

# MAINE BOARD OF ENVIRONMENTAL PROTECTION

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**IN RE: CITIZEN PETITION TO REQUIRE  
SAFER ALTERNATIVES TO BISPHENOL A (BPA)  
IN FOOD AND BEVERAGE PACKAGING  
FOR YOUNG CHILDREN**

*Filed by*

**869 VOTERS REGISTERED IN  
THE STATE OF MAINE**

*and the*

**ALLIANCE FOR A CLEAN & HEALTHY MAINE,  
ENVIRONMENTAL HEALTH STRATEGY CENTER,  
ENVIRONMENT MAINE,  
MAINE COUNCIL OF CHURCHES,  
MAINE HEALTHY CHILDREN'S PROJECT OF THE  
LEARNING DISABILITIES ASSOC. OF MAINE,  
MAINE LABOR GROUP ON HEALTH,  
MAINE ORGANIC FARMERS &  
GARDENERS ASSOCIATION,  
MAINE PEOPLE'S ALLIANCE,  
MAINE WOMEN'S LOBBY,  
NATURAL RESOURCES COUNCIL OF MAINE,  
PHYSICIANS FOR SOCIAL RESPONSIBILITY  
MAINE CHAPTER,  
PLANNED PARENTHOOD OF NORTHERN  
NEW ENGLAND, and the  
TOXICS ACTION CENTER.**

**CITIZEN PETITION TO  
INITIATE RULEMAKING**

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Filed June 21, 2012

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**PETITION FOR RULEMAKING TO REQUIRE SAFER ALTERNATIVES TO THE PRIORITY CHEMICAL BISPHENOL A (“BPA”) IN PACKAGING USED FOR INFANT FORMULA, BABY FOOD, AND TODDLER FOOD AND BEVERAGES.**

NOW COME 869 registered voters of the state of Maine, together with the Alliance for a Clean and Healthy Maine, the Environmental Health Strategy Center, Environment Maine, Maine Council of Churches, Maine Healthy Children's Project of the Learning Disabilities Association of Maine, Maine Labor Group on Health, Maine Organic Farmers & Gardeners Association, Maine People's Alliance, Maine Women’s Lobby, Natural Resources Council of Maine, Physicians for Social Responsibility/Maine Chapter, Planned Parenthood of Northern New England and the Toxics Action Center, (together as “Petitioners”) to petition the Maine Board of Environmental Protection (“Board”) pursuant to 5 M.R.S.A. § 8055 to initiate rulemaking to amend the state regulation entitled “*Designation of Bisphenol A as a Priority Chemical and Regulation of Bisphenol A in Children’s Products,*” 06-096 CMR ch. 882, to:

1. Add a definition of “Toddler food” to mean any food or beverage other than baby food or infant formula that is intended or intentionally marketed for use by children under three years of age;
2. Extend the existing prohibition on the sale of children’s products containing bisphenol A (“BPA”) to include containers of infant formula and baby food, effective January 1, 2013, and containers of toddler food, effective January 1, 2014; and
3. Clarify that BPA is intentionally added to a product or product packaging whenever a component of that product or product packaging is made from polycarbonate plastic or an epoxy resin containing BPA.

The text of the proposed rule modification and signed petition, as verified and certified pursuant to 21-A M.R.S.A. § 354(7), have been submitted to the Board simultaneously with this Petition, and the materials circulated during the petition drive are attached as Ex. 1.

## **I. SUMMARY**

Bisphenol A is a known endocrine disruptor and developmental toxicant. Hundreds of peer-reviewed scientific studies have documented adverse consequences of low dose exposures in humans and animals, causing leading researchers, regulatory agencies and public health experts to express concern over low-dose effects of BPA on human hormone and reproductive systems.

The Board of Environmental Protection took important first steps towards protecting Maine children from exposure to BPA by designating it as Maine's first priority chemical, and by prohibiting, as of January 1, 2012, the sale, of baby bottles, sippy cups and other reusable food and beverage containers that contain BPA. In enacting the sales prohibition, the Board found that BPA migrated into food and beverages from reusable food and beverage containers, and that there was a "possibility for effects at low doses, including disruption of the endocrine, or hormone, system of the body". Additionally, the Board found that there were a variety of safe and available alternatives to containers made with BPA, due in part to market response to consumer preferences and increased regulation in other states.

At the same time, the Board required manufacturers to report use of BPA in infant formula and baby food packaging and to provide an assessment of alternatives. Although industry has not fully complied with these requirements, there is abundant evidence now available that BPA-free packaging is widely available and safer. In light of this evidence petitioners request that the Board take the next logical step towards protecting the children of Maine from exposure to BPA by prohibiting the sale, offer for sale, or distribution for sale of infant formula, baby food, and toddler food and beverages in packaging that contains the priority chemical.

## II. THE PETITIONERS

This petition is brought by 869 registered Maine voters who reside in 42 cities and towns covering the breadth of Maine, from Kennebunk to Farmington, and from Bridgton to Lubec. The petitioners reside in 12 Maine counties: Androscoggin, Cumberland, Franklin, Hancock, Kennebec, Knox, Oxford, Penobscot, Sagadahoc, Waldo, Washington, and York.<sup>1</sup> This petition is also brought by the following organizations:

The Alliance for a Clean and Healthy Maine (“ACHM”) is a diverse coalition of Maine-based organizations working to protect human health by phasing out toxic chemicals that build up in the food web and our bodies. The Alliance believes that all Maine people have a right to a healthy environment where they live, work and play; envisions a future free of exposure to harmful chemicals in air, water or food; and seeks to build a healthy economy that provides good jobs producing clean products and services. Since 2002, the Alliance has campaigned to replace dangerous chemicals (such as arsenic, mercury, lead, brominated flame retardants, and BPA) used in everyday consumer products with safer alternatives, and ensure the responsible collection and disposal of consumer products containing toxic chemicals. The Alliance actively supported passage and implementation of the Kid-Safe Products Act, including the existing BPA regulation.

Environmental Health Strategy Center (“EHSC”) is a non-profit Maine corporation founded in 2002 with the purpose of promoting human health and safer chemicals in a sustainable economy. EHSC uses science-based research and advocacy to improve health through safer chemical policy reform at the federal and state levels. EHSC has worked for 10 years to support Maine policies and programs to replace dangerous chemicals - such as lead,

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<sup>1</sup> See Ex. 1. The signed petitions, as verified and certified pursuant to 21-A M.R.S.A § 354(7), have been provided to the Board simultaneously with this petition.

mercury, brominated flame retardants, PVC, BPA, and others - in everyday consumer products with safer chemicals. EHSC led the campaigns in 2008 and 2011 to enact and defend Maine's Kid-Safe Products Act, and is a founding member of the Alliance for a Clean and Healthy Maine. EHSC's "Sustainable Economy" program promotes the design and manufacture of safer chemicals and products using "green chemistry" and supports economic development based on the sustainable production of bioplastics from Maine potatoes and other biomass.

Environment Maine is a non-profit, membership organization dedicated to preserving Maine's wild places and natural beauty, improving air and water quality, reducing toxic threats in the environment and everyday products, and building a clean energy future. Environment Maine works on behalf of its more than 13,000 members and activists, many of whom are deeply concerned about the health and environmental threats of toxic chemicals in everyday products. Environment Maine also is part of Environment America, a national federation of state-based environmental advocacy organizations, and joined the Steering Committee of the Alliance for a Clean & Healthy Maine in 2011. Environment Maine helped pass the 2011 Maine ban on BPA in reusable food and beverage items, has worked at the state level to reduce the threat of pesticides, and has a long history of working to improve federal policy to protect the public and environment from toxic threats.

Maine Council of Churches ("MCC") is an ecumenical organization comprised of nine member denominations dedicated to the vision of a sustainable, just, and compassionate world by "Seeking Common Ground, Working for the Common Good". For the past decade under the leadership of the National Council of Churches, MCC has adopted an Environmental Health and Toxics Project as an arm of its Environmental Justice program. With particular concern for three populations of people – the poor, children and minorities – MCC partners with the Alliance for a

Clean and Healthy Maine. Activities include church presentations, legislative advocacy, distribution of the “Christian Principles for a Healthy Body and Spirit”, and member education through MCC’s newsletters and website.

Maine Healthy Children’s Project is a program of the Learning Disabilities Association of Maine (LDA-ME), a statewide nonprofit family organization founded in 1980 whose mission is to provide support, education and advocacy to individuals with learning and attention disabilities, their families and the professionals who work with them. LDA-ME seeks to reduce the incidence of these disabilities in future generations. According to a 2011 report issued by the U.S. Centers for Disease Control and Prevention, nearly 1 in 6 American children were diagnosed with a learning or developmental disability in 2008. The National Academy of Sciences estimates that environmental factors, including toxic chemicals, cause or contribute to at least a quarter of learning and developmental disabilities in American children. For the past 10 years, LDA-ME has strongly supported efforts to eliminate environmental factors that contribute to preventable disabling conditions, such as exposure to unnecessary toxic chemicals in everyday consumer products. The rapidly developing brain of the fetus, infant and young child is much more susceptible to toxic substances than the adult brain. Low-dose BPA exposure is implicated in changes in brain structure, brain chemistry and behavior and can have profound neurodevelopmental effects with lifelong consequences.

Maine Labor Group on Health (“MLGH”) is a statewide occupational safety and health organization was founded in 1977. MLGH’s goal is to prevent harm to the health of Maine’s people where they work, live and play. According to the National Institute for Occupational Safety and Health (NIOSH), 4% to 10% of U.S. cancers (48,000 incident cases annually) are

caused by occupational exposures.<sup>2</sup> Hazardous chemicals used in everyday consumer products expose workers and their families both at work and at home. Phasing out dangerous chemicals protects workers throughout the manufacturing and supply chain, and will help protect children and families at home. MLGH has played a role in passing Maine's Right-to-know law, Toxic Chemical Use Reduction Act, and the Kid-Safe Products Act.

Maine Organic Farmers and Gardeners Association (MOFGA), formed in 1971, is the oldest and largest state organic organization in the country. MOFGA has members in more than 6,500 households and businesses in Maine and beyond. Its mission is to help farmers and gardeners grow organic food, fiber and other crops; protect the environment; recycle natural resources; increase local food production; support rural communities; and illuminate for consumers the connection between healthful food and environmentally sound farming practices. MOFGA tracks emerging science and public awareness about exposure to toxic chemicals through the food system. Through public policy initiatives, MOFGA focuses on human exposure to chemicals from the ubiquitous presence of chemicals in the water, air and soil; from the presence of chemicals in food packaging and distribution; and from the chemicals in food cultivation and processing. MOFGA is particularly concerned about the presence of BPA in food packaging, and the potential contamination of organic foods contained in BPA packaging.

Maine People's Alliance (“MPA”), with 33,000 members, is Maine's largest grassroots community action organization and is dedicated to social, racial and environmental justice. MPA's purpose is to bring individuals and organizations together to realize shared goals. MPA focuses on leadership development to promote positive social change and is known for grassroots organizing and education. MPA, through its civic campaigns, makes personal contact

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<sup>2</sup> See <http://www.cdc.gov/niosh/topics/cancer/>.

with more than 100,000 Mainers every year. MPA advocates for responsible stewardship of our natural resources and a clean, toxic-free environment. MPA has long led the fight to stop the spread of mercury pollution at the former HoltraChem plant in Orrington and to hold corporate polluters responsible across the state, and has also worked to make sure the products used by Maine people every day are safe for themselves, their children and the environment.

Maine Women's Lobby ("MWL") has worked since 1978 to advance women's economic, social, and political equality – to the benefit of all Maine women and families. The MWL has developed cutting-edge state policies around equal pay, domestic violence prevention, employment security, and more, while training women leaders to be active citizens in their communities. The Maine Women's Lobby partners with our sister organization, the Maine Women's Policy Center, to deepen law-makers', the media, and the public's understanding of the issues facing women and girls in Maine. Our work in partnership with the Environmental Health Strategy Center and the Alliance for a Clean and Healthy Maine since 2006 has helped to bring an important population to the discussion about safe chemicals policy reform; women who care deeply about creating a safe home for their families, one free of harmful chemicals.

Natural Resources Council of Maine ("NRCM") is a nonprofit membership organization dedicated to protecting, restoring, and conserving Maine's environment, now and for future generations. Through NRCM's Toxic-Free Maine Project, NRCM works to protect Maine's people, wildlife, and environment from toxic pollution and promote clean, sustainable industrial practices in Maine and around the nation. NRCM has successfully led efforts to eliminate many sources of toxic pollution within the state. NRCM works in conjunction with the Alliance for a Clean and Healthy Maine, a coalition of public health, labor, business and environmental organizations, to phase out toxic chemicals in favor of safer alternatives.

Physicians for Social Responsibility – Maine Chapter, (“PSR ME”) is a non-profit advocacy organization that is the medical and public health voice for education and policies to prevent toxic degradation of the environment, to mitigate and adapt to climate change, and to prevent nuclear proliferation. PSR ME uses science-based medical research and advocacy to protect human health through education and policy reform at the federal and state levels. PSR ME has worked with the Alliance for a Clean and Healthy Maine to support policies and programs that protect human and environmental health. Through work with its Pediatric Toolkit and Toxic Teas, PSR ME has trained medical professionals throughout Maine to educate patients about toxics in everyday household products like baby bottles, food cans, personal products, and medical supplies.

Planned Parenthood of Northern New England (“PPNNE”) educates young women about the threats of toxicants and brings young women’s voices to the environmental health movement. Last year, 78% of PPNNE’s 11,600 patients in Maine were under 30 year old. The goal of PPNNE’s environmental health program – and its participation in the Alliance for a Clean and Healthy Maine – is to improve and protect the health and fertility of the women and families of northern New England by decreasing their exposure to harmful contaminants in our environment.

Toxics Action Center works side by side with community groups and leaders who are facing a toxic pollution problem or threat at the local level. Many of the community members the Center works with are very concerned about their family's exposure to BPA and other chemicals found in household products. In 2010, Toxics Action Center wrote and released a report entitled “The Latest Science on Bisphenol A, Health and Exposure.”<sup>3</sup>

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<sup>3</sup> Available at <http://www.toxicsaction.org/how-we-can-help/information>.

### III. STATUTORY AND REGULATORY FRAMEWORK

In 2008, the Legislature adopted *An Act to Protect Children’s Health and the Environment from Toxic Chemicals in Toys and Children’s Products* (hereinafter as the “*Kid-Safe Products Act*” or “*Act*”)<sup>4</sup> establishing state policy “to reduce exposure of children and other vulnerable populations to chemicals of high concern by substituting safer alternatives when feasible.” 38 M.R.S.A. § 1692.<sup>5</sup> To accomplish this goal, the law confers upon the Board of Environmental Protection the power to adopt rules to require safer alternatives by prohibiting the sale of children’s products containing greater than *de minimis* levels of priority chemicals when safer alternatives are available. *Id.* §§ 1692, 1696.

The *Kid-Safe Products Act* was reaffirmed by unanimous vote of the Legislature in 2011, despite a concerted attempt to repeal key provisions of the Act.<sup>6</sup> In unanimously approving the Environment and Natural Resources *Committee Amendment* “A” to LD 1129,<sup>7</sup> the 125<sup>th</sup> Legislature kept intact the *Act’s* central goal of protecting Maine children by retaining, in its entirety, the Board’s authority to prohibit the sale of products containing a priority chemical when safer alternatives are available.<sup>8</sup> The 125th Legislature also reviewed and authorized final adoption of the first ever phase-out requirement implemented under the Act by affirming rules provisionally adopted by this Board to prohibit the manufacture, distribution, or sale of reusable

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<sup>4</sup> P.L. 2007, ch. 643, attached as Ex. 2.

<sup>5</sup> For the Board’s convenience, a codified version of the Kid Safe Products Act as amended, 38 M.R.S.A. §§ 1691-1699-B, is attached as Ex. 4.

<sup>6</sup> See 125<sup>th</sup> Legislature, LD 1129 (as originally presented by Rep. Hamper), attached as Ex. 5.

<sup>7</sup> See 125<sup>th</sup> Legislature, Environment and Natural Resources Committee, *Committee Amendment* “A” to LD 1129, attached as Ex. 6.

<sup>8</sup> P. L. 2011, ch. 319, § 7, attached as Ex. 3.

food and beverage containers that contain BPA, including plastic baby bottles, sippy cups and reusable water bottles.<sup>9</sup>

A. STATUTORY CRITERIA FOR SALES PROHIBITION OF PRODUCTS CONTAINING PRIORITY CHEMICALS.

The *Kid-Safe Products Act*, as amended, establishes two findings the Board must make in order to adopt rules “prohibiting the manufacture, sale or distribution in the State of a children’s product containing a priority chemical in an amount greater than a de minimis level.” 38 M.R.S.A. § 1696(1). The Board must find that:

- (A) Distribution of the children's product directly or indirectly exposes children and vulnerable populations to the priority chemical; and
- (B) One or more safer alternatives to the priority chemical are available at a comparable cost.

*Id.* §§ 1696(1)(A)-(B). If there are several available safer alternatives to a priority chemical, the Board may prohibit the sale of children’s products that “do not contain the safer alternative that is least toxic to human health or least harmful to the environment.” *Id.* The effective date of any sales prohibition may not be sooner than 12 months after first publication of notice of the rulemaking. *Id.*

A children’s product is defined in the *Act* as “a consumer product intended for, made for or marketed for use by children under 12 years of age.” *Id.* § 1691(7). Food and beverage packaging is exempt, “unless that product is intentionally marketed or intended for the use of children under 3 years of age.” *Id.* § 1697(8). *De minimis* levels are defined, in the case of

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<sup>9</sup> Resolves 2011, ch. 25, attached as Ex. 7, affirming provisional rules 06-096 CMR ch. 882, § 5.

intentionally-added chemicals,<sup>10</sup> as the “practical quantification limit”<sup>11</sup> or, in the case of a chemical that is a “contaminant”<sup>12</sup> present in a component of a children’s product, a concentration of 100 parts per million. *Id.* § 1691(8-B). The *Act* exempts from a sales prohibition products containing a priority chemical “that occurs in a product component only as a contaminant if the manufacturer had in place a manufacturing control program and exercised due diligence to minimize the presence of the contaminant in the component.” *Id.* § 1697(11).

The *Act* provides a series of presumptions to guide the board in its determination of the availability of safer alternatives. Specifically, the *Act* states that, “in the absence of persuasive evidence to the contrary,” the Board may:

- (A) Presume that an alternative is a safer alternative if the alternative is not a chemical of concern;
- (B) Presume that a safer alternative is available if the sale of the children's product containing the priority chemical has been banned by another state within the United States based on the availability of a safer alternative;
- (C) Presume that a safer alternative is available if the children's product containing the priority chemical is an item of apparel or a novelty; and
- (D) Presume that a safer alternative is available if the alternative is sold in the United States.”

*Id.* §§ 1696(2)(A)-(D).

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<sup>10</sup> The *Act* defines an intentionally-added chemical as “a chemical that was added during the manufacture of a product or product component to provide a specific characteristic, appearance or quality or to perform a specific function.” 38 M.R.S.A. § 1691(9-A).

<sup>11</sup> The *Act* defines the practical quantification limit as:

the lowest concentration of a chemical that can be reliably measured within specified limits of precision, accuracy, representativeness, completeness and comparability during routine laboratory operating conditions. The practical quantification limit is based on scientifically defensible, standard analytical methods. The practical quantification limit for a given chemical may be different depending on the matrix and the analytical method used.

38 M.R.S.A. § 1691(10-A).

<sup>12</sup> The *Act* does not further define the term contaminant.

B. CRITERIA THAT THE LEGISLATURE INTENTIONALLY EXCLUDED FROM THE RULEMAKING PROCESS.

Importantly, the 2011 debate over amendments to the *Kid-Safe Products Act* also clarified what is NOT REQUIRED in the rulemaking process to prohibit use of a priority chemical in certain products. In 2011, a number of changes to 38 M.R.S.A. § 1696 were proposed that were considered and rejected in Committee. *See* LD 1129 (presented by Rep. Hamper), attached as Ex. 4. This legislative history provides conclusive evidence that the following factors, which may be raised in opposition to this petition, are not among the criteria that can be considered by the Board. *See Doe v. Chao*, 540 U.S. 614, 622 (2004) (consideration and rejection of bill language is evidence of deliberate legislative intent to exclude provision from statute).

First, the proposed 2011 amendments to the *Act* sought to require that, prior to prohibiting the manufacture, sale or distribution of a product containing a priority chemical, the Board must find that distribution of that product will result in harm to children that use the product. *See* LD 1129, § 11 (proposing to amend 38 M.R.S.A. § 1696(1)(A)). This requirement was expressly rejected and removed in committee in its entirety and is evidence of legislative intent that a product-specific harm analysis is not required in order to enact a sales ban.<sup>13</sup>

Second, the proposed amendments also sought to repeal the presumptions regarding safer alternatives, *see* LD 1129, § 12 (proposing to repeal 38 M.R.S.A. § 1696(2)), and instead to require that any ban be based upon a “comparative assessment of hazards, risks, costs and benefits.” LD 1129, § 11 (proposing to amend 38 M.R.S.A. § 1696(1)(B)). These requirements

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<sup>13</sup> The general analysis of potential harm from exposure to a chemical is part of the process to designate it as a priority chemical. 38 M.R.S.A. §§ 1693-1694. In the case of BPA, the harm determination has already been made by this Board (06-096 CMR, ch. 882, § 3, Ex. 9), with the concurrence of the Maine Centers for Disease Control. (Ex. 12).

were also rejected, providing definitive evidence of legislative intent that a comparative risk or cost assessment of available alternatives is not required to demonstrate the availability of safer alternatives, and is not a precondition to phasing out a specific use of a priority chemical. Rather, as the Legislature unanimously affirmed, the presumptions regarding the availability of safer alternatives still apply.<sup>14</sup>

C. REGULATORY CRITERIA FOR SALES PROHIBITION OF PRODUCTS CONTAINING PRIORITY CHEMICALS.

The Board's rules regulating use of toxic chemicals in children's products replicate the statutory criteria to prohibit sale of products containing an intentionally-added priority chemical. Thus, such products may be phased out if the Board finds that (1) distribution of the product directly or indirectly exposes children and vulnerable populations to the priority chemical, and (2) one or more safer alternatives are available at comparable cost. 06-096 CMR, ch. 880, § 4(A)(1)-(2).<sup>15</sup>

Consistent with the statutory presumptions, the rules also provide that, in the absence of persuasive evidence to the contrary, the Board may:

- (a) Presume that an alternative is safer if the alternative does not contain a chemical of high concern;
- (b) Presume that an alternative is available if the alternative is sold in the United States;

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<sup>14</sup> A third amendment advanced by LD 1129 would have prohibited initiation of rulemaking to ban a product pursuant to 38 M.R.S.A. § 1696 unless prior notice was provided to the Legislature. *See* LD 1129, § 1. The Committee Amendment modified this provision, expressly exempting a citizen petition from the requirement to provide prior notice legislative notice. P.L. 2011, ch. 319, § 1 (codified at 5 M.R.S.A. § 8060(7)). *See also* 38 M.R.S.A. § 1696(6) (authorizing any person to petition the Board pursuant to 5 M.R.S.A. § 8055 to ban products containing priority chemicals). As has always been the case, rules prohibiting the sale or distribution of products containing priority chemicals are deemed major substantive rules that require review and authorization by the Legislature prior to final adoption. *Id.* § 1696(1).

<sup>15</sup> The Chapter 880 rules are attached as Ex. 8

- (c) Presume that an alternative is both safer and available if;
  - i. The product containing the priority chemical has been banned by another U.S. State; or
  - ii. The product containing the priority chemical is an item of apparel or novelty.

*Id.* §§ 4(B)(3)(a)-(c).

If evidence is presented to rebut the presumptions, the Chapter 880 regulations provide further guidance regarding the determination of the availability and safety of alternatives. *Id.* § 4. Regarding availability, the rules provide that, “[a]n alternative is ‘available at comparable cost’ if it is offered for sale in the U.S. at a price that is affordable as demonstrated by the number of product units sold.” *Id.* § 4(A). Noting that “[t]he essential inquiry for the board is the *cost to consumers* to substitute a technically-feasible alternative”, *id.* § 4(B)(1) (emphasis added), the regulations instruct the Board to consider:

- (a) The extent to which the alternative currently is available in the marketplace;
- (b) The affordability of the alternative as demonstrated by sales volumes;
- (c) The purchase price differential between the product containing the priority chemical and the alternative; and
- (d) In the case of an alternative that is not already offered for sale, information bearing on the ease with which the alternative could be substituted for the use of the priority chemical and introduced into the U.S. market.

*Id.* §§ § 4(B)(1)(a)-(d).

Regarding safety, the rules provide that “[a]n alternative is safer if, when compared to a priority chemical that it could replace, the alternative has not been shown to pose the same or greater potential for harm to human health or the environment as the priority chemical.” *Id.* § 4(B)(2). In determining whether the alternative has been shown to pose the same or greater potential for harm, the regulations instruct the Board to consider a number of factors, including:

- (a) The propensity of the chemical to be released from the product during use;

- (b) The likelihood that children will be exposed to the chemical as a result of its use in the product and the predicted magnitude of that exposure;
- (c) The persistence of the chemical and its tendency to bioaccumulate;
- (d) The potential human health effects from exposure to the chemical; and
- (e) The ecotoxicity of the chemical.

*Id.* §§ 4(B)(2)(a)-(e).

Under both statute and rule, a manufacturer may seek a waiver from a sales prohibition for one or more specific uses of a priority chemical by showing that an alternative is not technically or economically feasible for that use and that steps have been or will be taken to minimize use of the priority chemical. 38 M.R.S.A. § 1696(5), 06-096 CMR ch. 880, § 4(C). Waivers may be granted by the Board for a term of up to five years, upon a finding that “there is a need for the children's product in which the priority chemical is used and there are no technically or economically feasible alternatives for the use of the priority chemical in the children's product.” *Id.*

#### **IV. Regulatory History of Bisphenol A (BPA) in Maine**

In December 2010, the Board designated BPA as Maine’s first priority chemical, 06-096 CMR ch. 882, § 3,<sup>16</sup> and provisionally adopted a rule prohibiting the sale, offer for sale, or distribution for sale in Maine of any reusable food or beverage container (e.g., baby bottles or sippy cups) containing intentionally-added BPA. *Id.* § 5. The Legislature affirmed the phase-out of BPA in reusable food and beverage containers by a near-unanimous majority. Resolves 2011, ch. 25, and, after final adoption by this Board last August, the phase-out of BPA in baby bottles and sippy cups became effective January 1, 2012.

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<sup>16</sup> The Chapter 882 rules are attached as Ex. 9.

The routine technical portion of the rule also required manufacturers to report on the use of BPA in infant formula or baby food products sold in packaging that contains intentionally-added BPA, and to provide an evaluation of alternatives to BPA-containing packaging. 06-096 CMR ch. 882, § 4. The BPA use reports were due on October 3, 2011 for any regulated product sold in the State after January 9, 2011, the effective date of the rule. The deadline for submitting the alternatives assessments was set at January 1, 2012. *Id.* § 4.

A. THE BOARD HAS ALREADY FOUND THAT BPA IS A KNOWN ENDOCRINE DISRUPTOR AND DEVELOPMENTAL TOXICANT.

The Board listed BPA as a priority chemical, based upon “[c]oncern over potential health effects ... due to findings that show BPA migrating into food and beverages from storage containers ... and studies that show the possibility for effects at low doses, including disruption of the endocrine, or hormone, system of the body.” Maine Board of Environmental Protection, *Bisphenol A Support Document & Ch. 882 Basis Statement* (hereinafter as “*Basis Statement*”), at 4 (June 2, 2010), attached as Ex. 10. Among other studies, the 2010 rulemaking cited the U.S. National Toxicology Program findings that BPA is an endocrine disruptor and developmental toxicant at low doses, and that there is “*some concern* for effects on the brain, behavior, and prostate gland in fetuses, infants and children at current human exposures to bisphenol A.” *Id.* (*emphasis in original*).<sup>17</sup> Additionally, the Board cited findings by the Chapel Hill Bisphenol A Expert Panel that,

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<sup>17</sup> As explained by DEP and the Maine Centers for Disease control, the term “some concern” is the midpoint of the National Toxicology Program’s five levels of concern scale, and requires documentation of adverse effects in numerous studies for each outcome, as well as concordance between the exposures or body burdens of BPA in the animal studies compared to those in humans environmentally exposed. *ME-CDC Concurrence on Designating Bisphenol A as Chapter 882 Priority Chemical* at 2.

more than 95% of people sampled have BPA exposure within the range that is predicted to be biologically active based on animal studies. They also found that animals exposed to low doses of BPA exhibit adverse effects consistent with recent trends in human disease, such as increases in prostate and breast cancer, uro-genital abnormalities in male babies, a decline in semen quality in men, early onset of puberty in girls, metabolic disorders including insulin resistant (type 2) diabetes and obesity, and neurobehavioral problems such as attention deficit hyperactivity disorder (ADHD).

*Id.* at 8.

As required by statute, the Department of Health and Human Services, Maine Center for Disease Control and Prevention (“ME-CDC”), formally concurred with the Board’s findings. After conducting its own independent review of the literature, the ME-CDC determined that “the current consensus of most scientists, as well as U.S. and international governmental agencies, is that there is sufficient evidence that BPA produces adverse effects at environmentally relevant doses.” Dr. Deborah Rice, *ME-CDC Concurrence on Designating Bisphenol A as Chapter 882 Priority Chemical* (hereinafter as “*ME-CDC Concurrence*”), at 2 (May 13, 2010), attached as Ex. 12. The ME- CDC noted that BPA experts had identified well over 100 studies documenting adverse effects on growth, brain development, behavior, early onset of puberty, changes in sex hormones, male fertility and immune function as a result of exposure to environmentally relevant doses of BPA during the prenatal or postnatal period in animal models, and a concordance between the animal studies and environmentally exposed humans. *Id.* at 2.

Both the Department and the Maine CDC also found that biomonitoring and other sampling has identified BPA in human blood and tissue and other bodily fluids; in household dust, indoor air, drinking water and elsewhere in the home environment; in fish, wildlife and the natural environment; and in consumer products used or present in the home. 06-096 CMR ch. 882, § 3(B). In particular, the Maine CDC noted that an ongoing study by the U.S. Centers for Disease Control, which collects data representative of the U.S. population, found BPA is present

in 93% of all individuals, with BPA levels in children 6-11 years old almost twice as high as adults (younger children were not sampled). Since BPA is not considered to bioaccumulate in the body, ME-CDC found that these data suggest ongoing exposure. *ME-CDC Concurrence* at 3.

B. THE BOARD FOUND IN 2010 THAT BPA IS INTENTIONALLY ADDED TO FOOD AND BEVERAGE PACKAGING AND PACKAGING COMPONENTS.

As part of the 2010 BPA rulemaking, the Board also made several findings relevant to the proposed rule herein. First, as a predicate to the 2010 Rule, the Board made an initial determination that BPA is always intentionally added to food and beverage packaging where epoxy resins or polycarbonate plastics are used as a component of the packaging. As noted in the *Basis Statement* for the rule, BPA is a monomer manufactured through the condensation of phenol and acetone in the presence of an acid catalyst and is used in the manufacture of epoxy resins and polycarbonate plastic to impart the characteristics of toughness, adhesion, formability, and chemical resistance. *Basis Statement* at 7. Those performance characteristics have led industry to specifically select product components containing BPA for food packaging applications. For example, the Board found that “[c]ured epoxy resins are used to coat the interior surface of most food and beverage cans (or lids) to prevent corrosion of the can and contamination of the food by metals or bacteria.” *Id.*

In light of the use of BPA for these specific purposes, the Board rejected industry arguments that BPA is a contaminant and is not intentionally added to food and beverage containers. Instead, the Board found that, “Bisphenol A is the building block of . . . the epoxy resins . . . as such, it contributes to the attributes of these materials (e.g. adhesion and flexibility) and is therefore appropriately considered to have been *intentionally added* to impart the desired characteristics in the final product.” *Supplemental Basis Statement, Chapter 882 Designation of*

*Bisphenol A as a Priority Chemical and Regulation of Bisphenol A in Children's Products*, at 5 (2010) (emphasis added), attached as Ex. 11.

C. THE BOARD HAS ALREADY FOUND THAT MAINE INFANTS AND TODDLERS ARE EXPOSED TO BPA THROUGH INGESTION OF FOOD AND BEVERAGES SOLD IN PACKAGING CONTAINING BPA.

Next, the 2010 Chapter 882 Rule also directly addressed the two statutory criteria – exposure and alternatives – at issue for the three products proposed for the prohibition here. Regarding the exposure criterion, the Board found, based on biomonitoring and sampling, that children in Maine are both directly and indirectly exposed to BPA and that BPA is present in human tissue and bodily fluid, in household dust, air and drinking water, and in the natural environment. 06-096 CMR ch. 882, § 3(B). As documented in the *Basis Statement* accompanying the rule, the Board further found that the greatest exposure of Maine children to BPA is from ingestion of food and beverages sold in BPA-containing packaging:

Concern over potential health effects from bisphenol A has grown in recent years due to findings that show BPA migrating into food and beverages from storage containers, including baby bottles, and studies that show the possibility for effects at low doses, including disruption of the endocrine, or hormone, system of the body. *The greatest source of non-workplace human exposure to BPA appears to be through food in BPA-containing packaging. Babies who are fed liquid canned formula from polycarbonate bottles have the highest human exposure through diet to BPA.*

*Basis Statement* at 4 (emphasis added). *See also id.* at 14 (“it is clear from the Department’s research that bisphenol A is prevalent in ... the epoxy lining of food and beverage cans.”).

The Maine CDC also found evidence of “potential ingestion of BPA by infants and children.” *ME-CDC Concurrence* at 3. Specifically, the ME-CDC found that “BPA has been found in canned liquid infant formula from a number of producers as well as other canned food.”

*Id.*

The Board's and ME-CDC's joint findings from 2010 – that consumption of food and beverages packaged in containers containing BPA, including specifically infant formula and canned foods, exposes Maine children to a priority chemical – fully satisfies the first statutory criterion for a ban on BPA in these product categories. 38 M.R.S.A. § 1696(1).

- D. THE BOARD'S 2010 RULE REQUIRED AN EVALUATION TO CONFIRM THAT ALTERNATIVES TO BPA DO NOT POSE THE SAME OR GREATER POTENTIAL FOR HARM TO HUMAN HEALTH OR THE ENVIRONMENT, BUT INDUSTRY HAS FAILED TO SUBMIT ACCEPTABLE ALTERNATIVES ASSESSMENTS.

Third, with regard to evidence that safer alternatives are available at comparable cost, in 2010 the Board found that the State of Connecticut had banned the manufacture, sale or distribution of any infant formula or baby food packaged in a plastic container, jar or can that contains BPA. 06-096 CMR ch. 882, § 3(B)(6); *Basis Statement* at 9, 14. The Board noted that the Connecticut statute fulfills one of the statutory presumptions that safer alternatives are available for these two product categories. *Basis Statement* at 14. Nonetheless, because of concerns at the time that “[t]he extent of BPA-free baby food and formula packaging is unclear,” *Basis Statement* at 10, after a workshop held Oct. 7, 2010, the Board revised and reposted the Ch. 882 rule to specifically require that manufacturers of baby food and infant formula products sold in Maine submit both BPA use data and an alternatives assessment. Thus manufacturers must:

By October 3, 2011, report their use of BPA in packaging for infant formula and baby food sold in the state of Maine after January 9, 2011, and

By January 1, 2012, submit an evaluation of alternatives to the use of BPA in packaging for infant formula and baby food, assessing the “availability, cost, feasibility and performance, including potential for harm to human health and the environment, of alternatives to bisphenol A.”

06-096 CMR, ch. 882 §§ (4)(A)(1)-(2).

Unfortunately, almost all of the companies subject to this rule have routinely violated these requirements, as shown in Table A. As a result, the Department has issued four Letters of Warning, followed by four Notices of Violation. An additional three companies have received less formal compliance requests from DEP.<sup>18</sup>

Only one of the seven companies that sold infant formula or baby food in BPA-containing packaging in Maine after January 9, 2011 reported its BPA use on time. After being warned of non-compliance by DEP, five others finally reported their BPA use many months past the deadline. One company known to have sold infant formula in BPA-based packaging in 2011 has still not properly reported. At least two baby food manufactures have never used BPA-based packaging, and are thus exempt from Maine's reporting requirements.

Similarly, not one single manufacturer submitted a BPA alternatives assessment by the January 1, 2012 deadline. Now, more than six months later, two regulated companies have not responded at all. Five companies finally submitted partial assessments. Three received Notices of Violation on June 14, 2012 for failure to submit a complete and acceptable alternatives assessment: Nestle (Gerber), Hero (Beech-Nut) and Hain Celestial (Earth's Best).

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<sup>18</sup> See Michael Belliveau, Environmental Health Strategy Center, *Safer Alternatives to Bisphenol A (BPA) Are Available for Food and Beverage Packaging for Young Children: An Assessment of BPA-Free Alternatives for Infant Formula, Baby Food and Toddler Food* (June 2012) (hereinafter as "*BPA Alternatives Assessment*"), attached as Ex. 15.

**Table A. Widespread Non-Compliance with Maine’s BPA Rule (as of June 14, 2012)**

Deadline:	Timely Reported?		Enforcement Action (Date Issued)		Basis for Enforcement Action or Compliance Request
	10/3/11	1/1/12	LETTER OF WARNING	NOTICE OF VIOLATION	
COMPANY Brand	BPA Use Report	Alternatives Assessment			
ABBOTT Similac	NO	NO	-	-	DEP requested BPA use report and an alternatives assessment (5/29/12)
MEAD JOHNSON Enfamil	YES	NO	-	-	DEP requested submission of a BPA alternatives assessment (5/29/12)
NESTLÉ Gerber	YES, LATE	Partial LATE	4/2/12		Failure to report BPA use Failure to assess BPA alternatives
				6/14/12	Failure to submit a complete and acceptable alternatives assessment
PERRIGO / PBM Parent’s Choice, etc.	YES, LATE	Partial LATE	12/21/11		Failure to timely report BPA use Failure to assess BPA alternatives
				2/21/12	Failure to submit a complete and acceptable alternatives assessment
HERO Beech-Nut	YES, LATE	Partial LATE	2/21/12		Failure to report BPA use Failure to assess BPA alternatives
				6/14/12	Failure to submit a complete and acceptable alternatives assessment
HAIN CELESTIAL Earth’s Best	YES, LATE	Partial LATE	2/21/12		Failure to report BPA use Failure to assess BPA alternatives
				6/14/12	Failure to submit a complete and acceptable alternatives assessment
STONYFIELD YoBaby	EXEMPT		-	-	No BPA used in packaging
INITIATIVE FOODS Wild Harvest	YES, LATE	Partial LATE	-	-	Alternatives assessment NOT yet considered complete and acceptable
SPROUT FOODS	EXEMPT		-	-	No BPA used in packaging

Despite rampant industry non-compliance, the Department has, to date, declined to exercise its legal authority to independently prepare an assessment of BPA alternatives at

industry expense: “If an assessment acceptable to the department is not timely submitted, the department may assess fees as provided under 06-096 CMR 881 to cover the cost of preparing an independent assessment.” 06-096 CMR ch. 880, §3 (B)(3). This jeopardizes the ability of the Department to meet its January 1, 2013 obligation to report and recommend further action on BPA to the Board of Environmental Protection, 06-096 CMR ch. 882, §4(A)(4).

These failures and delays have directly prompted this Petition. As documented in the alternatives discussion below, there is now ample evidence that one or more safer alternatives to BPA are available at comparable cost for packaging of infant formula, baby food and toddler food. Accordingly, Petitioners respectfully contend that there is no reason to further delay consideration of rules requiring implementation of these safer alternatives.

## **V. The Proposed Rule**

The Board has already designated BPA as a priority chemical based on findings that it is an endocrine disruptor and developmental toxicant that threatens the health of Maine children and has prohibited the sale of reusable food and beverage containers that contain BPA. This Petition requests that the Board take the next logical step, which is to protect our most vulnerable population – young children – from unnecessary exposure to this harmful chemical in other children’s products. The Board should enact the proposed rule because the three food and beverage products at issue here – infant formula, baby food and toddler food – are all marketed to or intended for use by children under the age of three; use of BPA in the packaging of these products directly exposes Maine children to the harmful effects of BPA at a critical stage of physical development; and safer alternatives are available that do not contain BPA or other priority chemicals and which are affordable and in widespread use.

A. BPA IS INTENTIONALLY ADDED TO FOOD AND BEVERAGE CONTAINERS.

The first determination required to prohibit sale of a product containing a priority chemical in Maine is a finding that the chemical is “intentionally added” to the product or a component of the product, 06-096 CMR ch. 880, § 4(A), and not a mere “contaminant” from the manufacturing process. 38 M.R.S.A. §§ 1691(8-B), 1691(9-A), 1696(1), 1697(11). When a chemical is intentionally added to a product or a product component, the *de minimis* level for purposes of regulation is the practical quantification limit (“PQL”), which is the lowest level that can be reliably and accurately measured. When the chemical is considered a contaminant, the *de minimis* level for purposes of regulation is 100 parts per million (ppm). *Id.* § 1691(8-B). This determination is critical to the success of the BPA rule, since much of the aggregate exposure to children comes from individual products with BPA levels below 100 ppm.<sup>19</sup> Moreover, the scientific community has increasingly focused on the adverse effects of BPA at very low doses. As ME-CDC has found, “hormonally active compounds may have opposite effects at high and low doses, and effects may be observed at low doses but not high.” *ME-CDC Concurrence*, at 2. Thus, a rule based on the contamination standard would not effectively protect our children.

As noted above, the Board has already addressed this question and conclusively determined that BPA is intentionally added to packaging for infant formula and baby food (and in fact to any product that contains an epoxy resin made with BPA, including canned foods such as those marketed to toddlers). Bisphenol A is the building block of epoxy resins, which are intentionally added components of food packaging to impact specific characteristics – including toughness, adhesion, formability, chemical resistance, prevention of corrosion, and to protect food from contamination by metals or bacteria. *Basis Statement* at 7. In light of these uses, the

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<sup>19</sup> See, e.g., *Breast Cancer Fund, BPA in Kids’ Canned Food: A Product-Testing Report* (Sept 2011). Attached as Ex. 17.

Board found that BPA is *intentionally added* in these applications to impart the desired characteristics in the final product.” *Supplemental Basis Statement* at 5.

To eliminate ambiguity or confusion (*see* Section VI.D, above), the Board should specify in rule that BPA is deemed to be intentionally added to a product or product packaging whenever a component of that product or product packaging is made from polycarbonate plastic or an epoxy resin containing BPA. Such a clarification is necessary to ensure timely and complete compliance with the rules.

B. THE BOARD SHOULD REQUIRE SAFER ALTERNATIVES TO THE USE OF BPA IN ALL FOOD AND BEVERAGE PACKAGING MARKETED TO OR INTENDED FOR USE BY CHILDREN UNDER AGE THREE.

The second prerequisite for this rulemaking is that, to regulate use of priority chemicals in food and beverage packaging, the Board must find that the “product is intentionally marketed or intended for the use of children under 3 years of age”. 38 M.R.S.A. § 1697(8).

There is no question that infant formula and baby food are exclusively intended for use by children under age three. With regard to other food and beverages, the proposed rule would establish a bright line enforceable definition of “toddler food” that would eliminate use of BPA in all packaging of food products marketed to or intended for use by children under age three:

“Toddler food” means any food or beverage, other than baby food or infant formula, that is intentionally marketed or intended for the use of children under 3 years of age. ‘Toddler food’ includes but is not limited to canned foods with labels or related marketing materials that prominently display animated characters from television shows or films that include preschool children among their target audience.

*Proposed Rule*, 06-096, CMR ch. 882, § 5(A). This definition establishes two categories of “toddler food” – food that is *intended* for children under three, and food that is *intentionally marketed* for use by children under three.

In the first category, there are numerous examples of products intended by manufacturers to be used by toddlers and labeled specifically as “toddler food” that are for sale in Maine in packaging that contains or likely contains BPA. For example,

- “Gerber Graduates for Toddlers Lil’ Chicken Sticks” is packaged in glass jars with metal lids that, if manufactured in 2011, contain BPA.<sup>20</sup>
- PBM brand “Soy Pediatric Nutritional Drink” – marketed as “a delicious, ready-to-drink supplement that is specially formulated to provide balanced nutrition for children 2 to 10 years of age”<sup>21</sup> – is packaged in an aluminum can that, as PBM reported to DEP, is coated with a BPA-based epoxy resin.<sup>22</sup>
- Earth’s Best Organic brand “Organic Elmo Noodlemania Soup” is listed as a “toddler food” on the Earth Best’s website<sup>23</sup>. According to a September 2011 survey by the Breast Cancer Fund, product testing revealed a BPA level of 42 parts per billion (ppb) in this product<sup>24</sup>.

This is just a partial list; many other food and beverage products intended for use by toddlers are for sale in Maine.

The second category of toddler food consists of any product *intentionally marketed* for use by children under 3 years of age. This applies, but is not limited to, food packaging that uses

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<sup>20</sup> See Gerber Graduates® For Toddlers Lil’ Sticks® – Chicken Sticks, [http://www.gerber.com/toddler/products/side\\_dishes/toddlers\\_lil\\_sticks\\_chicken\\_sticks.aspx](http://www.gerber.com/toddler/products/side_dishes/toddlers_lil_sticks_chicken_sticks.aspx), accessed June 13, 2012, attached as Ex. 36. Gerber reported to the Department that it ceased using BPA in all of its product packaging in late 2011. BPA Alternatives Assessment at 14, attached as Ex. 15.

<sup>21</sup> PBM Nutritionals, Toddler Food, Pediatric Nutritionals, PBM Products.Com, *Pediatric Nutritionals By PBM*, <http://www.pbmproducts.com/pediatric-nutritionals.aspx>, attached as Ex. 37.

<sup>22</sup> *BPA Alternatives Assessment* at 29-30. See also *id.* at 30, (defining Soy Pediatric Nutritional Drink as a “toddler food”).

<sup>23</sup> Earth’s Best, *For Toddler’s*, <http://www.earthsbest.com/organic-baby-food/toddler-food>; Earth’s Best, *Soup – Elmo’s Noodlemania*, <http://www.earthsbest.com/products/product/2392320420>, accessed June 14, 2012, attached as Ex. 35.

<sup>24</sup> Breast Cancer Fund, *BPA in Kids’ Canned Food: A Product Testing Report* (Sept 2011), attached as Ex. 17.

licensed pre-school content to market products for use by children age two and older. For example, Campbell's SpaghettiOs Dora The Explorer Pasta, sold in metal cans that can reasonably be assumed to have an epoxy resin liner containing BPA, is for sale in grocery stores in Maine and is specifically marketed to children under three. The image of Dora the Explorer is a licensed character from a television show that airs on Nick Jr. Nick Jr. is a “specially designed programming block on Nickelodeon, dedicated to preschoolers, 2–5.”<sup>25</sup> According to parent company Viacom’s Annual Report, “Nick Jr.” is a “commercial free-educational channel for preschoolers...” and “Nick Jr. favorites include original programs Dora the Explorer....”<sup>26</sup>

“Annie's Homegrown Organic Arthur Loops” and “SpaghettiOs Original Disney Princess” shaped pasta meals, for sale in Maine grocery stores, are packaged in metal cans that can reasonably be assumed to have an epoxy resin liner containing BPA. “Arthur” is an animated television series for children created for the Public Broadcasting Service (PBS). It airs on PBS Kids, whose content “helps preschool children in each of the four key areas of childhood development – cognitive, social, emotional and physical.”<sup>27</sup> PBS Kids television programs target children ages 2 to 8.<sup>28</sup> Disney Junior, formerly Playhouse Disney, is available via more than 25 broadcast and cable TV stations, subscription video on demand and a broadband website. Disney Junior features all of the Disney Princess characters, and according to the Disney website,

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<sup>25</sup> See Viacom, Our Brands, Viacom Media Networks, Nickelodeon-Nick Jr. <http://www.viacom.com/ourbrands/medianetworks/Pages/nickelodeon.aspx>, attached as Ex. 34

<sup>26</sup> Viacom Inc., *Annual Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Act of 1934*, at 7 Dec. 31, 2009, excerpts attached as Ex. 34.

<sup>27</sup> See PBS Kids, “What ARE PBS Kids Educational Goals and How are They Supported,” <http://pbskids.org/help/faq.html>, attached as Ex. 37.

<sup>28</sup> *Id.*

Disney Junior's programming invites mom and dad to join their child in the Disney experience of magical, musical and heartfelt stories and characters, while incorporating specific learning and development themes designed for kids age 2-7. Disney Junior's animated and live action series blend unparalleled story telling and characters kids love deeply with learning, including early math, language skills, eating healthy and lifestyles, and social skills.<sup>29</sup>

This technique of product advertising, using cross promotions with animated characters, is intentionally and carefully targeted at young children and parents of young children, including toddlers under age three. Developmental models of children as consumers have found that from birth to age two, children are not true consumers because they are not yet goal-directed in their product choices, but that

[d]uring the second stage (two to five years), preschoolers nag and negotiate, asking for and even demanding certain products. At this point in their development, young children do not understand the persuasive intent of commercials; they focus on the attractive qualities of products and cannot keep their minds off the products for long. These developmental characteristics make them extremely vulnerable to commercial advertisements.<sup>30</sup>

The Federal Trade Commission, in a 2006 Report to Congress entitled *Marketing Food to Children and Adolescents* ("FTC Report"), found that food and beverage companies have performed extensive market research on child (age 2-7) and adolescent (age 7-17) audiences, including focus groups, online surveys, and in-depth interviews, to ascertain what is important to various age groups and what engages them.<sup>31</sup> They also obtained

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<sup>29</sup> Disney Junior, FAQ, Families, Preschool, What is Disney Junior, <http://disney.go.com/guestservices/faq?id=disneyjunior1>, attached as Ex. 34

<sup>30</sup> Sandra L. Calvert, *Children as Consumers; Advertising and Marketing*, *Future of Children Journal* 18:1, 215, attached as Ex. 18.

<sup>31</sup> Federal Trade Commission, *Marketing Food to Children and Adolescents: A Review of Industry Expenditures, Activities, and Self-Regulation, A Report to Congress* (hereinafter as "FTC Report"), at 54-55 (July 2008), attached as Ex. 29. The FTC report was based on a prior analysis by the Institute of Medicine concluding that "there is strong evidence that television

market research from advertising or media firms and tested television ads on young consumers to determine what techniques will make them want to try the product:

Company research showed that children like ads with dramatic, action-filled, and to-be-continued story lines.... Animated characters – whether third-party licensed characters or characters created by a company for a brand – seem to be an important factor in getting children to ask their parents to buy a product.<sup>32</sup>

The FTC Report also found that, in 2006, food companies spent \$870 million on food marketing to children under age 12, including \$195 million to reach children and adolescents at the point of sale using, for example, cross promotional advertising and licensed characters – second only to television advertising. *Id.* at ES1-3.<sup>33</sup>

Other studies have similarly found the use of licensed characters and other youth-oriented promotions on product packaging and the associated ‘pester power’ to be highly effective at motivating both children and parents to purchase the advertised product. (*Harris, et al., 2008*).<sup>34</sup> Surveys over three years of one of the largest grocery store chains in the northeast found that 21.6 percent of in-store advertising on product packages was targeted at a pre-school audience aged 2-6. *Id.*

In summary, the food and beverage industry manufactures and distributes products in Maine that are intended for use by children under age three. Additionally, as documented by the FTC, industry research, and public health groups, the food and beverage industry intentionally and specifically markets products to pre-school children

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advertising influences the food and beverage requests and preferences of children ages 2-11.” *Id.* at 2.

<sup>32</sup> *Id.* at 54-55.

<sup>33</sup> The FTC Report includes an extensive list of media properties (e.g. Dora the Explorer, Happy Feet, etc.) and products (e.g. canned soups, beverages, etc.) that the target companies reported using in cross-promotions to children and adolescents in 2006. *FTC Report* at 29-32.

<sup>34</sup> Attached as Ex. 30.

under the age of three and their parents through the use of animated and licensed characters on packaging, and other marketing strategies. Product testing has shown that many of these products contain BPA and result in exposure of Maine children to a harmful priority chemical. Accordingly, the Board should find that the proposed rule prohibiting the sale of infant formula, baby food, and toddler foods in BPA-containing packaging is appropriate because these products are “intentionally marketed or intended for the use of children under 3 years of age”. 38 M.R.S.A. § 1697(8).

C. CERTAIN USES OF FOOD AND BEVERAGE PACKAGING EXPOSE MAINE CHILDREN TO BPA.

Next, the Board must address the two statutory criteria under § 1696(1) – exposure and alternatives. Regarding the first criterion, in 2010 the Department found, based on its review of available research, that: “the greatest source of human exposure to BPA is through food contact applications.” *Basis Statement* at 14. The Board may rely upon that finding here, as infant formula, baby food and toddler food all involve food contact applications. Additionally, since the Board’s 2010 rulemaking, substantial credible scientific evidence<sup>35</sup> has continued to accumulate demonstrating that ingestion of foods and beverages sold in packaging containing BPA is a primary source of exposure.

1. **Evidence continues to accumulate demonstrating that food and beverage packaging is a primary source of exposure.**

At Petitioners request, Dr. Laura Vandenberg, an expert on BPA with the Center for Regenerative and Developmental Biology at Tufts University and a member of the Chapel Hill Expert Panel on BPA, has provided a summary of evidence regarding BPA exposure and health

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<sup>35</sup> 38 M.R.S.A. § 1691 8-A.

effects published since the Board's 2010 rulemaking listing BPA as a priority chemical (hereinafter as the "*Vandenberg Report*" attached as Ex. 14).<sup>36</sup> The *Vandenberg Report* documents both new evidence of human exposure to BPA and mounting evidence of potential health effects from low dose exposure to BPA.

Regarding exposure, consistent with the Board and ME-CDC's findings in 2010, recent studies have documented BPA is present in canned food in U.S. and Canadian markets. (*Cao et al.*, 2010; *Schechter et al.*, 2010). Studies manipulating diets have further found that food packaging is a major source of BPA exposure. For example, the studies found that:

- Consumption of canned vegetables but not fresh fruits or vegetables or canned fruits was associated with higher urinary BPA levels in pregnant women (*Braun et al.*, 2011a)<sup>37</sup>, which is consistent with a prior study estimating that canned vegetables contribute 40% of daily BPA intake, whereas canned fruit contributes 3-6% (*von Goetz et al.*, 2010)<sup>38</sup>;
- In a study of adults that ate canned soup for five days and then fresh soup for five days, consumption of canned soups increased urinary BPA levels by over 1,000% (*Carwile et al.*, 2011)<sup>39</sup>; and
- In a dietary intervention study, subjects that switched from their usual diet to one of fresh foods showed a decrease in BPA levels of 66% within three days and, after returning to their normal diet, a rebound in BPA levels of 202% (*Rudel et al.*, 2011).<sup>40</sup>

Regarding human health effects, evidence also continues to accumulate that low dose BPA exposure (both neonatal and post-natal) can result in developmental, behavioral and health effects in young children, including masculinization of young girls (*Braun et al.*, 2009; *Braun et al.*, 2011b); feminization of boys (*Miao et al.*, 2011a); an increase in premature births and

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<sup>36</sup> Simultaneous with filing of this petition, a compact disc and packet containing the Vandenberg Report and its referenced studies has been provided to the Board and Department staff under separate cover for inclusion in the administrative record.

<sup>37</sup> Attached as Ex. 21.

<sup>38</sup> Attached as Ex. 33.

<sup>39</sup> Attached as Ex. 26.

<sup>40</sup> Attached as Ex. 31.

reduced birth size (*Cantonwine et al.*, 2010; *Chou et al.*, 2011; *Miao et al.*, 2011b); changes in newborn hormone levels (*Chou et al.*, 2011); and weakening of the developing immune system. (*Spanier et al.*, 2012; *Clayton et al.*, 2011).

New credible scientific evidence of health effects from BPA exposure in adults includes studies finding that BPA exposure may lead to decreased sperm quality (*Meeker et al.*, 2010b; *Li et al.*, 2011), poorer sexual function (*Li et al.*, 2010a; *Li et al.*, 2010b), and reduced testosterone levels in men (*Galloway et al.*, 2010; *Meeker*, 2010; *Mendiola et al.*, 2010); poorer oocyte quality in women (*Bloom et al.*, 2011; *Ehrlich et al.*, 2012; *Fujimoto et al.*, 2011; *Mok-Lin et al.*, 2010); increased incidence of coronary heart disease (*Melzer et al.*, 2010; *Melzer et al.*, 2012); obesity (*Carwile and Michels*, 2011); and decreased thyroid hormone levels (*Meeker et al.*, 2010a; *Meeker and Ferguson*, 2011).<sup>41</sup>

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<sup>41</sup> The Board designated BPA as a priority chemical in 2010 based on overwhelming evidence that exposure to BPA causes adverse health effects. *Although the health impacts of BPA exposure is not a criterion for this proposed rule*, evidence of harm continues to mount and is supported by hundreds of studies on impacts of BPA exposure on various endpoints in animals. *See Vandenberg Report* at 4-5. The Board should be aware, however, that chemical manufacturers and the U.S. Food and Drug Administration (“FDA”) have hypothesized that rodent and other animal studies may not be relevant to human exposure to BPA because of differences in metabolism in humans compared to rats and mice and that BPA exposure may not be as problematic as previously thought because humans rapidly metabolize orally ingested BPA to an inactive form and eliminate it from their bodies. The Board unanimously rejected these arguments when made by the chemical industry in 2010 (*see* Testimony of Steve Hentges, American Chemistry Council, representing BPA manufacturers, August 2010) and it should do so again. This is a minority view among the scientific community and has been critiqued by a number of reports on grounds that:

- Free (estrogenically active) BPA has been detected in the vast majority of studies of the general population when measured and has been detected in human placenta, amniotic fluid, breast milk and follicular fluids. (Vandenberg et al., 2010a; Vandenberg et al., 2010b; Vandenberg Report at 4-5);
- Recent studies have found that adult female mice, monkeys and humans metabolize BPA at virtually identical rates. (Taylor et al., 2011);

These studies, in combination with the evidence and studies cited in the Board's and ME-CDC's 2010 determinations, constitute an extensive body of peer-reviewed credible scientific evidence that use of BPA in food packaging exposes humans to BPA, and that BPA exposure at environmentally relevant doses poses the potential to harm human health. This alone meets the exposure criterion pursuant to 38 M.R.S.A. § 1696(1)(A) and reinforces the Board's 2010 decision to designate BPA as a priority chemical. In addition, there is substantial and specific credible scientific evidence that use of BPA in packaging or packaging components for infant formula, baby food, and toddler food directly exposes Maine children under age three to this harmful chemical.

## **2. BPA exposure from Infant Formula**

In addition to the general evidence demonstrating that use of BPA in any food contact applications exposes humans to BPA, there is also substantial credible scientific evidence that

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- Studies show that human tissues and organs cycle BPA between active and inactive forms: for example, organs such as the placenta and liver re-activate inactive BPA (Ginsberg and Rice, 2009; Nishiwaka et al., 2010); and
  - There is strong congruence of findings between human and animal studies showing effects upon male and female reproduction, metabolic processes, heart disease, immune function, brain development and children's behavior. (Vandenberg Report at 5).

Regardless of the academic dispute, the FDA recently reiterated its concurrence with the determination of the National Toxicology Program that these human and animal studies provide reason for "some concern about the potential effects of BPA on the brain, behavior, and prostate gland of fetuses, infants and children." U.S. Food and Drug Administration, *Bisphenol A (BPA): Use in Food Contact Application* (March 30, 2012) (hereinafter as "FDA March 2012 Update"), Ex. 39. FDA is also supporting implementation of reasonable steps to reduce exposure of the general population, and particularly infants, to levels of BPA in the food supply, including use of alternative packaging. *Id.* With regard to infant exposure, FDA has supported immediate replacement of BPA with alternative packaging based on concerns that "[i]nfants are a potentially sensitive population for BPA because (1) their neurological and endocrine systems are developing; and (2) their hepatic system for detoxification and elimination of such substances as BPA may be immature." *Id.*

use of BPA in packaging or packaging components for infant formula, baby food, and toddler food specifically and directly exposes Maine children under age three to this priority chemical.

In the case of infant formula, not only have various studies confirmed that infants are exposed to BPA through ingestion of canned liquid infant formula, but analysis of exposure data shows that canned liquid infant formula poses a significant health risk to infants. In fact, the levels of BPA detected suggest that canned liquid infant formula poses a greater risk to infant health than the now-prohibited polycarbonate baby bottles. A background paper on the *Sources and Occurrence of Bisphenol A Relevant for Exposure of Consumers* prepared for a FAO/World Health Organization Expert Meeting on BPA summarizes the available research on the levels of BPA in canned liquid infant formula.<sup>42</sup> Out of six studies reviewed, five detected levels of BPA in the liquid infant formula at levels ranging from 0.1 nanograms per gram (“ng/g”) to 17 ng/g [Note: 1 ng/g is equivalent to 1 part per billion (ppb)]:

- Researchers sampled 14 liquid infant formula products packaged in metal cans collected in the United States and found BPA present in concentrations ranging from 0.1 ng/g to 13.2 ng/g (median = 5 ng/g).<sup>43</sup>
- Researchers sampled 21 liquid infant formula products packaged in metal cans collected in Canada and found BPA present in concentrations ranging from 2.3 ng/g to 10.2 ng/g (median = 5.1 ng/g). Following 10 months of storage at room temperature, researchers again sampled the 21 products and found additional BPA migration in 9 of the 21 products, with increases ranging from 30% to 100%.<sup>44</sup>

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<sup>42</sup> Bailey and Hoekstra (2010). *Sources and Occurrence of Bisphenol A Relevant for Exposure of Consumers*. FAO/WHO Expert Meeting on Bisphenol A (BPA), attached as Ex. 19.

<sup>43</sup> Biles JE, McNeal TP, Begley TH (1997). Determination of bisphenol A migrating from epoxy can coatings to infant formula liquid concentrates. *Journal of Agricultural and Food Chemistry*, 45:4697–4700, attached as Ex. 20.

<sup>44</sup> Cao XL et al. (2008). Levels of bisphenol A in canned liquid infant formula products in Canada and dietary intake estimates. *Journal of Agricultural and Food Chemistry*, 56:7919–7924, attached as Ex. 23.

- A consumer advocacy group sampled six liquid infant formula products packaged in metal cans collected in the United States and found BPA present in concentrations ranging from ND (<2 ng/g) to 17 ng/g (mean = 2.4 g/kg).<sup>45</sup>
- Researchers sampled 22 liquid infant formula products packaged in metal cans collected in the United States and found BPA present in concentrations ranging from 0.5 ng/g to 10.3 ng/g (median = 5.0 ng/g).<sup>46</sup>

These data demonstrate that infant formula packaged in metal cans containing BPA directly exposes Maine babies to BPA. When compared to data on the level of BPA in liquids served in polycarbonate baby bottles, these results further suggest that the use of canned liquid infant formula exposes infants to higher levels of BPA than the use of now banned polycarbonate baby bottles.<sup>47</sup> Based on government surveys of formula consumption and the latest science showing low dose toxic effects of BPA, the Environmental Working Group has concluded that: “One of every 16 infants fed ready-to-eat canned formula would be exposed to BPA at doses that altered testosterone levels, affected neurodevelopment, and caused other permanent harm to male and female reproductive systems” and that “[a]t the highest BPA levels found in formula, 17 [ng/g], nearly two-thirds of all infants fed ready-to-eat formula would be exposed above doses that have proved harmful in animal tests.”<sup>48</sup>

Accordingly, based on the above evidence, the Board should find that distribution of infant formula in packaging containing BPA directly exposes Maine children to a priority chemical. 38 M.R.S.A. § 1696(1)(A).

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<sup>45</sup> Environmental Working Group (2007). *EWG’s guide to infant formula and baby bottles—summary & findings*. Washington, DC., attached as Ex. 25

<sup>46</sup> Ackerman LK et al. (2010). Determination of bisphenol A in US infant formulas: updated methods and concentrations. *Journal of Agricultural and Food Chemistry*, 58:2307–2313, attached as Ex. 18.

<sup>47</sup> Environmental Working Group (2007). *EWG’s guide to infant formula and baby bottles—summary & findings*. Washington, DC., Ex. 25

<sup>48</sup> *Id.*

### 3. BPA Exposure from Baby Food.

In January and February of 2012, ACHM purchased and tested baby food packaging from baby food in glass jars with metal lids purchased at four Maine retail stores. ACHM, *Chemical Analysis for BPA in Baby Food Jar Lids and Toddler Food Cans* (Jan.-Feb. 2012), attached as Ex. 16. Chemical analyses using gas chromatography-mass spectrometry by the independent Anresco Laboratories in San Francisco found BPA levels above the minimum detection limit (0.5 micrograms/kg, or 0.5 parts per billion) in 11 of the 12 *jar lids* tested. These tests, attached as Ex. 16, demonstrate that baby food packaged in glass jars with metal lids containing BPA directly exposes Maine babies to BPA. The twelve samples included three lids from each of the four major baby food brands sold in Maine: Beech-Nut, Earth's Best Organic, Gerber, and Wild Harvest. BPA was present in product packaging of all four brands sampled.

The ACHM data is consistent with reporting by manufacturers pursuant to the 2010 rulemaking. In the reports that have been filed with DEP, Nestle Nutrition (Gerber), Hero Group (Beech-Nut), Hain Celestial Group (Earth's Best) and Initiative Foods (Wild Harvest, Full Circle, Healthy Times), have all disclosed that all baby foods manufactured prior to October 2011 were packaged in containers with metal lids lined with epoxy resins containing BPA. See Michael Belliveau, Environmental Health Strategy Center, *Safer Alternatives to Bisphenol A (BPA) Are Available for Food and Beverage Packaging for Young Children: An Assessment of BPA-Free Alternatives for Infant Formula, Baby Food and Toddler Food*, at 20 (June 2012) (hereinafter as "*BPA Alternatives Assessment*"), attached as Ex. 15. Initiative Foods has reported that it continues to distribute baby food in glass jars with metal lids containing BPA. *Id.* at 24-25.

These are food contact applications, which, as the Board has already found, is a primary route of human exposure to BPA. Packaging baby food in glass jars with metal lids containing a

lining made from epoxy resins or a polyvinyl chloride (“PVC”) sealant directly exposes consumers (babies) to BPA, due to contamination both during the manufacturing process and from food contact with BPA-laced lining during shipping.<sup>49</sup> In a recent study, researchers detected BPA in 84 of 99 samples (84%) of baby food products packaged in glass jars with metal lids lined with epoxy resins or PVC, with BPA concentrations in the baby food ranging from 0.19 ng/g to 7.22 ng/g (mean = 0.95 ng/g).<sup>50</sup> The products samples represented 80% of the baby food sold in the Canadian market, which shares many of the same manufacturers as the U.S. market, including, for example, Nestle Canada and Hain Celestial Canada.

Accordingly, based on the above evidence, the Board should find that use of BPA as a component of baby food packaging directly or indirectly exposes Maine children to a priority chemical. 38 M.R.S.A. § 1696(1)(A).

#### **4. BPA Exposure from Toddler Food.**

As above, many food products distributed for sale in Maine are specifically intended or marketed for use by children under age three and many of these products are sold in packaging that contains BPA. For example, manufacturers have reported to Maine DEP that certain products intended for use by toddlers are packaged in containers with BPA. See Ex. 15 at 28-32. Likewise, the 2012 ACHM Product Testing Report confirmed that BPA is used as a component of canned foods marketed to toddlers. Specifically, the 2012 product testing included three cans of food sold in Maine and intended for or marketed to toddlers: Campbell’s Original Disney Princess SpaghettiO’s, Campbell’s Dora the Explorer Chicken Soup with shaped pasta, and Chef Boyardee Mac & Cheese. Chemical analyses by Anresco Laboratories found BPA levels above

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<sup>49</sup> *Cao XL et al.* (2009). “Bisphenol A in baby food products in glass jars with metal lids from Canadian markets,” *Journal of Agricultural and Food Chemistry*, 57:5345–5351. Ex. 24.

<sup>50</sup> *Id.* Ex. 24.

the PQL in food content (15.4 to 134.2 parts per billion) and in the epoxy resin liners (0.61 to 14.65 ug/can) of all three cans. Ex. 16.

These findings are consistent with the scientific literature. For example, *Schechter et al.* (2010) measured BPA in 56 of 96 samples (58%) of assorted canned foods collected from grocery stores. BPA was found at concentrations ranging from 0.25 ng/g , wet weight, to 65.00 ng/g ww. Ex. 32. *See also Braun et al.*, (2011a) (canned fruits associated with higher urinary BPA levels in pregnant women) Ex. 21; *von Goetz et al.*, (2010) (canned vegetables contribute 40% of daily BPA intake, canned fruit contributes 3-6%) Ex. 33; *Carwile et al.*, (2011) (consumption of canned soups increased urinary BPA levels by over 1,000% compared to fresh food) Ex. 26; *Cao et al.* (2010) (BPA in canned foods from Canadian markets) Ex. 25.

As the Board found in the 2010 rulemaking, there is simply no dispute that canned foods with epoxy resin liners are a primary source of BPA exposure. *Basis Statement* at 14; *ME-CDC Concurrence* at 3. The process of migration of BPA from packaging to food was recently explained in a report by the Breast Cancer Fund:

Why does BPA leach from the epoxy-resin can liner? The epoxy resin is formed using two chemicals—BPA and epichlorohydrin. When these two molecules bind, the resulting copolymer can be incomplete and unstable, allowing BPA to migrate from the liner into food. Because BPA is lipophilic, or fat-seeking, it tends to leach more into fatty foods. After aggregating the results of tests of 300 canned food products, the Breast Cancer Fund demonstrated that canned foods that are salty or fatty, such as soup, meals (e.g., ravioli in sauce) and vegetables tend to have the highest BPA content.

Breast Cancer Fund, *BPA in Kids' Canned Food, A Product Testing Report*, at 1 (Sept 2011), Ex. 17. The Breast Cancer Fund study looked specifically at six different canned products marketed directly to toddlers and young children, including four prominent brands: Annie's, Campbell's, Chef Boyardee, and Earth's Best Organic. The study found BPA in all products tested at concentrations ranging from 10 ppb to 148 ppb, with an average level of 49 ppb. *Id.* The Breast

Cancer Fund also reviewed the scientific and product testing literature and found that BPA concentrations in canned soups averaged 69 ppb and in canned meals averaged 36 ppb. *Id.*

Finally, the Maine data are also consistent with a study conducted by Consumer Reports Magazine in December 2009, which found BPA in canned foods and beverages. Regarding food intended or marketed for use by toddlers, the study found an average level of 9.7 ppb of BPA in samples of Nestle Juicy Juice All Natural 100% Apple Juice sold in cans. Samples of the same product packaged in juice boxes had no measurable levels of BPA. The article stated,

Although BPA levels in that canned juice were not among the highest in the foods we tested, canned juice can account for a substantial amount of dietary BPA exposure in children who drink a lot of it. Drinking three servings per day of canned apple juice with BPA levels comparable to the levels found in our samples could result in a dose of BPA that is more than our experts' daily upper limit."

Consumer Reports Lab Tests, *Concern Over Canned Foods*, Consumer Reports, (December 2009), Ex. 25.

In summary, the above evidence – including both national and state product testing reports – demonstrates that ingestion of food and beverages sold in packaging containing BPA in a food contact application directly exposes children under the age of three to this priority chemical. 38 M.R.S.A. § 1696(1)(A).

D. ALTERNATIVE BPA-FREE PACKAGING THAT IS DEMONSTRABLY SAFER IS NOW WIDELY USED FOR INFANT FORMULA, BABY FOOD AND TODDLER FOOD.

The final criterion the Board must address is the availability of safer alternatives. 38 M.R.S.A. § 1696(1)(B). Due to increasing public concern, consumer preferences and prohibitions enacted by U.S. states and other countries, the food and beverage industry has begun shifting to alternative packaging and packaging components that do not contain BPA. Because a

variety of alternatives that do not contain BPA or other chemicals of concern are now in widespread use, the Board may rely upon the statutory presumptions that alternative food and beverage packaging is both safer and available. 38 M.R.S.A. §§ 1696(2)(A), (D). Additionally, the Board may presume the availability of safer alternatives for infant formula and baby food packaging because other states have banned use of BPA in those products based on the availability of safer alternatives. *Id.* § 1696(2)(B).<sup>51</sup>

**1. Non-metallic, BPA-free alternative packaging is available.**

One or more safer alternatives to BPA are available at comparable cost for infant formula, baby food and other food intended for or marketed to toddlers under the age of three. Historically, BPA-based epoxy resins have been used as a protective coating on metal food packaging such as jar lids and cans. Babies and toddlers are exposed to BPA when the priority chemical migrates from the coating into the food during manufacture, transport and storage.<sup>52</sup> As documented in the attached BPA Alternatives Analysis by the Environmental Health Strategy Center, manufacturers have begun transitioning products to non-metallic packaging that does not require protective epoxy resin coatings.<sup>53</sup> The following alternatives are used for packaging of infant formula, baby food, and toddler food and are widely commercially available, functionally equivalent, and affordable to the consumer:<sup>54</sup>

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<sup>51</sup> In 2010, Vermont enacted a ban on the manufacture, sale or distribution of infant formula or baby food stored in plastic container or jar that contains BPA effective July 1, 2012, and in a can that contains BPA effective July 1, 2014, based on the availability of safer alternatives, including “glass, stainless steel, and aluminum bottles; BPA-free plastic containers, some of which are already sued by several manufacturers of infant formula; foil packets; and powdered foods stored in cardboard boxes.” 2010 Vt. Acts & Resolves 112, § 1.1, attached as Ex. 13.

<sup>52</sup> Breast Cancer Fund, Ex. 17.

<sup>53</sup> Ex. 15.

<sup>54</sup> Because of the long shelf life of canned or jarred foods, old inventory of BPA-containing products continues to be sold in Maine stores, and this may continue for many years.

- Aseptic cartons (e.g. Tetra Pak);
- Laminated pouches (e.g. Cheer Pak);
- Polyethylene plastic containers (HDPE);
- Polypropylene plastic containers
- Polylactic acid plastic containers (PLA); and
- Fresh food or frozen food

a) *Infant Formula.*

Nationally and in Maine, most infant formula is no longer sold in BPA-containing packaging. *See* Table B. In response to parents’ health concerns and state regulation, infant formula manufacturers have substantially switched to safer alternatives, e.g. BPA-free plastic containers and aseptic paperboard cartons. Only one lagging manufacturer that distributes products in Maine has yet to make the transition to BPA-free packaging. *BPA Alternatives assessment at 11-15.* Infant formula makers largely appear to be making this shift to safer alternatives by abandoning metal packaging. *Id.*

**Table B. BPA-free infant formula packaging is widely available<sup>55</sup>**

Company	Brand	BPA Use	Available BPA-Free Safer Alternative	New uses of BPA ended by:
Abbott Laboratories	Similac	Epoxy coating on metal cans of “ready-to-feed” and on metal tops & bottoms of “powdered” formulas	Plastic containers	October 2011
Mead Johnson	Enfamil		Plastic containers	October 2011
Nestlé Infant Nutrition	Gerber		Aseptic containers Plastic containers	October 2011
Perrigo Company (PBM Nutritionals)	Parent’s Choice Babies R Us	Epoxy coating on metal disk in cap of plastic bottles of “ready-to-feed”	NONE Alternative identified	BPA still used
Hain Celestial Group	Earth’s Best	Epoxy coating on metal cans of “ready-to-feed”	Composite containers	March 2009

*Note: Mead Johnson still sells metal cans of “ready-to-feed” Enfamil liquid formula. If this represents old inventory, these products may likely contain BPA, and be sold into 2013.*

<sup>55</sup> Source: *BPA Alternatives Assessment*, at 11. Ex. 15.

b) *Baby Food.*

All but one manufacturer that distributes baby food products in Maine have switched to BPA-free packaging. *See* Table C. Two of the seven baby food manufacturers identified in Maine have never used BPA-based packaging. Three of the four companies that sell some baby food in glass jars with metal lids, representing 89% of the prepared baby food market, no longer manufacture new baby food containers with BPA, as of October 2011. However, they continue to sell old BPA-containing inventory, taking advantage of a two-year shelf life. Only one laggard, representing less than 2% of the market, has not ended its use of BPA on new metal jar lids. *BPA Alternatives Assessment* at 20-26. As with infant formula, many manufacturers are using non-metallic packaging. Alternative metal coatings, are still under development, however, as discussed below, manufacturers have not provided sufficient information to determine whether alternate BPA-free coatings are safer. *Id.*

**Table C. BPA-free baby food packaging is widely available.<sup>56</sup>**

Company	Brand	BPA Use	Available BPA-Free Safer Alternatives	New uses of BPA ended by:
Nestle	Gerber	Epoxy coating on metal lids of glass jars	Plastic containers	October 2011 but <i>old</i> jars with BPA lids still sold
Hero	Beech-Nut		Laminated pouches	
Hain Celestial	Earth's Best			
Danone (Stonyfield)	YoBaby	<i>Never used BPA</i>	Plastic containers	-
Initiative Foods	Wild Harvest Full Circle Healthy Times	Epoxy coating on metal lids of glass jars	NONE	Still uses BPA
Sprout Foods	Sprout	<i>Never used BPA</i>	Laminated pouches	-
PBM Nutritionals	Parent's Choice	???	Plastic containers	???

<sup>56</sup> Source: *BPA Alternatives Assessment* at 20. Ex. 15.

c) *Toddler Food.*

All other foods and beverages that are intended for or intentionally marketed to children under age three can be considered toddler food. BPA-free packaging strategies in the toddler food market are similar to baby food and are in widespread use, including alternatives such as plastic containers and aseptic laminated containers. See Table D; *BPA Alternatives Assessment* at 28-29.

**Table D. BPA-Free alternatives are available for all toddler food.**<sup>57</sup>

Toddler Food	Product Type	Use of BPA	Safer Alternatives
INTENDED for Use by Children Under Age Three	The package or label says for toddlers or older babies	Epoxy coating of metal lids on glass jars	Plastic containers Aseptic cartons Laminated pouches Paperboard containers
	Soy-based Pediatric Nutritional Drinks	Epoxy coating of aluminum cans	Plastic bottles
	Milk-based Pediatric Nutritional Drinks	Epoxy coating of metal disk on plastic cap of plastic bottle	Aseptic cartons Plastic bottles
INTENTIONALLY MARKETED for Use by Children Under Age Three	Canned foods labeled with cartoon characters that target preschooler audience	Epoxy coating of steel cans and tops	Plastic containers Aseptic cartons Paperboard containers Fresh or frozen food

In summary, because non-metallic BPA-free packaging alternatives for infant formula, baby food and toddler food are so numerous and so widely used, the statutory presumption that alternatives are available, 38 M.R.S.A. § 1696(2)(D) and 06-096 CMR ch. 880, § 4(B)(3)(b) is, for all intents and purposes, irrebuttable.

**2. Non-metallic BPA-free alternatives are safer.**

Available non-metallic BPA-free packaging is also presumptively safer because none of these alternatives contain chemicals of concern. 38 M.R.S.A. § 1696(2)(A), 06-096 CMR ch.

<sup>57</sup> Source: *BPA Alternatives Assessment* at 28-29. Ex. 15.

880, § 4(B)(3)(b). Equally important, these alternatives have been documented through chemical screening as safer alternatives to packaging containing BPA. Additionally, in 2010, this Board concluded that at least two of these alternatives, polyethylene and polypropylene, were safer alternatives to reusable food and beverage containers made from BPA. *Basis Statement* at 9-10.

a) *High Density Polyethylene*

High density polyethylene (HDPE) has a long history of use in containers for milk, juice, water and other beverages. The chemical monomers used to make the polyethylene polymer [CAS Nos. 9002-88-4 and 26221-73-8] include ethylene [CAS No. 74-85-1], hexene [CAS No. 592-41-6] or octene [CAS No. 25377-83-7]. These chemicals and polyethylene itself have passed a Human Health and Environment screen, which consisted of threshold values for cancer, persistence, bioaccumulation, toxicity and presence of BPA. Neither polyethylene nor its constituent chemicals are Chemicals of High Concern, based on an even more rigorous screen, according to Pure Strategies, Inc. The State of Maine has not identified any of these as Chemicals of Concern. Accordingly, pursuant to 38 M.R.S.A. §§ 1696(1)-(2), HDPE should be deemed both presumptively safer and factually safer than products containing BPA. *BPA Alternatives Assessment* at 17, Ex. 15.

b) *Polypropylene*

Polypropylene has a long history of use in food containers, such as for yogurt, and as a reusable water bottle alternative. The chemical monomer used to make the polypropylene polymer [CAS No. 9003-07-0] is propylene [CAS No. 115-07-1]. These chemicals passed both of Pure Strategies' screens for Human Health and Environment and Chemicals of High Concern. The State of Maine has not identified any of these substances as Chemicals of Concern. Accordingly, pursuant to 38 M.R.S.A. §§ 1696(1)-(2), polypropylene should be deemed both

presumptively safer and factually safer than products containing BPA. *BPA Alternatives Assessment* at 17, Ex. 15.

*c) Polylactic Acid*

Polylactic Acid (“PLA”) the first of a new generation of bio-based plastics, is a type of polyester made from renewable feedstocks rather than petroleum. It is made from starches or sugars, which are fermented to produce lactic acid, a food grade commodity substance. In a two-step process, lactic acid is converted to lactide, which is then polymerized to produce polylactic acid. No Chemicals of Concern identified by the State of Maine are used in the manufacturer of PLA. A GreenScreen analysis of PLA concluded that it was a safer alternative to the petroleum-based polyester known as polyethylene terephthalate (PET). Under the GreenScreen, BPA is rated a Benchmark 1 chemical, “to be avoided,” whereas lactic acid is scored at Benchmark 3, a much safer result. Accordingly, pursuant to 38 M.R.S.A. §§ 1696(1)-(2), PLA packaging should be deemed both presumptively safer and factually safer than packaging containing BPA. *BPA Alternatives Assessment* at 26-27, Ex. 15.

*d) Laminated pouches*

Laminated pouches manufactured by Cheer Pack NA consist of a polyester outer layer, middle layers that may include nylon or aluminum foil, and an inner layer of polyethylene or polypropylene (see above), which is in contact with the food. No priority chemicals or phthalates are used to make Cheer Pack pouches. Accordingly, pursuant to 38 M.R.S.A. §§ 1696(1)-(2), packaging in laminated pouches should be deemed both presumptively safer and factually safer than packaging containing BPA. *BPA Alternatives Assessment* at 22, Ex. 15.

e) *Aseptic cartons*

Aseptic packaging has been historically used for juices, soups and liquid dairy products. Aseptic containers consist of several layers of paper (about 70% of the package), polyethylene (24%), and aluminum foil (6%). Tetra Pak is a major manufacturer of aseptic packaging. Paper and forest products are exempt from the definition of consumer product under the Kid-Safe Products Act. Nonetheless, aseptic packaging does not contain any Chemicals of Concern identified by the State of Maine. Accordingly, pursuant to 38 M.R.S.A. §§ 1696(1)-(2), aseptic packaging should be deemed both presumptively safer and factually safer than products containing BPA. *BPA Alternatives Assessment* at 17, Ex. 15.

**3. Manufacturers have failed to demonstrate that BPA-free metal coatings are safer.**

As noted in Section IV.D above, as of June 14, 2012, none of the baby food manufacturers had fully complied with their legal obligation to submit an evaluation sufficient to characterize the safety of the alternatives to the continued use of BPA. Three of the four manufacturers that still sell baby food in glass jars have switched to a BPA-free coating on the metal lids of the container. But they have not provided the specific chemical identity or chemical constituents of the polymer coating. *BPA Alternatives Assessment* at 27, Ex. 15. Table E summarizes the state of public knowledge regarding alternative BPA-free lid coatings, based on the very general or indirect information that manufacturers provided to the State of Maine. Contrary to Maine law, the submissions are insufficient to characterize the safety of BPA-free lid coatings.

**Table E. BPA-free alternatives for metal lids have not been fully characterized<sup>58</sup>**

Company (Brand)	BPA-Free Polymer Coating on Metal Lids	Available?	Effective?	Safer?
none	Polyvinyl chloride (PVC)	YES	NO	NO
Nestlé (Gerber)	Polyester with melamine	YES	YES	UNKNOWN
Hero (Beech-Nut)	UNKNOWN	YES	YES	UNKNOWN
Hain Celestial (Earth's Best)	Polyester (primer) and Vinyl (topcoat)	YES	YES	UNKNOWN
none	Polyester without melamine	NOT YET	NOT YET	UNKNOWN

Similarly, many manufacturers have transitioned to BPA-free coatings for steel cans used to package canned foods. See Table F. Some, such as Eden Foods, already sell canned foods with BPA-free liners. Canned food intentionally marketed to children under age 3 is not currently subject to the requirement of Maine's BPA rule to submit a BPA use report and an alternatives assessment, and manufacturers have not publicly disclosed the chemistry of their alternative BPA-free coatings that they intend to bring to market. *BPA Alternatives Assessment* at 31-32, Ex. 15.

**Table F. BPA-free alternatives for metal cans have not been fully characterized**

Company	Canned Products	BPA-Free Metal Can Coating	Safer Alternative?	BPA-Free Since?
Eden Foods	Low acid foods e.g. beans	Oleoresinous e-enamel	UNKNOWN	1999
	High acid foods e.g. tomatoes	[Amber glass jars & metal lids]	Reduced BPA exposure	Starting in 2011
Trader Joe's	Corn, beans, fish, poultry, beef	UNKNOWN	UNKNOWN	2010?
ConAgra Foods	Tomato products	Vinyl	UNKNOWN	2011
	Dessert toppings & cooking sprays	Polyester	UNKNOWN	
General Mills	Muir Glen tomatoes	Vinyl	UNKNOWN	Oct. 2011
Amy's Kitchen	All canned foods	UNKNOWN	UNKNOWN	March 2012
Del Monte Foods	Some tomato, vegetables & fruit	UNKNOWN	UNKNOWN	2012
Campbell Soup	Soups, etc.	UNKNOWN	UNKNOWN	???

<sup>58</sup> Source: *BPA Alternatives Assessment* at 31-32. Ex. 15.

For example, Campbell's Foods, which intentionally markets canned food to toddlers, announced this year that: "We have already started using alternatives to BPA in some of our soup packaging and we are working to phase out the use of BPA in the lining of all of our canned products. The cost of this effort is not expected to be material."<sup>59</sup> Campbell's, however, has not provided information on the specific chemical identity of their BPA-free canned alternative or indicated their planned timeline for phasing out the use of BPA in its metal packaging. (Campbell's also sells some of the same products in aseptic packaging.)

In light of the lack of verifiable information regarding the safety of alternative metal coatings, Petitioners recommend that the Board extend the existing BPA alternatives assessment requirement, 06-096 CMR ch. 882, §4, to the manufacture, sale or distribution of toddler food prior to the effective date of the proposed sales prohibition. Such an additional requirement would help ensure compliance with a sales prohibition by requiring manufacturers to identify themselves and help ensure the safety of any alternative chemistries proposed or in use as BPA-free coatings on food cans.

## **VI. Conclusion**

For the reasons herein contained, the petitioners request that the Board of Environmental Protection prohibit in the State of Maine the sale, offer for sale, or distribution for sale of infant formula, baby food, and toddler food and beverages in packaging that contains the priority chemical BPA.

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<sup>59</sup> *BPA Alternatives Assessment* at 32, n.76. Ex. 15.

Respectfully Submitted,

June 21, 2012

Environmental Health Strategy Center

By: 

Environment Maine

By: 

Maine Healthy Children's Project of the Learning Disabilities Association of Maine

By: 

Maine Labor Group on Health

By: 

Maine Council of Churches

By: 

Maine Organic Farmers and Gardeners Assoc.

By: 

Maine People's Alliance

By: 

Maine Women's Lobby

By: 

Natural Resources Council of Maine

By: 

Physicians for Social Responsibility - Maine Chapter

By: 

Planned Parenthood of Northern New England

By: 

Toxics Action Center

By: 

## APPENDIX

### BPA Petition Materials:

- Ex. 1. Rulemaking Petition and Proposed Rule Modifications.

### Maine Statutes, Public Laws and Resolves, and Legislative Documents:

- Ex. 2. P.L. 2007, ch. 643 (2008 Kid-Safe Products Act).
- Ex. 3. P.L. 2011, ch. 319 (2011 Amendments to the Kid-Safe Products Act).
- Ex. 4. Maine Revised Statutes, Title 38. WATERS AND NAVIGATION, Chapter 16-D. TOXIC CHEMICALS IN CHILDREN'S PRODUCTS, 38 M.R.S.A. §§ 1691-1699-B (codification of Kid Safe Products Act as amended).
- Ex. 5. 125<sup>th</sup> Legislature, LD 1129 (as originally presented by Rep. Hamper).
- Ex. 6. 125<sup>th</sup> Legislature, Environment and Natural Resources Committee, *Committee Amendment* to LD 1129.
- Ex. 7. Resolves 2011, ch. 25 (Approving provisional ch. 882 rules).

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