



Kicking the Can?

Major Retailers Still Selling
Canned Food with Toxic BPA





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Introduction

Bisphenol A, often called BPA, is one of the most widely used and thoroughly studied toxic chemicals. Despite hundreds of scientific studies showing that exposure to BPA is linked to significant health concerns - diabetes, obesity, heart disease, and cancer - it is still used in food cans that millions of Americans buy every day. BPA in can linings can migrate into the food inside the can, and is an important source of exposure to this toxic chemical. This report documents the current use of BPA in can linings, compared with an earlier report about cans purchased in 2015. We found that 38% of the cans we tested from four large national retail chains -- Kroger, Albertsons, Dollar Tree, and 99 Cents Only -- still use BPA-containing linings. We also found that, in many can linings, different toxic materials may be used in place of BPA. For example, 19% of the cans tested use linings containing PVC, which we call a toxic substitute.

Overall, progress is being made in reducing the use of BPA in can linings, but more work is needed by the nation's top retailers to reduce the use of BPA and find safer substitutes.





What's the problem with BPA?

Bisphenol A (BPA) was first synthesized by chemists in the 1890s. In the 1930s chemists identified it as an artificial estrogen, a chemical that can affect the body like the natural human hormone. In the 1950s and 60s chemists discovered that BPA could be used as a protective lining in canned foods, and it has been widely used this way (and in other applications, like hard polycarbonate plastics) ever since.

While thousands of chemicals used in common products have not been adequately assessed for their potential health and safety hazards, by contrast BPA has been well studied and scientists have found significant health hazards. The European Union has identified BPA as a “substance of very high concern” because exposure to BPA can lead to serious reproductive health problems. California has also identified BPA as a chemical that causes reproductive harm. A recent review by the Endocrine Society of studies about human health and BPA found that exposure was linked with a variety of health problems including diabetes, obesity, heart disease, and prostate cancer. According to the National Institute for Occupational Safety and Health (NIOSH), BPA exposure causes both genetic damage and reproductive harm in studies with laboratory animals. In addition, a recent scientific review found that early-life BPA exposures increase susceptibility to breast cancer.

“exposure to BPA can lead to serious reproductive health problems”



Concerns about BPA in canned food

Cans with BPA linings are a common source of exposure to BPA. Scientists from the U.S. Food and Drug Administration who studied BPA exposure in 2011 stated that BPA “migrates into can contents during processing and storage.” They noted that this process had been well documented by researchers. They also noted that canned food has been identified as the “primary source” of exposure to BPA. Over 90% of the canned foods tested in this FDA study contained BPA.

Our report is a follow-up to the *Buyer Beware: Toxic BPA & Regrettable Substitutes in the Linings of Canned Food*, which evaluated lining materials in cans purchased in 2015. That report, published by Breast Cancer Prevention Partners, Campaign for Healthier Solutions, Clean Production Action, Ecology Center, and the Mind the Store Campaign, found that 67% of the cans tested contained BPA. For our report, CEH tested cans purchased in 2017 to determine whether can lining materials have changed since 2015. We were particularly interested in which retailers and brands are still using BPA linings, which are using alternatives to BPA linings, and which alternative linings those companies are using.





In this report, we focus on canned food products purchased from four retailers:

1. **Kroger** - the largest grocery chain in the US. Kroger operates supermarkets under numerous names; we purchased cans from the chain’s Fred Meyer, Harris Teeter, Kroger, and Ralph’s stores. All of the cans tested were private label (store brand) products.
2. **Albertsons/Safeway** - the #2 grocery chain in the US. We purchased cans from Albertsons, Safeway, and Shaw stores. All of the cans tested were private label (store brand) products.
3. **Dollar Tree** - the #2 dollar store chain in the US.
4. **99 Cents Only** - the largest dollar store chain in the Western US.



Sample collection and testing

Cans were purchased from January - April 2017 in 11 states (California, Idaho, Maryland, Massachusetts, Michigan, New York, North Carolina, Ohio, Oregon, Rhode Island, and Virginia). We purchased 252 cans: between 50-75 each from four major grocery chains and dollar stores.

	Kroger	73
	Albertsons	69
	Dollar Tree	58
	99 Cents Only	52

We identified can lining materials using a Thermo Fisher Nicolet FTIR. The FTIR records an infrared spectrum of the material tested, and by the pattern of the spectrum we can determine the chemical makeup of the material. We tested the intact linings from the sides and top of each can. For the *Buyer Beware* report on cans tested in 2015, the groups conducting can testing had determined the spectra that identify five major types of can linings, all of which we found: BPA epoxies, styrene-acrylics, polyesters, vinyls, and oleoresins. For vinyl linings, we further verified that they contained PVC with additional testing using an Olympus X-ray fluorescence analyzer to document the presence of chlorine, which supports the conclusion that the lining contains PVC.

In addition, to confirm the FTIR results, we commissioned an independent lab to test the food contents from four cans with linings that tested positive for BPA in our FTIR testing. BPA was found in the food from all four cans, at concentrations between 52 and 140 parts per billion. This shows that BPA was likely migrating from the can lining to the food.



Our Results

While our results show fewer cans contain BPA than in 2015, our testing shows that too many cans still contain this toxic chemical.

Overall, 38% of the cans tested had BPA-containing linings; this compares with 67% in the cans purchased in 2015 for the *Buyer Beware* report.

We found significant use of BPA linings at each of our four focus retailers:



Albertsons - 36% of the cans tested (25/69) contained BPA.



Kroger - 33% of the cans tested (24/73) contained BPA.



Dollar Tree -- 33% of the cans tested (19/55) contained BPA.



99 Cents Only -- 52% of the cans tested (27/52) contained BPA.

In addition, 19% of the can linings contained PVC.



Albertsons - 17% of the cans tested (12/69) contained PVC.



Kroger - 16% of the cans tested (12/73) contained PVC.



Dollar Tree --25% of the cans tested (14/55) contained PVC.



99 Cents Only -- 17% of the cans tested (9/52) contained PVC.

“...38% of the cans tested had BPA-containing linings”

A recent survey found that over half of American families eat canned fruit, vegetables, beans, soups, or meat/fish. About 40% of Americans use canned milk. Our testing shows that BPA linings are still found in many brands of these commonly eaten canned food products.

Examples of commonly eaten foods from our four primary retailers that use cans with BPA-or PVC containing linings include the following products.

			
Cans containing BPA:	Cans containing BPA:	Cans containing BPA:	Cans containing BPA:
<ul style="list-style-type: none"> • Beef Ravioli • Corned Beef Hash • Cream of Mushroom Soup • Garden Variety Sweet Peas • Mixed Vegetables • Seasoned Black Beans • Spaghetti Rings Pasta • Spaghetti with Cheese and Tomato Sauce • Sweet Golden Corn • Sweet Peas and Carrots 	<ul style="list-style-type: none"> • Chili Beans • Cream of Mushroom Soup • Cranberry Sauce • Garbanzo Beans • Mixed Vegetables • Kidney Beans • Pinto Beans • Reduced Sodium Chicken Broth • Ripe Chopped Olives • Whole Green Beans 	<ul style="list-style-type: none"> • Campbell's Beef Gravy • Campbell's Healthy Kids Awesome Shapes Pasta • Lady Liberty Asparagus • Pampa Asparagus Spears • Pampa Mackerel • Pampa Ripe Olives • Red Gold Sloppy Joe Sauce • Ruby Kist Cranberry Sauce • Southgate Corned Beef Hash 	<ul style="list-style-type: none"> • Andersons Split Pea Soup • California Healthy Harvest Sweet Peas • Campbell's Bean with Bacon Soup • Campbell's SpaghettiOs with Sliced Franks • Carey Chipotle Peppers • Chef Ernesto Minestrone Soup • Del Monte Mixed Vegetables • La Costena Whole Pinto Beans
Cans containing PVC:	Cans containing PVC:	Cans containing PVC:	Cans containing PVC:
<ul style="list-style-type: none"> • Asparagus Spears • Chunk Light Tuna • Evaporated Milk • Wild Caught Chunk Light Tuna 	<ul style="list-style-type: none"> • Chunk Chicken Breast • Chunk Light Tuna • Sauerkraut • Tomato Paste 	<ul style="list-style-type: none"> • Armour Potted Meat • Bumble Bee Chunk Light Tuna • Caribbean Joy Coconut Milk • Libby's Green Beans 	<ul style="list-style-type: none"> • Haggen Chunk Light Tuna • Paradiso Taco Sauce • Ro Tel Diced Tomatoes and Green Chiles • Underwood Deviled Ham

We also compared 24 canned food items from Buyer *Beware* (of which 18 had BPA-containing linings in 2015) with the same item purchased this year.

We found 8 that used BPA-containing linings both in 2015 and 2017.

Examples of common products include:



Kroger
Cream of Mushroom
Soup



Harris Teeter (Kroger)
Sweetened
Condensed Milk



Hartford House
Chili with Beans



Campbell's
Turkey Gravy

For complete results, visit www.ceh.org/toxicBPA

“Our testing shows that BPA linings are still found in many brands of these commonly eaten canned food products.”



Environmental Justice

Our results show that consumers who buy canned food from 99 Cents Only stores are most likely to be unwittingly exposed to BPA. This is especially troubling for low-income communities of color who live in “food deserts,” where canned food from the local dollar store is often the most convenient and affordable option. African-Americans and low income families have, on average, higher amounts of BPA in their bodies than people of other races and people with higher incomes. Environmental justice advocates have noted that the threat from BPA in canned food may compound health problems their communities already face from their disproportionate toxic exposures. In addition, exposure of workers in manufacturing facilities to both BPA and vinyl chloride is a significant concern.

“Our results show that consumers who buy canned food from 99 Cents Only stores are most likely to be unwittingly exposed to BPA.”



Regulations

Federal regulations about BPA-containing can linings are inadequate. FDA no longer allows use of these linings in cans of infant formula, but formula companies had ended their use of BPA prior to the FDA action. They are still permitted to be used in other canned foods.

California has arguably the strongest regulations related to BPA-containing can linings; however, faced with food industry pressure, the state decided to delay enforcement of its rules for canned food. BPA is subject to the warning requirements of California's strong consumer protection law commonly known as Proposition 65. For products other than canned food, consumers will typically see product warning labels or other warning signs that describe the health risk from BPA in specific products. (See www.p65warnings.ca.gov/products/food). However, for canned foods, retailers have been allowed to place generic warning signs at cash registers in place of the specific, clear and reasonable warnings that are required for all other products.

As a substitute for telling consumers which cans contain BPA, the cash register signs refer customers to an online database of cans that contain BPA maintained by state officials. Alarmingly, our testing shows that this database is not a reliable source of information about BPA in canned food. 157 of the cans we tested for this report were purchased in California. Consumers who buy these foods would only have access to information about BPA in the cans via the state's database. But of the 157 cans purchased in California, 19% (30) were either not included in the state's database (22 of 30), or were ambiguously identified by the database (8 of 30). This includes two cans that an independent lab found with BPA residues in the food. This demonstrates the failure of California's approach - even consumers who have the technology and wherewithal to access the state's database have a chance of unwitting exposures to BPA.

Alternatives

The BPA alternative linings we identified in this project include styrene-acrylic resins, polyester resins, vinyl resins, and oleoresins. To the best of our knowledge, there is not publicly available and complete ingredient information for any of these resins. It is therefore challenging, if not impossible, to identify safer lining materials. We applaud the movement away from BPA, but stress the need for a comprehensive evaluation of safer alternatives.

Recommendations

To grocery retailers and food brands:

1. Commit to eliminating and safely substituting BPA from all your food cans (including both private label and brand name canned food) and other food packaging. Establish clear public timelines and benchmarks for your transition to safer alternatives.
2. Ensure substitutes are safe. Work with suppliers to conduct and publicly report on the results of “alternatives assessments,” using the GreenScreen® for Safer Chemicals or a similar third - party tool for assessing the safety of your can linings, to avoid “toxic substitution”.
3. Label all chemicals used in can liners, including BPA or BPA alternatives; and require that your suppliers of food can linings fully disclose safety data, so you can provide a higher level of transparency to consumers.
4. Adopt a written public safer chemicals policy with public, quantifiable goals and with clear timelines for reducing and eliminating chemicals of high concern in products and packaging. For example scientific research has identified food as the number one source of exposure to hormone - disrupting phthalates, and highly fluorinated chemicals have also been documented in food packaging.

To consumers

1. When available and affordably priced, use fresh and frozen alternatives.
2. When purchasing canned food, purchase cans identified as not containing BPA or PVC in this report.
3. When purchasing canned food, ask your store about BPA-free canned foods. Let your store know that you prefer to purchase BPA-free products.

References

Introduction

Gore AC, Chappell VA, Fenton SE, Flaws JA, Nadal A, Prins GS, Toppari J, Zoeller RT. EDC-2: The Endocrine Society's Second Scientific Statement on Endocrine-Disrupting Chemicals. *Endocr Rev.* 2015 Dec;36(6):E1-E150.

Rochester JR. Bisphenol A and human health: a review of the literature. *Reprod Toxicol.* 2013 Dec;42:132-55.

What's the problem with BPA ?

Heather Caliendo. History of BPA. *Packaging Digest* June 28, 2012. <http://www.packagingdigest.com/food-safety/history-bpa>.

European Chemicals Agency. 2017. Four new substances of very high concern added to the Candidate List. ECHA/PR/17/02. <https://echa.europa.eu/-/four-new-substances-of-very-high-concern-added-to-the-candidate-list>.

California Environmental Protection Agency. Office of Environmental Health Hazard Assessment. 2015. Bisphenol-A Listed as Known to the State of California to Cause Reproductive Toxicity. <https://oehha.ca.gov/proposition-65/cnrn/bisphenol-listed-known-state-california-cause-reproductive-toxicity>.

Gore AC, Chappell VA, Fenton SE, Flaws JA, Nadal A, Prins GS, Toppari J, Zoeller RT. EDC-2: The Endocrine Society's Second Scientific Statement on Endocrine-Disrupting Chemicals. *Endocr Rev.* 2015 Dec;36(6):E1-E150.

National Institute for Occupational Safety and Health. 2013. Registry of toxic effects of chemical substances (RTECS): Phenol, 4,4'-isopropylidenedi-. <https://www.cdc.gov/niosh-rtecs/sl602160.html>.

Seachrist DD, Bonk KW, Ho SM, Prins GS, Soto AM, Keri RA. A review of the carcinogenic potential of bisphenol A. *Reprod Toxicol.* 2016 Jan;59:167-82.

Concerns about BPA in canned food

Noonan GO, Ackerman LK, Begley TH. Concentration of bisphenol A in highly consumed canned foods on the U.S. market. *J Agric Food Chem.* 2011 Jul 13;59(13):7178-85.

Breast Cancer Fund, Campaign for Healthier Solutions, Clean Production Action, Ecology Center, Mind the Store Campaign. 2016. Buyer Beware: Toxic BPA and regrettable substitutes found in the linings of canned food. <http://www.toxicfoodcans.org>.

Statista. 2017. Largest grocery chains and supermarkets in the United States in 2015, based on retail sales (in billion U.S. dollars). <https://www.statista.com/statistics/197899/2010-sales-of-supermarket-chains-in-the-us/>

Statista. 2017. Facts on dollar stores in the U.S. <https://www.statista.com/topics/1343/dollar-stores-in-the-us/>

99 Cents Only. 2014. About us. <http://99only.com/99about/about/>.

Concerns about lining materials that don't contain BPA

Brandt-Rauf PW, Li Y, Long C, Monaco R, Kovvali G, Marion MJ. Plastics and carcinogenesis: The example of vinyl chloride. *J Carcinog*. 2012;11:5.

Benfenati E, Natangelo M, Davoli E, Fanelli R. Migration of vinyl chloride into PVC-bottled drinking-water assessed by gas chromatography-mass spectrometry. *Food Chem Toxicol*. 1991 Feb;29(2):131-4.

U. S. National Library of Medicine. 2017. Tox Town: Polyvinyl Chloride (PVC). https://toxtown.nlm.nih.gov/text_version/chemicals.php?id=84.

Our results

Cans Get You Cooking. 2015. A look inside America's Cantry. <http://cansgetyoucooking.com/nutrition/Nutrition-PDF/A%20Look%20Inside%20America's%20Cantry.pdf>

Statista. 2016. Consumption of canned milk. <https://www.statista.com/statistics/280241/us-households-consumption-of-canned-milk/>

Environmental Justice

Calafat AM, Kuklennyik Z, Reidy JA, Caudill SP, Ekong J, Needham LL. Urinary concentrations of bisphenol A and 4-nonylphenol in a human reference population. *Environ Health Perspect*. 2005 Apr;113(4):391-5.

Centers for Disease Control and Prevention. 2017. Occupational Exposure to Bisphenol A (BPA) in U.S. Manufacturing Companies. <https://blogs.cdc.gov/niosh-science-blog/2017/01/05/bpa/>

Communications Workers of America. 2009. Vinyl Chloride and the Workplace. <https://www.cwa-union.org/national-issues/health-and-safety/health-and-safety-fact-sheets/vinyl-chloride-and-workplace>.

Regulations

U.S. Food and Drug Administration. 2016. Bisphenol A (BPA): Use in Food Contact Application. <https://www.fda.gov/newsevents/publichealthfocus/ucm064437.htm>.

California Office of Health Hazard Assessment. Undated. Canned or Bottled Foods Where BPA Was Intentionally Used in the Manufacture of the Can Lining, Bottle Seals or Jar Lids. <https://www.p65warnings.ca.gov/bpalist>.

About the organizations

Center for Environmental Health

Since we opened our doors in 1996, the Center for Environmental Health has helped lead the growing, nationwide effort to protect people from toxic chemicals. We believe that chemical makers have no right to expose you to concoctions that affect your family's health. That's why we work with parents, communities, businesses, workers, and government to protect children and families from toxic chemicals in our homes, workplaces, schools, and neighborhoods.

For the last 20 years, we have won victories that have made families safer everywhere.

<http://www.ceh.org>

Just Transition Alliance

The Just Transition Alliance was founded in 1997 as a coalition of environmental justice networks and labor unions. Together with frontline workers, and community members who live along the fence-line of polluting industries, we create healthy workplaces and communities. We focus on preventing toxic exposure in the workplace, in Environmental Justice communities, for a just transition towards clean production and local sustainable economies. The Just Transition Alliance is a 501(c)3 organization based in San Diego, California.

<http://www.jtalliance.org>

Mind the Store

The Mind the Store campaign is challenging the nation's biggest retailers to adopt comprehensive chemical management policies to disclose, reduce, eliminate and safely replace the Hazardous 100+ Chemicals of High Concern and other toxic chemicals in products. The Safer Chemicals, Healthy Families coalition represents more than 11 million individuals and includes parents, health professionals, advocates for people with learning and developmental disabilities, reproductive health advocates, environmentalists and businesses from across the nation.

<http://saferchemicals.org/mind-the-store/>

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