

Bisphenol A use in Consumer Products and Proposals for Change

Introduction

There is currently a call to action to include a ban on the use of bisphenol A in plastic food packaging as part of the Food Safety Bill.¹ This is significant because BPA is used in a wide range of products such as plastics for glasses, tin cans liners, prepackaged food containers, children's toys, and baby bottles.² These products are used daily by consumers, which is cause for concern because there is speculation that BPA can leach from products into the human system. This also affects the environment because many of these products are disposed of in landfills or are recycled and continue to be used on a daily basis.

Bisphenol A is a chemical that is believed to act as a hormone mimic of estrogen in humans that use products containing it.³ The estrogen nature of bisphenol A makes it act as an endocrine disrupter, specifically in male embryos, which can result in a reduced sperm count in these fetuses.⁴ The role of the endocrine system is to release hormones throughout the body as a way to transport information.⁵ When BPA acts as an excess amount of a hormone, there are a number of negative affects possible. Endocrine disrupters like BPA can lead to developmental abnormalities and reproductive problems like sterility.⁶

This issue is significant because of the public's "Right to Know" under the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986. This right means that consumers are guaranteed a right to knowledge of what chemicals they might have been exposed

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¹ Lyndsey Layton, "Delay of food safety bill stirs tensions between House and Senate Democrats," Jul. 20, 2010 *The Washington Post*, available at http://www.washingtonpost.com/wp-dyn/content/article/2010/07/20/AR2010072004163_pf.html.

² John Christoffersen, "Lawsuit Filed Against Maker of Baby Bottles With BPA," May 29, 2008 *The Washington Post*, available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/05/28/AR2008052803174.html>.

³ Andrew Porteous, "Bisphenol A," Oct. 2000, *Dictionary of Environmental Science and Technology*, available at http://proxy-um.researchport.umd.edu/form?url=http%3A%2F%2Fwww.credoreference.com/entry/wileyenvsci/bisphenol_a.

⁴ *Id.* at 1.

⁵ Andrew J. Waskey, "Endocrine Disrupters" (2010). In *Green Politics: An A-to-Z Guide*, available at http://proxy-um.researchport.umd.edu/form?url=http%3A%2F%2Fwww.credoreference.com/entry/greenpolitics/endocrine_disrupters.

⁶ *Id.* at 1.

to currently, in the past, or in the future.⁷ Some manufacturers claimed that after extensive research, their products did not leach BPA into the liquid or food stored in their containers. But the issue is that companies failed to even state that their products contained bisphenol A, a fact that can hinder consumer confidence in a company and its assurance of quality products.⁸

Background

Current Framework of Toxic Substance Legislation

The current legal framework has established that chemicals in products other than food, cosmetics, pesticides, and drugs do not have to be tested before they are used in consumer products.⁹ The Toxic Substances Control Act of 1976 (TSCA) gives the Environmental Protection Agency (EPA) the power to require the reporting of chemicals used in consumer products.¹⁰ Currently about 84,000 chemicals are registered with the Chemical Substance Inventory under TSCA, but the inventory is increased as new chemicals are used.¹¹ This inventory, which is open to public view, serves the purpose of reporting the use of a chemical, including any substantial health risks, but it does not hinder the ability to use chemicals in the inventory. The EPA has data on the health effects of only 200 chemicals, giving many companies freedom in what they use in their products.¹² BPA is reported but TSCA does not require further measures to be taken by manufacturers.

The lack of data is problematic for consumers that buy toys for their children because of the nature of toy products. The Consumer Product Safety Commission (CPSC), a United States

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⁷ Jo Arney, "Right to Know," 2010, *Green Business: An A-to-Z Guide*, available at http://proxy-um.researchport.umd.edu/form?curl=http%3A%2F%2Fwww.credoreference.com/entry/greenbusiness/right_to_know.

⁸ *Id.* at 2.

⁹ Amy Lubitow, "Toys," 2010, *Green Consumerism: An A-to-Z Guide*, available at <http://proxy-um.researchport.umd.edu/form?curl=http%3A%2F%2Fwww.credoreference.com/entry/greenconsumerism/toys>.

¹⁰ 15 U.S.C. §2601 (1976).

¹¹ *Id.* at 2.

¹² Amy Lubitow, "Toys," 2010, *Green Consumerism: An A-to-Z Guide*, available at <http://proxy-um.researchport.umd.edu/form?curl=http%3A%2F%2Fwww.credoreference.com/entry/greenconsumerism/toys>.

federal agency, focuses on product safety regulations in terms of use of the product not the physical make up of the product.¹³ The CPSC has implemented the Consumer Product Safety Improvement Act of 2008, establishing requirements for the toxic substances that might be found in toys.¹⁴ This is significant in testing toys for the protection of human health across all spectrums because it defines importer, domestic U.S. companies, and small or at home businesses as manufacturers.

International Policy

The European Food Safety Authority's (EFSA) of the European Union has set a cap on the amount of BPA that a consumer can be exposed to from plastics products and food, known as the tolerable daily intake of 0.05 milligram per kilogram of body weight.¹⁵ Though an official limit is beneficial to the general public, E.U. officials were urged to reduce this figure because of public concern. As of September 30th 2010, the EFSA stated that the latest scientific evidence has not changed their opinion of 0.5 mg being a tolerable level.¹⁶ The EFSA CEF Panel for food contact materials, enzymes, flavorings and processing aids reached this opinion. The CEF Panel acknowledged that there have been adverse affects on the central nervous and immune systems and increased likelihood of breast cancer shown in laboratory animals exposed to BPA during early stages of development.

Consumer Response

In late May of 2008, Ashley Campbell, a resident of Arkansas, filed a lawsuit against a Westport, Connecticut company, Playtex Products, that made baby bottles containing bisphenol A. Campbell's intentions were to start a class action lawsuit of behalf of all consumers who

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¹³ *Id.* at 2.

¹⁴ 15 U.S.C. 15 U.S.C. §2051 (2008).

¹⁵ European Food Safety Commission, "EFSA updates advice on bisphenol A," Sept. 30, 2010, available at <http://www.efsa.europa.eu/en/press/news/cef100930.htm>.

¹⁶ *Id.* at 3

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purchased products containing the controversial chemical.¹⁷ This demonstrates how far-reaching the use of BPA is because it has become a key component in materials that make daily life convenient. While many consumers are switching to glass containers, companies are taking notice and as of May 2008, Wal-Mart had set deadlines for a transition to only selling BPA-free baby bottles.¹⁸ In response to the lawsuit Playtex cited “consumer confusion” as the cause for the public response and noted that BPA was considered adequate for use in their products by many regulatory agencies.¹⁹ Furthermore, Playtex Products stated that they offer BPA-free baby bottles with liners and planned to shift to a product line with more BPA-free materials by the end of 2008. In November 2009 a lawsuit was filed that included Ashley Campbell and plaintiffs from different states. Manufacturers requested that the case be dismissed during litigation because there was no misrepresentation or fraud in the products sold by these companies. As a result all claims were dismissed because they were based on companies misrepresenting their products.²⁰

The “consumer confusion” cited by Playtex Products is not without warrant. There are multiple conclusions being drawn by different sources regarding the safety of bisphenol A. These sources state that there are concerns ranging from little to elevated risk from exposure to bisphenol A. This not only includes chemical interest groups, but also respected international and U. S. government agencies. These groups give the public a certain view of the chemical, contributing to the debate over the use, risks, and, in some opinions, benefits of bisphenol A.

The National Toxicology Program (NTP) of the National Institute of Environmental Health Sciences has spoken out about bisphenol A with an increasing scale from negligible concern, minimal concern, some concern, concern, and serious concern. NTP defines its middle

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¹⁷ John Christoffersen, “Lawsuit Filed Against Maker of Baby Bottles With BPA,” May 29, 2008 *The Washington Post* <http://www.washingtonpost.com/wp-dyn/content/article/2008/05/28/AR2008052803174.html>.

¹⁸ *Id.* at 4.

¹⁹ *Id.* at 4.

²⁰ Polycarbonate Plastic Products Liability Litigation, 2009687 F.Supp.2d 897

reading of “some concern” as being a need for awareness but acknowledging that all research in regard to BPA has not been conducted. Though the research on lab animals does not translate to the same affects in humans “the possibility of adverse health effects cannot be dismissed” based on the assumption of “some concern”.²¹ The NTP concluded that there were negligible reproductive effects for consumers that did not work with BPA and minimal concern for workers that were exposed to high levels. There was negligible concern that the fetuses of pregnant women exposed to bisphenol A would result in birth defects, low birth weight, and fetal or neonatal mortality. There was minimal concern regarding the effects on mammary gland and early puberty in female fetuses, infants, and children based on their current levels of exposure. The NTP states that there is some concern for the effects on the brain, behavior, and prostate gland on fetuses, infants, and children at current exposure levels.²² This range demonstrates that the potential risks are widespread but the level of effects regarding the risks is low based on this view.

Chemical manufactures have a large stake in the decision to ban or limit the use of bisphenol A since it is such a widely used chemical. The American Chemical Council discusses the benefits and safeness of BPA. These statements are based on the scale of exposure because though studies show that there is exposure, they do not represent extremely adverse effects from using products containing bisphenol A.²³ They go on to discuss the benefits of plastics being lightweight, durable, and reusable all thanks to the unique qualities of BPA, which is present in plastics at very low levels. This presents a difficult decision for consumers, producers, and legislators because of the varying viewpoints.

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²¹ National Institute of Environmental Health Sciences, “Since You Asked- Bisphenol A (BPA): NTP Conclusions,” available at <http://www.niehs.nih.gov/news/media/questions/sya-bpa.cfm>.

²² *Id.* at 5.

²³ American Chemistry Council “Environmental Safety,” available at <http://factsaboutbpa.org/is-bpa-safe/environmental-safety>.

Analysis

The State Response

There are a variety of responses to deal with the continuing debate over bisphenol A. One option is to have states take action against the use of the chemical in order to protect their residents. This is something that is currently happening in many states. In August 2010, Democratic Senator Dianne Feinstein of California urged the state of California to ban BPA in children's products through the Toxin-Free Infants and Toddlers Act.²⁵ This act would prevent manufacturers from using BPA in all children's food and beverage containers in the state.²⁶ Feinstein goes on to cite eight other states that currently have such legislation: Connecticut, Maryland, Massachusetts, Minnesota, New York, Vermont, Washington and Wisconsin. The importance of this Act would be that it is wiser to "err on the side of caution" as Senator Feinstein put it, rather than continue exposing young children to a chemical whose effects are not fully understood by scientists.

Maine has also looked into banning BPA because of the concerns that there is no national entity regulating its use. Currently Maine has a Kid-Safe Products Act established in 2008 to protect the consumers of children's products.²⁷ In early September 2010, Maine's Board of Environmental Protection started to consider a ban on the use of BPA in reusable food and beverage containers, making BPA the first "Priority Chemical" under the 2008 Act. This measure would still not be comprehensive enough because it ignores food packaging, which is

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²⁵ Dianne Feinstein, "Senator Feinstein Urges Governor Schwarzenegger to sign Toxin-Free Infants and Toddlers Act," Aug 23, 2010, available at http://feinstein.senate.gov/public/index.cfm?FuseAction=NewsRoom.PressReleases&ContentRecord_id=a4b6bc98-5056-8059-76da-a55ec744b234&Region_id=&Issue_id=.

²⁶ *Id.* at 6.

²⁷ Jeffery Peterson, "Maine Voices: Banning BPA a wise decision for Maine," *The Portland Press Herald*, available at http://www.pressherald.com/opinion/banning-bpa-a-wise-decision-for-maine_2010-09-04.html.

also a source of BPA exposure to infants and toddlers because of formula, infant, and toddler food.²⁸

The state response is crucial because it shows that at a smaller scale, there is elevated concern about the effects of bisphenol A. State proposals in Maine and California and current legislation in eight other states all focus on the protection of infants and toddlers. This is an exceptional step in the protection of the most vulnerable consumers. The ban on BPA in products for infants is essential but does not address the national standard on manufacturing of BPA and its use in other states. A possible weakness of state legislation is that it does not look at other sources of BPA that are not directly marketed for infants and toddlers. Protecting the younger population is important but many parents and adults that work with children may store food they serve to children in containers that are made with BPA. Other products that children might use or become curious about can harm them, especially since not all plastic products are labeled with what chemicals they may contain. States have taken an important step that the federal government should use as an example to create guidelines to protect all consumers.

Federal Recommendations

The Food and Drug Administration (FDA) agrees with the NIH National Toxicology Program's stance that there is some concern over the effects of BPA. The FDA is also in line with what some groups are saying about how applicable data from animal studies is to humans. This is because of possible differences in the way humans at different ages and lab animals metabolize bisphenol A.²⁹ The FDA is currently pursuing studies to deal with such uncertainties but they have made a recommendation that the public should reduce consumption and use of products containing BPA and change food preparation methods such as not heating food in

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²⁸ *Id.* at 6.

²⁹ United States Food and Drug Administration, "Bisphenol A (BPA)," Jan. 10, 2010, available at <http://www.fda.gov/newsevents/publichealthfocus/ucm064437.htm>.

plastic containers. It is suggested that in this interim period of uncertainty, consumers should focus on reducing infant exposure while the FDA works with manufacturers to stop the use of bisphenol A in baby and toddler food containers and also to find an alternative to BPA for manufacturers that use it in their products.

This federal source's recommendation highlights the potential risks of bisphenol A. This recommendation is flawed, however, because it states that because scientists do not fully understand the risks, consumers should continue using some products containing BPA during this interim period of uncertainty. FDA and the NTP both express that there is "some concern" associated with the use of BPA. This concern level is the median on a five level scale, yet it has not warranted any significant changes to federal regulations. A recommendation of risk avoidance is insufficient because BPA is so widely used that consumers would be overburdened and uninformed due to the lack of labeling of plastics.

The Advocacy Group Perspective

Safer Chemicals, Healthy Families a Washington D.C. coalition of 250 environmental and healthy advocacy groups has shown how states are increasing their awareness and responses to the news surrounding bisphenol A.³⁰ Their goal is to encourage the federal government to change regulations so that manufacturers are prevented from using toxic chemicals in consumer products.³¹ The coalition states that the Toxic Substances Control Act of 1976 (TSCA) is not effectively controlling dangerous chemicals. By updating TSCA, Congress can create a viable chemical policy that will ensure public and environmental health and re-establish world market confidence of U. S. products.³² In order to address the most dangerous substances, green

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³⁰ Jask Kaskey, "U.S. States Passing More Laws to Curb Chemicals, Groups Say," Nov. 17, 2010, available at <http://www.bloomberg.com/news/2010-11-17/u-s-states-passing-more-laws-to-curb-chemicals-groups-say.html>.

³¹ Safer Chemicals, Healthy Families, "What We Want," 2009, available at <http://www.saferchemicals.org/about/want.html>.

³² *Id.* at 8.

chemical research should be expanded and there should be a phase out of chemicals that are known to cause harm to consumers.³³

The proposals made by Safer Chemicals, Healthy Families are more beneficial than the state proposals because they call for a broad standard that will protect all of the vulnerable parts of the population. This includes pregnant woman and chemical workers in addition to the infants and toddlers that some states are currently protecting.³⁴ The demand to reform TSCA is a critical part of this proposal because it would establish a nationwide precedent that will benefit many more U.S. residents. The FDA notes that infants are the most sensitive population if exposed to BPA because their neurological and endocrine systems are still developing and their ability to detoxify and eliminate substances like BPA is not matured.³⁵ This is significant because reforming TSCA would fully protect vulnerable populations since there is a national, and not solely statewide, market for baby products. The reform of TSCA would include steps to test the most frequently used chemicals of the 83,000 listed. This will increase awareness and ideally would lead to testing all chemicals for use in consumer products. It is important that TSCA transforms into legislation that prohibits dangerous additives after testing rather than simply reporting that such chemicals are used.

Conclusion

The use of bisphenol A in products for infants and young children should be banned at a federal level. It is the responsibility of adults to help the younger members of the population because they are the most vulnerable. If there is some concern for risks from BPA exposure, the priority should be put on infants and toddlers because their bodies cannot physically tolerate the

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³³ *Id.* at 8.

³⁴ *Id.* at 8.

³⁵ United States Food and Drug Administration, "Bisphenol A (BPA)," Jan. 10, 2010, available at <http://www.fda.gov/newsevents/publichealthfocus/ucm064437.htm>.

substance. This could result in negative consequences for these children as they develop. There are many other ways of being exposed to BPA because it is used in many everyday products. This should lead to regulation of all products containing BPA including testing for quantity and possible effects. This is a step that can happen over a longer period of time than an instant ban because it requires effort from manufacturers.

Further research should be invested into developing safer chemicals. This is a step that is in the interest of both consumers and manufacturers because it will ensure consumer safety without significant financial loss to manufacturers. Research into safer chemicals has helped create a safer environment in the past. In 1987 the Montreal Protocol was signed to curtail the production of chlorofluorocarbons (CFCs) used in refrigerants and aerosol sprays because they contributed to the depletion of the ozone layer.³⁶ In this situation, there was significant research into a replacement so DuPont, the company that produced both CFCs and the replacement was able to make an economically viable transition.³⁷ The government and the manufactures of bisphenol A should take this strategy so that companies are still able to operate as chemical suppliers without increased harm to consumers. There are alternatives to BPA such as oleoresin made from a mixture of oil and a resin extracted from plants such as pine. Unfortunately the new can costs 14% more to make, which is 2.2 cents a can.³⁸ Furthermore oleoresin does not work as a lining in canned tomato products. Further research needs to be done to find an alternative for canned goods because even products that contain small amount of tomato such as baked beans cannot be put in oleoresin cans. Plastic manufacturers have found an alternative in

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³⁶ Alan M. Rugman & Alain Verbeke, "Six cases of corporate strategic responses to environmental regulation," Aug. 2000, *European Management Journal*, 18, 4, available at <http://www.sciencedirect.com/science/article/B6V9T-40X8F1R-7/2/82be1311ba8eb1e45e80cd91c9f2baf1>.

³⁷ *Id.* at 10

³⁸ Lyndsey Layton, "Alternatives to BPA containers not easy for U.S. foodmakers to find," Feb. 23, 2010, *The Washington Post*, available at <http://www.washingtonpost.com/wp-dyn/content/article/2010/02/22/AR2010022204830.html>.

polypropylene.³⁹ The use of polypropylene should become a norm while manufacturers and the FDA invest in research to find canning alternatives.

The current legal framework for bisphenol A is not effective because it simply requires that manufacturers report to the federal government that they use the chemical. Under the Toxic Substances Control Act manufacturers do not have to go to any further measures. There are many products consumers use daily that contain BPA yet there is currently no numerical restriction of the chemical's use in plastic products. The European Union currently has a cap at 0.5 milligrams per kilogram of body weight per day. Concurrent with a ban on infant and toddler products, a cap on exposure based on body weight is an option the United States can adopt as a preliminary measure to protect older children and adult consumers while research continues to determine the overall future of the relationship between public health and the use of bisphenol A.

³⁹ *Id.* at 10.

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Citation Style: Legal Citation, <http://www.law.cornell.edu/citation/#>

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