVES IN CANADA SHOULD NOT BE TOXIC

The vast majority of Canadian consumer products are imported from international sources. Canada does have laws on imported products, and importers are meant to oversee their supply chains for the presence of toxic substances. However, testing and enforcement are patchy at best. Retailers are required to ensure their products are not harming their customers, yet there are large gaps in these internal compliance programs run by retailers.

Because of the gaps in federal regulation of hazardous substances, some retailers are actively policing their supply chain for substances on their corporate Chemicals Management Policy and Restricted Substances List for the products they sell, and may have their own compliance team reviewing, testing and rejecting non-compliant products particularly those aimed at children.

To manage these lists, retailers may use a restricted substance management tool that allows their supply chain to disclose ingredients within a private database without having to label those substances for consumers. In this process, product manufacturers disclose their product formulations, including trade secrets, to retailers - beyond what consumers can access through product labels and product descriptions. These comprehensive databases can list product ingredients and the associated sensitization, as well as acute and chronic health hazards for human and aquatic species. This is significant because with the current gaps in transparency and disclosure requirements for products, retailers have the tools to keep hazardous products out of Canadian stores, communities and the environment.

While many consumers intentionally seek safer products that are free from toxic chemicals, products that disclose their ingredients and components tend to come with higher price tags.

In the absence of these product disclosures, the average Canadian consumer is left to evaluate product safety based on the assumption that they will search for this information in stores or online. Highly knowledgeable consumers might attempt to decipher available ingredient information if it is disclosed by manufacturers. But for most people, the ability to track down additional information beyond the product's packaging is too technical and/or time-consuming. This places even the most knowledgeable low-income consumers in an impossible bind: even if they have the information, understanding and time to research all of their product purchases, the options are often inaccessible. The cost of non-toxic products may be too high, or retailers who carry safer products are too far for these communities to access. Whereas dollar stores are often conveniently located in low-income neighbourhoods, and offer a wide variety of household items, toys, and groceries at discount prices. The costs of affordable products are then borne by their health and the health of their families.



DOLLAR STORES AND ENVIRONMENTAL JUSTICE

Racialized and low-income communities are targeted by low-cost retailers that, despite their own environmental and social responsibility reporting, are selling these communities products laden with harmful substances.

Dollarama indicates that 80% of Canadian households are within 10 km of a Dollarama⁴. In the United States, a recent Consumers Report survey⁵ indicates that 7 percent of Americans who shop at dollar stores said the retailers are the only shopping option—or one of the only options—in their community. And that number jumped to 19 percent for people in rural areas who make less than \$30,000 a year. Dollar Tree and Family Dollar claim that their stores help fight food insecurity by "helping alleviate the effects of 'food deserts'."

Dollar stores draw much of their profits from racialized and low-income communities⁶. As such, dollar stores are in a unique position to reduce the unequal toxic burdens faced by these communities. They can advance environmental justice, and the health and well-being of their customers by taking a leadership role and providing less toxic products.

While factors such as genetics and lifestyle influence our health, so too does income, race, ability, etc. Racialized and low-income communities in Canada are also more likely to experience poor air quality⁷, and pollution from industrial and waste facilities⁸.

Unequal exposures to toxic pollution, whether from industrial sources or consumer products, reduce people's opportunities to lead healthy and productive lives. It causes economic harm to individuals, communities, and puts additional pressure on our public health system. The Government of Canada has recognized this issue and is supporting Bill C-226⁹ (43rd parliament, reinstated in 44th parliament), which seeks to address the legacy of disproportionate toxic exposures Indigenous, Black and other racial minority communities experience due to their proximity to industrial and waste facilities.

A COMMUNITY-LED FRAMEWORK

In the absence of government action, the Louisville Charter for Safer Chemicals (Appendix A) was developed by frontline and fenceline community members to protect the health of marginalized communities. This Charter establishes community-led principles for developing corporate chemicals management policies that are adequately protective of people and planet.

TOXIC CHEMICALS FOUND IN DOLLAR STORE PRODUCTS

Our researchers purchased products from Dollarama and Dollar Tree stores in the Toronto, Ontario area in 2021 for toxic chemical testing.

We had products tested for heavy metals, phthalates, PVC, bisphenols, and PFAS.

Tested items included:

- Thermal cash register receipts from both Dollar Tree and Dollarama
- Food can linings from Dollarama
- Microwave popcorn bags from Dollar Tree
- Household items, toys, and electronics from both Dollar Tree and Dollarama

Healthy Stuff Lab, a project of the Ecology Centre in Ann Arbor, Michigan, conducts chemical screening of consumer products using two in-house analytical instruments, an X-ray Fluorescence (XRF) analyzer and a Fourier Transform Infrared Spectrometer (FTIR)¹⁰. These instruments are used for screening to identify chemicals of potential concern for subsequent analytical testing at third-party labs. Third-party contract labs utilized for this research include Eurofins (Pennsylvania) for GC/MS analysis of plasticizers and Galbraith Labs (Tennessee) for PFAS screening using combustion ion chromatography total organic fluorine analysis.

TThe Foundation for Resilient Health analyzed the results and compared them to the suggested hazard level¹¹, which is based on hazards to children.









KEY FINDINGS

At least one in four products tested contained toxic chemicals, including lead in children's products and electronics such as headphones.

- **Dollar Tree:** 30 per cent of the products tested contained toxic chemicals.
- **Dollarama:** 25 per cent of the products tested contained toxic chemicals.
- All of the cash register receipts tested contained bisphenol-S (BPS).
- All of the food cans tested contained toxic chemicals (60 per cent with BPA, 40 per cent with PVC and polyester resin).
- All of the microwave popcorn packaging tested contained PFAS.

These results should be concerning for both retailers and regulators, who are not ensuring that products are safe for consumers, particularly children.



TOXIC CHEMICALS AND HEALTH IMPACTS

There are significant gaps in the chemicals management, product formulations and imported products that lead to these significant exposure hazards, such as:

- Little to no testing or enforcement of prohibited substances: lead should not be found in products targeted at children, yet we found they contained exposed lead components..
- **No cumulative assessment:** risk assessment considers exposure to one chemical at a time when in reality we are exposed to many chemicals all at once.
- **Vulnerable populations:** some "background" exposure may be considered to account for exposures in addition to the products for which limits have been set, but likely under-represents the exposure of vulnerable populations living in highly polluted areas such as near industrial facilities and landfills.
- **Endocrine-disrupting chemicals:** hormone disruption is only taken into consideration for a few selected chemicals.

LEAD



Found in: stereo headphones, outer metal ring (24x of 90 mg/kg for limit for the accessible part of consumer products¹²)

Health harms: brain development, nervous system development

Regulatory solution: comprehensive prohibition, product testing and enforcement

Exposures:

Lead is a highly toxic heavy metal that persists and accumulates in our bodies and the environment. Because of this, lead is found in the blood of nearly all (99.7%)¹³ Canadians, and lead passes from a pregnant person's blood into a developing foetus.

Exposures continue today, through outdated infrastructure and products such as lead water piping and lead paint/dust in older homes. Lead exposures also occur through modern products and processes including air travel, industrial products, contaminated food and water, and consumer products. These exposure sources and impacts tend to be found in low-income and racialized communities¹⁴. They are disproportionately exposed to lead because of their close proximity to airports, industrial facilities, contaminated groundwater or older lead water pipes.

Consumer products brought into the home eventually break down and become components of house dust. A Canadian House Dust Study, conducted by Health Canada (2007 and 2010), found lead in the dust of all 1,025 homes tested¹⁵,¹⁶,¹⁷. This unregulated exposure poses additional risks to developing children who are disproportionately exposed to house dust due to their mouthing behaviours and close contact with flooring and other areas of dust accumulation¹⁸.

LEAD

At the dollar store:

Lead was found in several dollar store products from both Dollarama and Dollar Tree. Solder (the metal used for welding) inside electronics such as headphones, fart machine and activity tracker contained as much as 70% lead. The outer ring of a set of headphones exceeded the limit of 90 mg/kg by 24 times.



Health Harms:

The health harms of lead have been extensively studied and well documented, and there is a growing body of evidence that health harms occur at lower concentrations than previously understood. The most sensitive and well-characterized effects include neurological, cardiovascular, renal, and reproductive harms. As summarised in Canada's 2013 State of the Science review on lead¹⁹:

There is no safe level of exposure to lead. Early life exposures to lead affect neurological development and can lead to impacted neuromotor function, decreased literacy and numeracy skills, delinquent or antisocial behaviour, attention and executive function (including attention deficit hyperactivity disorder (ADHD), auditory function and visual function. The greatest evidence supports an association between early childhood lead exposure and decreased IQ. Developmental delays and decreased IQ can limit a child's ability to reach their full potential and have long-term societal implications.

Regulations and their limitations

Lead was one of the first chemicals to be added to the list of toxic chemicals in the original iteration of CEPA²⁰. Today, it is subject to a patchwork of risk management initiatives under the *Canada Consumer Product Safety Act*²¹. Lead is permitted in toys, children's jewellery and accessories, consumer paints and surface coating up to a concentration of 90 ppm.

LEAD

Toddlers and young children are notorious for putting items in their mouths, and flimsy products tend to break, exposing their internal components. Product testing does not consider these real-life scenarios. Children do not often comply with what regulators deem a "reasonably foreseeable use of the product."

Consumer products are also regulated under the *Consumer Products Containing Lead Regulations*²². The narrow scope of the regulation only applies to a product component "that is brought into contact with the user's mouth during normal use" and to accessible parts that may be "touched, licked, mouthed or swallowed during the reasonably foreseeable use of the product". In a government review of Canadians' exposure to lead, it was determined that ingestion of non-food items contaminated with lead such as household dust and consumer products were some of the greatest environmental sources of exposure to lead.

Exposure also continues upon disposal, in the communities where lead-contaminated products are disposed of improperly in landfills, contaminating soils and groundwater.

PLASTICIZERS: PHTHALATES, BISPHENOLS







Found in: Hair Clips, Doll, Pony, Funny Teeth, receipts, food can linings

Health harms: endocrine disruption, reproductive harms, hormone-related cancer, neurodevelopmental and cardiovascular effects.

Solutions: class-based prohibitions to prevent regrettable substitution

Exposures:

Plastics may contain a variety of toxic additives (generally called plasticizers) which are used to give plastics specific properties, such as flexibility or rigidity.

Toxic plasticizers are released during the manufacturing process, during contact with products in the workplace or at home, in the breakdown of consumer products, and also in the waste and recycling streams.

Phthalates are a wide class of chemicals used in plastics to soften and increase flexibility. They are also used as solvents. Phthalates are commonly found in medical devices, electronics, personal care products including medications, construction and renovation products and consumer products, including electronics, cosmetics, fragrances, children's toys and care items, and textiles²³.

Bisphenols are a class of chemicals commonly used in thermal receipt paper and food can linings. The shiny coating on thermal receipt paper is due to BPA or BPS and can be absorbed through the skin²⁴. Bisphenols and polyester resins are used in food can linings and can contaminate the food we eat. Although some manufacturers indicate their food can lining is free from BPA, other plasticizers or resins are likely used in its place.

PLASTICIZERS: PHTHALATES, BISPHENOLS

At the dollar store:

Plasticizers, including phthalates were found in many of the tested products including Hair Clips, Doll, Pony, Funny Teeth, and food can linings. Bisphenol S (BPS) was found in all the thermal cash register receipts we tested.



Health Harms:

Current science gives clear evidence that many plasticizers affect hormone systems, cause cardiovascular, reproductive issues, and some cancers^{25,26,27}. Hormones are the messengers within your body²⁸ that coordinate many complex processes. Endocrine disrupting chemicals can block natural hormones from interacting properly. Hormone disruption can cause obesity, type 2 diabetes, behaviour change, affect reproductive health, and increase the risk of some cancers. Foetuses and children are vulnerable as their bodies are still developing.

One of the most profound and sensitive effects of phthalates has been the effects on male reproductive organs²⁹, including testosterone levels, genital development impacts, sperm counts and motility. Endocrine disruption can also result in low birth weight, alter the formation of organs and increase the risk of a variety of diseases later in life³⁰.

These health concerns disproportionately affect low-income and racialized communities.^{31,32,33}

Regulations and their limitations

While some plasticizers are regulated under CEPA, this is a wide class of chemicals with similar hormone-based health effects that needs to be addressed more comprehensively. The current phthalates regulation³⁴ restricts the concentration of only six phthalates in toys and childcare articles. The final screening assessment and proposed risk management for the phthalates grouping³⁵ considered 28 phthalates and concluded that these chemicals are not harmful to human health based on the current exposure levels. But the widespread use of this broad class of chemicals in consumer products and the limited consideration of cumulative effects of exposures to mixtures of phthalates suggests that Canadian's exposures, particularly vulnerable populations, are likely underrepresented in the assessment.

PLASTICIZERS: PHTHALATES, BISPHENOLS

"BPA Free" does not mean non-toxic.

While BPA is banned in baby bottles in Canada³⁶, similar plastic additives are not subject to any regulation. Many manufacturers have shifted to using BPS or BPF in place of BPA in their plastic formula. But these, too, can disrupt hormone systems³⁷.

Despite being banned in baby bottles in Canada, BPA continues to be used in food can linings and was found in 60 per cent of the dollar store cans we tested. While some companies have moved away from BPA in can linings, PVC and polyester resin alternatives may also be toxic³⁸. These coatings are not currently regulated in Canada.

Non-toxic alternatives to plasticizers are available. Retailers including Loblaws, Metro, and Costco have committed to phasing out these toxic chemicals from their receipt paper. While this is a start, retailers need to do more to protect the health of their workers and customers.





PFAS "Forever Chemicals"

Found in: microwave popcorn bags

Health harms: endocrine disruption, carcinogen

Solutions: class-based prohibitions to prevent regrettable substitution

Exposures:

PFAS is a group of over 4,700 synthetic chemicals. Because of their waterproof, non-stick and grease-resistant properties, PFAS coatings are commonly added to a wide range of consumer products including clothing, fire-fighting foams, carpets, furniture food packaging and cooking utensils.

PFAS contamination is found in air, soil, and water. They are known as "forever chemicals" because they contaminate and persist in the environment³⁹ without fully breaking down. As a result, small exposures to PFAS chemicals can build up in the body, exposing people or animals to increasingly higher doses. In fact, recent Health Canada studies confirmed the presence of PFAS in 98.5 per cent blood of samples of the general Canadian population⁴⁰.

Exposure to PFAS can occur through food packaging such as microwave popcorn bags. Once PFAS is ingested, it can cause adverse health impacts such as disrupting the endocrine system.

PFAS

At the dollar store:

PFAS were found in each of the analysed microwave popcorn bags.

Health Harms:

PFAS exposure has been linked to endocrine disruption and other negative health outcomes including altered metabolism, decreased fertility, impaired foetal development, obesity, and weakened immune systems⁴¹

Regulations and their limitations

Some chemicals in the PFAS group have been found to be toxic to humans and the environment. These chemicals (PFOA, PFOS) were prohibited through regulations. However, evidence is mounting that chemicals that are being used as a replacement for the prohibited PFAS chemicals are also hazardous. Replacing one chemical with another hazardous substance is known as a "regrettable substitution".

In 2021, Canada announced its intent to assess per- and polyfluoroalkyl substances (PFAS) as a group. Government action on this class of widespread toxic chemicals⁴² is urgent and essential, and this latest development is a step in the right direction towards safer substitution, as opposed to regulating individual chemicals.

COMPANY CLAIMS

Based on their annual reports, Dollar Tree⁴³ and Dollarama⁴⁴ claim they are committed to environmental stewardship and consumer product safety. These commitments include sourcing safer alternatives and reducing the use of chemicals of high concern to robust testing programs to ensure products on the shelves meet or exceed regulatory standards.

Given the limitations of the current regulations for toxic chemicals, it is encouraging to see Dollarama's Procurement and Product Compliance teams focused on increasing testing to "eliminate the presence of certain chemicals or heavy metals in our products even when there may be allowable limits".

Dollar Tree indicates that their standards exceed regulatory requirements and that in 2020 they successfully eliminated 17 chemicals of high concern from their products. While this is encouraging, our testing revealed their chemicals of concern, such as cadmium, lead in children's products and bisphenols, still remain on store shelves.

Company Response

Following a similar study conducted at Dollar Tree locations across the United States, Dollar Tree committed to cleaning up its supply chain⁴⁵. And while Dollar Tree expects its suppliers to eliminate hazardous chemicals, including specific mention of lead and some phthalates, more needs to be done to verify the suppliers' claims.

When we provided Dollarama with an advance copy of the report for their response and to take action, we received the following comments from their public relations firm, RP Pelican:

"...Consumer product safety is our utmost priority, and we have strict processes and controls in place to monitor product safety and quality. The four Dollarama product categories identified in the report (stereo headphone, earbud, pencil pouch and activity tracker) meet applicable Canadian product regulations and are safe to use for their intended purposes." **Our response**: The point of this report is to highlight that hiding heavy metals and other toxic substances in the unregulated internal components of your products, and claiming that this is not a problem for you from a regulatory perspective, does not address the needs of your customers - specifically children - who chew, suck, break, and can ultimately be exposed to these components through various pathways - oral, dermal or inhalation of household dust. The narrow scope of regulations do not adequately protect children from the real life exposures to these chemicals and does not justify its use, particularly for children's products.

"...Our cash register receipts are BPA free and are safe to handle by our employees and customers."

Our response: This is an important example of 'regrettable substitution'. Where one toxic substance is replaced with another equally toxic substance. Our testing revealed another bisphenol, BPS, in Dollarama cash register receipts. BPS is a chemical "cousin" to BPA that has equally toxic properties. Other retailers are eliminating the bisphenol class of chemicals from their receipts entirely, which demonstrates a strong commitment to employee and customer safety.

"..Dollarama's comprehensive product offering caters to Canadians from all walks of life seeking value and convenience on every dollar of their hard-earned money. As a result, it has a very broad customer base which includes all demographics and income ranges."

Our response: Though the research on the location of dollar stores in Canada in relation to racialized and low-income communities in Canada is lacking, we reference the Consumer Reports research on this issue from the United States, and assume that similar tactics are employed by dollar store retailers in this market.

"...Dollarama strives to meet or exceed Canadian product related regulations and standards in place, which are applicable to all Canadian importers and retailers. We are equally committed to constantly improving our practices, enhancing the scope of our testing procedures and other compliance programs. ...Dollarama closely monitors regulatory developments and adapts its practices to ensure continued compliance with evolving product safety rules and regulations as well as industry standards."

Our response: We would hope that these results would offer a good opportunity to address these highly hazardous components in your electronics and toys, as opposed to simply pointing to how these products meet the bare minimums established by regulations.

ADVOCATE RESPONSE

Environmental justice advocates are calling for commitments from retailers to the following:

Dr. Ingrid Waldron, ENRICH Project:

Racialized and low-income communities are targeted by low-cost retailers that, despite their own environmental and social responsibility reporting, are selling these communities products laden with harmful substances. For individuals and communities whose only accessible retail option is a discount store, we need to ensure that they have equal protection to those whose financial, geographical and socio-economic privilege allows them to buy their way out of these toxic exposures.

Dr. Jane McArthur, Canadian Association of Physicians for the Environment:

Given the adverse health impacts of these hazardous substances to children, particularly for families who cannot buy their way out of these product-based exposures, we need the government to take urgent action and for companies to own up to their role in preventing these harms. We hope the Canadian government demonstrates their concern for impacted communities and strengthens federal chemicals legislation this fall.

Dr. Jennifer Beeman, Breast Cancer Action Quebec:

Retailers pass the buck to regulators when they justify these unacceptable lead levels in products, and regulators do the same when they don't create strong, comprehensive laws that protect our health and the environment.

Kanisha Acharya-Patel, Women's Healthy Environments Network:

We need more from retailers and governments, because weak regulations and loopholes, unlabelled toxics and no product testing, and weak enforcement are creating an ongoing and unmanaged exposure risk for all of us - but particularly for the low-income and racialized communities that can't buy their way of these health hazards.



RECOMMENDATIONS

It is clear that Canadian government laws and policies do not provide sufficient protection to consumers, particularly children, from these toxic exposures through products. Toxic chemicals should not be part of the inexpensive products sold at thousands of retailers across the country. Toxic receipt paper should not be handled hundreds of times each shift by cashiers and handed to every customer. Our food packaging should not be toxic. Government, retailers, and individuals all can play a part in eliminating hazardous chemicals from consumer products.

GOVERNMENT

Strengthen the laws, test international products, particularly children's products. Our chemicals management process needs to be updated to address and protect us from 21st century hazards.

Canadians are exposed to chemicals from many sources, and the cumulative impact of these exposures is especially hazardous to vulnerable populations. There is an urgent need for meaningful CEPA reform. Bill S-5, Strengthening Environmental Protection for a Healthier Canada Act, was tabled in February 2022.

To reduce pollution and protect health, CEPA must be updated to include the following elements:

- Improved transparency and disclosure through mandatory labelling of hazardous ingredients in products.
- Better regulatory enforcement, and stronger product testing and safety requirements for importers and retailers.
- Addressing the disproportionate exposures and impacts of toxic chemicals on racialized and low-income communities.
- Improved collection of biomonitoring data to better understand and address the exposures experienced by vulnerable populations (e.g. racialized, marginalised, children).
- Prohibition of classes of highly hazardous substances to avoid regrettable substitution within the class (e.g. bisphenols).
- Setting clear timelines for assessing substances and implementing measures to address substances assessed as toxic; integration of "safer substitution" as a tool in chemicals management.

Canadians need equitable access to the information required to make informed choices in selecting consumer products. Current labelling requirements do not provide full disclosure of ingredients and are insufficient to warn consumers of long-term and acute health risks. While some manufacturers voluntarily disclose some aspects of their products, this information can be difficult to interpret even for those with advanced knowledge of toxic chemicals. Canada's labelling laws fall short of those in other jurisdictions such as the European Union and the State of California, where health warning labels are required. It has been demonstrated that better labels influence consumer and manufacturer behaviour⁴⁶.

RETAILERS

Test and remove hazardous products from shelves, and strengthen corporate chemicals policy.

Retailers have an implicit responsibility to provide customers with safe products. Canadians expect that products on store shelves to be safe⁴⁷ unless there are clear and specific warning labels. The current regulatory requirements are narrow in scope. As such, retailers must strive to exceed these standards and consider the breadth of chemicals of concern that may be in their products. Rigorous testing and auditing of the supply chain are crucial.

Both Dollarama and Dollar Tree claim to value their customers' and employees' health and safety. It is concerning that the thermal receipt paper analysed from dollar stores contained bisphenols. This chemical of concern is widely known, and retailers across the country are committing to safer alternatives. Their continued use of bisphenol-containing thermal receipt paper is a clear indication that their actions do not align with their stated values. Dollar stores need to step up and make in-store and supply chain changes without delay, for the safety of their customers and employers.

The Louisville Charter for Safer Chemicals (Appendix A) offers companies concrete guidance on corporate chemicals policies that elevate safer substitution, reformulation, and protection for communities, workers and the environment.

CONSUMERS AND RETAIL WORKERS

Advocate with companies and governments, and avoid hazards where possible. Until healthier public policies are implemented, individuals can take steps to protect their own health.

These measures include:

- 1. Dispose of broken products promptly to avoid exposure to "inaccessible portions" which can be very high in toxic heavy metals like lead.
- 2. Dust and mop floors often. Dirt and dust can contain toxic chemicals.
- 3. Wash your hands often, and especially before eating.
- 4. Bisphenol coatings on the shiny side of receipt paper can be avoided by folding the receipt and touching only the non-shiny side. Avoid using hand lotions or hand sanitizer while handling receipts as these increase the amount of chemical that can cross the skin. Ask your store manager to switch to non-toxic receipts.
- 5. Avoid microwave popcorn. Opt for pre-popped, or whole kernel and pop it yourself, to avoid PFAS.

Extra Precautions for Parents and Teachers

Speak up for kids and students, and avoid hazards where possible.

Be aware that limits of toxic chemicals are based on "accessible portions" and perceived "normal" use of items. These assumptions overlook young children's behaviours of putting items in their mouths and the realities of items getting broken. Also be aware that endocrine disruption, particularly in plastics, is not a widespread consideration in regulatory limits.

The inner components of flimsy, easily broken electronics may be very high in toxic chemicals like lead. Be especially mindful of very young children's habits of putting items in their mouth that are not intended for such use and limit their access. Evidence shows that children play longer and more advanced play with a small number of toys than with a large number of toys⁴⁸. With this in mind, consider simplifying children's toy collections and skipping the toy aisle of the dollar store.

METHODS AND FINDINGS

We bought products from dollar stores in the Toronto, Ontario area and tested for toxics in:

- Receipts and food products from Dollarama and Dollar Tree.
- Household items, toys, and electronics from Dollarama and Dollar Tree.

Receipts and food products were also tested from US dollar stores Family Dollar, Dollar General, 99 Cent Only Store, and Five Below.

We had products tested for heavy metals, phthalates, PVC, bisphenols, and PFAS.

Healthy Stuff Lab, a project of the Ecology Centre in Ann Arbor, Michigan, conducts chemical screening of consumer products using two in-house analytical instruments, an X-ray Fluorescence (XRF) analyzer and a Fourier Transform Infrared Spectrometer (FTIR)⁴⁹. These instruments are used for screening to identify chemicals of potential concern for subsequent analytical testing at third-party labs. Third-party contract labs utilised for this research include Eurofins (Pennsylvania) for GC/MS analysis of plasticizers and Galbraith Labs (Tennessee) for PFAS screening using combustion ion chromatography total organic fluorine analysis.

Assessment Framework

This assessment employed both a quantitative and semi-quantitative approach.

A semi-quantitative approach was applied for classes of chemicals which represent thousands of chemicals (e.g. plasticizers) for which regulations limit a selected few isomers⁵⁰, while current science indicates the health hazards exist across the class and as such, a precautionary approach was taken that indicates the presence of this class⁵¹ of chemicals represents a potential human health hazard.

For example, while Bisphenol A (BPA) is prohibited in baby bottles in Canada, widespread evidence supports that Bisphenol A represents an endocrine disruption hazard⁵² and mutagenic hazard⁵³ and that "next generation" Bisphenols (eg. Bisphenol F (BPF), Bisphenol S (BPS, etc.) that have replaced BPA in many products are similarly hazardous ^{54,55}. As such, presence of bisphenols in the analysed samples is presented here as a hazard. In response to Environmental Defence's Receipt Campaign, Loblaw, Metro, and Costco committed to removing Bisphenols (not just BPA) from their receipt paper, even in the absence of government action⁵⁶.

Canadian Regulations indicate (quantitative) maximum concentrations for a number of heavy metals. These maximum concentrations are indicated across several regulations, which have inherent limitations in their interpretation.

METHODS AND FINDINGS

Given that the items analysed are readily accessible to consumers, and are items conceivably used by children, we have considered children's habit of mouthing objects, and their increased sensitivity to the health effects of lead compared to adults due to their small body size and rapidly developing body. Given that the items analysed could easily become broken, or be sucked on during the course of a child using them, our analysis considered all components could readily become "accessible" / "surface".

Item	Component	Concern	Substance	Human Health Hazard
Stereo	Foam	Plasticizers	PVC,	Endocrine disruption
Headphones	Cord	Plasticizers	polyurethane, phthalates	
	Ear cover	Plasticizers		
	Outer metal ring	Heavy metals	Cadmium (5 x limit) Lead (24 x limit)	Cognitive effects / delays
	Solder	Heavy metals	Lead (170 x hazard level*)	
Earbuds	Earbud plastic	Plasticizers	PVC, Phthalates	Endocrine disruption
	Cord			
	Solder	Heavy metals	Antimony (1.4 x hazard level*) Lead (3,000 x hazard level*)	Cognitive effects / delays
Pizza slice pencil pouch	Foam	Plasticizers	Polyurethane	Endocrine disruption
Activity Tracker	Solder	Heavy Metals	Lead (2,600 x hazard level*)	Cognitive effects / delays

Dollarama: 25 per cent of the products we tested contained toxic chemicals.

*For the purposes of this report, the suggested hazard level for lead, cadmium and antimony in products is based on the regulatory limit for lead in "accessible" portions of products, as we recognize the real use scenario of children's products being sucked on, chewed, or broken, which can lead to internal components being exposed and can result in health harms.

METHODS AND FINDINGS

Our assessment compared the analytical results to the following screening levels:

- Lead: Consumer Products Containing Lead Regulation⁵⁷ limits accessible portions of products and the Toys Regulations⁵⁸ limit surface coatings to 90 mg/kg of lead. Similarly, Children's Jewellery Regulations⁵⁹ also limits lead to 90 mg/kg.
- **Cadmium:** Children's Jewellery Regulations⁶⁰ limit cadmium to 130 mg/kg for items intended for children.
- **Antimony:** Toys Regulations⁶¹ limit antimony to 0.1% on a weight-to-weight basis.

Some products have several components we could test: for example, in a set of over ear headphones, we tested the vinyl, the foam, and the metal solder of the electrical components.

Canned food linings contained BPA, PVC and polyester resin, all of which can migrate to the food itself.

Item	Component	Concern	Substance	Human Health Hazard
Earbuds	Wire	Plasticizers	PVC, Phthalates	Endocrine disruption
	Solder	Heavy Metals	Cadmium (7 x hazard level*) Lead (8,000 x hazard level*)	Cognitive effects / delays
Fart Machine	Solder	Heavy Metals	Lead (19 x hazard level*)	Cognitive effects / delays
Hair Clips	Plastic covering/decoration	Plasticizers	PVC, Phthalates	Endocrine disruption
Doll	Doll Head			
	Doll Shoe			
Pony	Head			
Funny Teeth	Tooth			

Dollar Tree: 30 per cent of the products we tested contained toxic chemicals.

*For the purposes of this report, the suggested hazard level for lead, cadmium and antimony in products is based on the regulatory limit for lead in "accessible" portions of products, as we recognize the real use scenario of children's products being sucked on, chewed, or broken, which can lead to internal components being exposed and can result in health harms.

APPENDIX A: THE LOUISVILLE CHARTER FOR SAFER CHEMICALS

This charter, updated in 2021, is a community-driven initiative that provides companies with a framework for addressing the disproportionate impact of hazardous exposures on racialized communities, advancing environmental justice, and avoiding false solutions to toxic exposures. They offer ten specific recommendations:

- 1. Address the Significant Impacts of Chemical Production and Use on Climate Change.
- 2. Prevent Disproportionate Exposures and Hazards, and Reduce Cumulative Impacts on Environmental Justice Communities.
- 3. Require Safer Substitutes and Solutions for a Non-Toxic Economy: eliminate hazardous chemical use, production, and emissions and replace them with demonstrably safer alternatives.
- 4. Use Scientific Data to Support Health-Protective Policies and Practices.
- 5. Take Urgent Action to Stop Production and Recover Chemicals that are Unsafe and/or Accumulate in the Environment and People.
- 6. Act with Foresight to Protect Health and Prevent Pollution.
- 7. Take Immediate Action to Protect, Restore and Strengthen Communities.
- 8. Ensure the Public and Workers Fully Have the Right-To-Know, Participate and Decide.
- 9. Incentivize Responsible Business & Safer Chemicals.
- 10. Build an Equitable and Health-Based Sustainable Economy.

This framework should inform all retailer chemicals management policies. Retailers who serve racialized and low-income communities in particular should incorporate these policies in order to mitigate the harms that toxic substances in their products may cause.

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PASSING THE BUCK: THE TOXIC COST OF DOLLAR STORE PRODUCTS

A REPORT BY:



Acknowledgements:

Campaign for Healthier Solutions Foundation for Resilient Health Ken and Debbie Rubin Public Interest Advocacy Fund Dragonfly Ventures

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