

# POISON IN PAINT, TOXICS IN TOYS

An exclusive report on  
household products that  
contain two chemicals that  
wreak hormone havoc:

**NPEs** (nonylphenol ethoxylates)

**BPA** (bisphenol A)



**DECEMBER 2011**

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### **Environmental Health Strategy Center, Portland, Maine**

[www.preventharm.org](http://www.preventharm.org)

The Environmental Health Strategy Center is a public health organization that promotes human health and safer chemicals in a sustainable economy.



### **Safer Chemicals, Healthy Families (SCHF), Washington, DC**

[www.saferchemicals.org](http://www.saferchemicals.org)

The Safer Chemicals, Healthy Families coalition represents more than 11 million Americans in 300 organizations across the nation that are united by our common concern about toxic chemicals in our homes, places of work, and products we use every day.



### **SAFER States, Portland, Oregon**

[www.saferstates.org](http://www.saferstates.org)

The State Alliance for Federal Reform (SAFER) of chemical policy, or SAFER States, is a coalition of state-based organizations that champion solutions to protect public health and communities from toxic chemicals.

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## Executive Summary

For the first time more than 650 brand name household products that contain one of two toxic chemicals of high concern, **NPEs** (nonylphenol ethoxylates) and **BPA** (bisphenol A), have been publicly identified. Twenty-five manufacturers reported their use of NPEs and BPA in consumer products sold in Maine under a 2008 state law on chemical safety.

State chemical policies are a proven, effective means for gathering previously unavailable information on chemicals used in everyday products. Most manufacturers reported **NPEs in household paints** (291 products) and **BPA in plastic toys** (280 products). NPEs were also reported in 61 other home maintenance products (such as cleaners and wood stains) and 14 personal care products (i.e. antiseptic iodine solution and hair care products). For specific brand name product results, visit [www.HealthyStuff.org](http://www.HealthyStuff.org).

Studies have shown that BPA and NPEs mimic the sex hormone estrogen. BPA harms brain development, behavior and the prostate gland, among many other adverse health effects. NPEs are highly toxic to aquatic life, degrade into a long-lived chemical that builds up in the food chain, and may harm reproduction and development in humans. Aggregate exposure to BPA and NPEs from all sources

threatens the health of children, workers and the environment.

New information on chemical use in household products will improve decisions to protect family health and the environment. Government agencies and manufacturers can decide to study exposure, search for safer alternatives or phase out use of the chemical. Consumers and retailers can avoid chemicals of high concern when they purchase everyday products.

Some companies are apparently not reporting chemical use as required by Maine law. For example, manufacturers **failed to report BPA use in baby food** in the lining of the metal lids of glass jars. Other companies have already switched to safer alternatives. For example, most manufacturers have recently **ended BPA use in infant formula** can linings.

This report reveals a badly broken federal safety system that still allows the widespread use of toxic chemicals in consumer products. To protect public health and ensure product safety, **Congress should pass the Safe Chemicals Act of 2011** to overhaul the Toxic Substances Control Act (TSCA), which has never received a major update in 35 years.

## Introduction

More and more states are enacting laws to protect the health of American families from toxic chemicals because our federal chemical safety system is so badly broken. In the last decade, 18 states have passed more than 70 laws to ban chemicals in products or create new chemical management programs at the state level. Four states, so far, have passed comprehensive chemical

policies: California, Maine, Minnesota and Washington. While Congress lags behind on TSCA reform, state chemical safety laws are working.<sup>1</sup>

Under Maine's 2008 Kid Safe Products Act, manufacturers must disclose the use of priority chemicals of high concern in consumer products.

The State may require companies to search for safer alternatives. Priority chemicals in products may be phased out when children are exposed and safer alternatives are available, effective and affordable.<sup>2</sup>

In 2010, Maine named the first two priority chemicals under the Kid Safe Products Act: bisphenol A (BPA), and nonylphenol (NP) and nonylphenol ethoxylates (NPEs) as a class. Maine used the law to ban the use of BPA in reusable food and beverage containers, becoming the ninth state to prohibit BPA in plastic baby bottles and sippy cups. Infant formula and baby food makers must assess the availability

of safer alternatives to BPA by January 1, 2012. Manufacturers were required to report their use of BPA in infant formula, baby food, toys, childcare articles and tableware, and their use of NPEs in cosmetics, personal care products, cleaners and home maintenance products by October 3, 2011.<sup>3</sup>

Twenty-five manufacturers reported on priority chemical use in consumer products to the Maine Department of Environmental Protection by the deadline. For a fully searchable listing of the more than 650 consumer products reported, visit [www.HealthyStuff.org](http://www.HealthyStuff.org).

## Major Findings



### 1 NPEs are in more than 291 HOUSEHOLD PAINTS

Nine companies reported the presence of NPEs in many brands of household paint (see Table 1). The highest concentration of NPEs in a paint product was more than 10,000 parts per million (or 1%). Children in the home may be exposed to NPEs and its breakdown product, nonylphenol (NP) from paints, cleaners and other home maintenance products. One study concluded that people are exposed to NPEs through paint mixing and spraying.<sup>4</sup> Another study found NP in the indoor air of 100% of homes tested, and NP and NPEs in 80% of all household dust samples.<sup>5</sup> Cleaning of paintbrushes or rollers under the faucet will wash NPEs down the drain, which may result in the discharge of persistent chemicals that are highly toxic to fish and other aquatic life into sensitive waterways.<sup>4</sup>

### 2 BPA is in 280 PLASTIC TOYS

Seven companies reported BPA in toys made from polycarbonate plastic, the same material formerly used to make plastic baby bottles and sippy cups. Most of the BPA-containing toys are PLAYMOBIL figures and play sets; the 248 toys reported contain 17.3 pounds of polycarbonate plastic, according to the manufacturer. Sixteen of the toys with BPA are Chicco brand rattles and other baby products made by Artsana. (See Table 2).

Children may be exposed to BPA from playing with toys. Every toy listed (except two made by Jakks Pacific) includes BPA-containing plastic parts that can come into direct contact with a child's skin or mouth. BPA forms the chemical backbone of polycarbonate plastic, which continually releases small amounts of BPA that can increase when the plastic is wet, heated or stressed.<sup>6</sup> Children may be exposed to BPA when toys are mouthed or handled,<sup>7</sup> or if toys shed BPA into household dust that is ingested or breathed.<sup>5</sup> One study found that significant amounts of BPA leached out of baby toy books into artificial saliva or water used to simulate infant sucking and chewing.<sup>8</sup>

### 3 NPEs are also in at least 69 OTHER PRODUCTS

NPEs were also reported to be present in home maintenance products other than household paints, including various cleaners (more than 15 products), wood stains and finishes (11 products), paint colorants (9), special purpose paints (6), caulking



(6) and one of each of the following products: disinfectant, drain treatment, sealant/filler, surface care and protection, and spray foam insulation. Manufacturers also reported NPEs in personal care products, including eight brands of antiseptic iodine solution and six hair care products. Some products containing NPEs may be washed down the drain and into sensitive waterways from direct use (e.g. a drain cleaner), product disposal, or from rinsing and cleaning of brushes, rags or sponges under the faucet in the sink.

## 4 COMPANIES ARE SWITCHING TO SAFER SUBSTITUTES

Some manufacturers are phasing out BPA and NPEs in products in favor of available alternatives that are presumably safer, effective and affordable. For example, the three infant formula makers that account for 98% of U.S. sales<sup>9</sup> reported that, as of October 2011, they no longer sell baby formula in metal cans that contain BPA in the lining. Abbot Laboratories, MeadJohnson and Nestlé/Gerber all replaced BPA in infant formula cans within three years of investing in research and development of alternatives.

Procter & Gamble, which previously phased out NP and NPEs from its high-volume laundry detergents and cleaning products,<sup>10</sup> will also phase out NPEs beginning in 2012 in hair care products, which are product lines they acquired with the purchase of another company, according to its report to the State of Maine.

Many toys are manufactured with plastic parts that do not contain BPA. The use of polycarbonate plastic containing BPA in toys is not necessary. For example, Hasbro indicated that it substituted BPA-containing plastic with an alternative BPA-free material in its toys.

## 5 SOME COMPANIES MAY NOT BE REPORTING

Some companies failed to report chemical use even though they appear to have been required by Maine law and regulation to do so by the October 3rd deadline. The full scope of industry under-reporting is not yet known.

No manufacturers of baby food reported any use of BPA in packaging, even though BPA-containing epoxy resin linings are still widely used on the metal lids of glass baby food jars. Nestlé/Gerber sent a letter to

Maine Department of Environmental Protection stating that the company “has fully implemented packaging made without BPA for our entire Gerber portfolio” but then stated in an email that: “all glass-jar baby food lids, industry-wide, contain minimal amounts of BPA in epoxy resin.” **The Hain-Celestial Group**, the makers of Earth’s Best baby food, also failed to submit a BPA use report, although in an email to a consumer they said they still use BPA glass-jar lid linings covered with a second lining to protect the baby food from BPA. **Beech-Nut Nutrition Corporation**, a subsidiary of Hero AG, also failed to submit a report on their use of BPA in baby food jar lids.<sup>11</sup>

Although the three largest manufacturers of infant formula ended BPA use in the linings of metal cans as of October 2011 (see above), a fourth company, **PBM Nutritionals**, failed to report its past use of BPA or future plans. PBM makes infant formula for store brands and private labels, such as Baby Basics, Bright Beginnings, Good Sense, Parent’s Choice, Target and Walgreens. The U.S. Food and Drug Administration previously measured BPA in canned infant formula manufactured by PBM Nutritionals.<sup>12</sup>

Infant formula used to be a major source of young children’s exposure to BPA.<sup>13</sup> The BPA leaked from the epoxy resin lining commonly added to metal cans and lids used to package foods and beverages. BPA is used to make the chemical BADGE, which is the building block for most epoxy resins. Canned foods continue to be a significant source of BPA exposure.<sup>14</sup>

**Maine law prohibits the sale of products in Maine if they contain priority chemicals but manufacturers failed to submit priority chemical use reports as required**, unless the Environmental Commissioner expressly exempts them from the ban because “the lack of availability of the children’s product could pose an unreasonable risk to public health, safety or welfare.”<sup>15</sup>



Table 1.

# The Reported Use of NPEs in Consumer Products

Priority Chemical of High Concern: NPEs (nonylphenol ethoxylates)			
Manufacturer	Brand	#	Description
True Value Manufacturing, Inc.	EasyCare, Painter's Select, WeatherAll, Premium Décor, Woodsman, True Value, etc.	172	Household paints, wood finish, colorants, surface cleaners, stain removers
PPG Industries Architectural Finishes, Inc.	Speedcraft, Speedhide, etc.	61	Household paints
Benjamin Moore & Co.	Moorcraft, EcoSpec, SuperSpec, Regal, etc.	41	Household & special purpose paints, colorants, wood finish
Complementary Castings Corp. dba Insl-X	Maxum, Sure Step	23	Household & special purpose paints, wood finish, paint remover
AkzoNobel Paints	Glidden, Lifemaster, Flood, Martha Stewart Living, etc.	22	Household paints
Behr Process Corporation	Behr Premium Plus, 365 Deck Plus, Epoxy Gray	19	Household paints
Vi-Jon, Inc.	Duane Reade, Swan, Ahold, TopCare, Up&Up, Equate, Smart Sense, Meijer	8	Topical antiseptic: 10% Povidone iodine solution
3M	3M, Bondo	7	Caulking, surface cleaners, sealant/filler
The Procter & Gamble Company	Wella, Clairol, Fekkai	6	Hair coloring & styling
	NOTE: Product discontinuation plan will be in place by June 2012 for Wella & Clairol. Manufacture has ceased for Fekkai, only inventory being sold.		
The Valspar Corporation	Valspar	6	Household paints
The Sherwin-Williams Company	Sherwin-Williams (appears to have not itemized brands)	>4	Household paints, wood finish, caulking
Conklin Company, Inc.	Show Kote, Sanox II, MOX-e, Shine and Stay	4	Household paints, disinfectant, cleaners
Henry	RT3090	1	Insulation spray foam
Pro Products LLC	Drain Out	1	Drain treatment
ChemQuest, Inc.	<i>Claimed confidential</i>	>1 ?	<i>Claimed confidential</i>

NOTE: In Tables 1 and 2, not all products under a given brand name necessarily contain the priority chemical, nor are all brand names listed in every case. For a complete listing of every brand name product that contains NPEs or BPA as reported by its manufacturer to the Maine Department of Environmental Protection in October 2011, visit [www.HealthyStuff.org](http://www.HealthyStuff.org).

Table 2.

# The Reported Use of BPA in Consumer Products

Priority Chemical of High Concern: BPA (bisphenol A)				
Category	Manufacturer	Brand	#	Description
TOYS	geobra Brandstätter GmbH & Co. KG	PLAYMOBIL	248	Play figures and sets
	Artsana USA, Inc.	Chicco	17	Baby rattles & toys
	Jakks Pacific Inc.	SpyNet, MXS, Pokemon	9	Spy toys, toy motorcycle & two other toys
	Leapfrog Enterprises, Inc.	Leapfrog	3	Tag School House, Clickstart (Green & Pink)
	CDI (Creative Designs International Ltd.)	Disney	1	Princess Musical Rose
	Spin Master Ltd.	Air Hogs	1	Wind Flyer (propeller)
	Klutz (Scholastic Inc.)	Klutz	1	Yoyo
		Claimed confidential	1	Claimed confidential
	Hasbro, Inc.	Hasbro withdrew its submitted report, claiming they were exempt from reporting because BPA was a "contaminant." They said they substituted an alternate BPA-free material in this product, which now contains no BPA.		
INFANT FORMULA	Abbot Laboratories	Similac	Reported that BPA is no longer used in the linings of metal cans or lids as of October 2011	
	MeadJohnson & Co. LLC	Enfamil		
	Nestlé Infant Nutrition / Gerber Products Co.	Good Start		
BABY FOOD	Nestlé Infant Nutrition / Gerber Products Co.	Reported that BPA is no longer used as of October 2011. However, Gerber still says it uses BPA on its web site <sup>16</sup> and in response to consumer inquiries.		
CHILD CARE ARTICLES	No reported use of BPA			
TABLEWARE				

# Conclusions

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These chemical use reports on BPA and NPEs in consumer products offer larger lessons.

## ✓ **State chemical policy works, responsible companies report chemical use**

State chemical policy works. Chemical use reporting under Maine's Kid Safe Products Act is filling critical data gaps on chemicals in consumer products. Previously, the U.S. Environmental Protection Agency has stated, for example, that: "Very little information is available on exposure [to BPA] from consumer products"<sup>17</sup> and "No readily available quantitative information on exposure to NP or NPEs were found for ... uses of NPEs in industrial and institutional cleaning products, or lacquers and varnishes."<sup>4</sup> Information on chemical use is needed to assess exposure potential and available alternatives.

## ✓ **Chemical use reports provide information to improve decisions**

New information on chemical use in household products will improve decisions to protect family health and the environment. Government agencies and manufacturers can decide to study exposure, search for safer alternatives or phase out use of the chemical. Consumers and retailers can avoid chemicals of high concern when they purchase everyday products.

## ✓ **It's time to find safer substitutes to toxic chemicals in products**

Industry and government should join proven corporate leaders in the search for safer alternatives. Toxic chemicals don't belong in household products, especially when safer alternatives can provide the same function at a similar cost. Since manufacturers eliminated polycarbonate plastic with BPA from baby bottles and sippy cups, they can do the same for toys. Since product makers phased out NPEs in detergents, they can do the same for household paints, cleaners and other home maintenance products.

## ✓ **Our federal chemical safety system is badly broken**

This report reveals a broken federal safety system that still allows the widespread use of toxic chemicals in consumer products. The federal government did not know which products contain BPA and NPEs before these chemical use reports were submitted to the State of Maine. Federal agencies have still not determined the safety of the use of BPA and NPEs, considering all uses and sources of exposure.



# Recommendations

## 1 CONGRESS should pass the Safe Chemicals Act of 2011

Maine and other states can't protect the health of all American families on their own. Fixing our broken federal chemical safety system is long overdue. S.847, the [Safe Chemicals Act of 2011](#), represents a common sense, science-based overhaul of the 35 year-old Toxic Substances Control Act (TSCA). The Safe Chemicals Act requires chemical manufacturers to provide health information and demonstrate the safety of all chemicals, while requiring immediate action to restrict uses of the worst chemicals based on the best science.

## 2 The STATES should ban toxic chemicals in consumer products

Until Congress acts on TSCA reform, Maine and other states should continue to ban chemicals of high concern in everyday products in favor of safer alternatives. State leadership will meet public demand for safer products in the absence of federal action.

## 3 The MARKETPLACE should avoid products with toxic chemicals

Consumers and retailers should choose products to buy for their homes or stock on their store shelves that are free of toxic chemicals of high concern. Market demand for safer products will drive progress toward greener chemistry in the absence of federal action.

## 4 MANUFACTURERS should make the switch to safer alternatives

- Paint makers should switch to safer alternatives to NPEs as soon as possible
- Toy makers should immediately replace polycarbonate plastic parts with BPA-free materials that are already widely available, effective and affordable

- Baby food makers should switch to BPA-free linings for glass-jar lids as soon as possible
- Other manufacturers should make an orderly transition to NPEs-free alternatives

## 5 MAINE should continue to enforce the Kid Safe Products Act

As next steps, the Maine Department of Environmental Protection should:

- Take enforcement action against any manufacturers that were required to report use of BPA or NPEs but who failed to do so
- Begin action to require paint manufacturers to assess the alternatives to NPEs
- Begin action to phase out the use of BPA in toys with polycarbonate plastic parts
- Begin action to phase out the use of BPA in all infant formula packaging and baby food

## 6 The CHEMICAL INDUSTRY should become part of the solution

The chemical industry should drop its relentless opposition to TSCA reform and every federal and state regulation of toxic chemicals. Enough already, join the modern era!



# Summary Facts On BPA And NPEs

## BPA

“There is no controversy that BPA is an endocrine disruptor, acting by inhibiting the effects of estrogen, a vital reproductive and developmental hormone. ... The current consensus of most scientists, as well as U.S. and international government agencies, is that there is sufficient evidence that BPA produces adverse effects at environmentally relevant exposures.

Well over 100 studies have documented 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 during the prenatal or postnatal period in animal models.”

*Maine Center for Disease Control and Prevention*<sup>18</sup>

Known Concerns with BPA	Harm to reproduction, harm to brain and behavioral changes, pervasive human and environmental exposure
Higher Risk Populations	Developing fetuses, infants, and children Aquatic organisms
Major Uses	Polycarbonate plastic, epoxy resins, thermal paper, flame retardant
Consumer Product Uses	Canned foods, baby food (and other foods with glass-jar lids), cash receipts, toys, printed circuit boards
Major U.S. Manufacturers	Bayer MaterialScience, SABIC Innovative Plastics, The Dow Chemical Company, Hexion Specialty Chemicals, and Sunoco Chemicals

## NP and NPEs

“Nonylphenol (NP) and nonylphenol ethoxylates (NPEs) are produced in large volumes, with uses that lead to widespread release to the aquatic environment. NP is persistent in the aquatic environment, moderately bioaccumulative, and extremely toxic to aquatic organisms. NP’s main use is in the manufacture of NPEs. NPEs are nonionic surfactants that are used in a wide variety of

industrial applications and consumer products. NPEs, though less toxic than NP, are also highly toxic to aquatic organisms, and in the environment degrade to more environmentally persistent NP. NP has also been detected in human breast milk, blood, and urine and is associated with reproductive and developmental effects in rodents.”

*U.S. Environmental Protection Agency*<sup>4</sup>

Known Concerns: NP & NPEs	Extreme aquatic toxicity; Skin and eye irritation; Harm to reproduction and development; persistent, bioaccumulative and toxic (PBT)
Higher Risk Populations	Fish, aquatic invertebrates, and aquatic plants Developing fetuses, infants, and children
Major Uses	Surfactants, emulsifiers
Consumer Product Uses	Industrial detergents, cleaners, paints, indoor pesticides, food packaging, cosmetics
Major U.S. Manufacturers	AkzoNobel N.V., Dover Chemical Corporation, The Dow Chemical Company, Huntsman Corporation, Rhodia (Solvay Group), and SI Group, Inc.

# Endnotes

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- 11 At the time of publication of this report, these companies had not publicly responded to inquiries from the Maine Department of Environmental Protection (DEP) regarding their reporting obligations under the law. We do not know if they intend to submit late reports or claim that they are exempt from reporting. We do not believe that these companies could properly claim that BPA is a "contaminant" and thus exempt from reporting below a de minimis level or at all. That's because BPA is intentionally added to metal packaging when BPA is used to make the chemical BADGE which is used to make epoxy resins used to line the metal cans and lids. The term "contaminant" is not defined in statute and DEP's proposed definition in rule making is being contested and is not yet settled.
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## Important Note

This document is meant to educate the public about whether certain chemicals were reported to be present in consumer products by their manufacturers in compliance with the Priority Chemical Reporting Regulation (Chapter 882/883) of the Maine Department of Environmental Protection (DEP). All of the information on the presence of chemicals in certain products was obtained directly from the Maine DEP. Environmental Health Strategy Center, SAFER and SCHF did not conduct studies to determine if the chemicals of concern will migrate or come out of the product, causing a direct exposure. Therefore, Environmental Health Strategy Center, SAFER and SCHF cannot determine whether the presence of these chemicals in a product results in human exposure, nor can Environmental Health Strategy Center, SAFER and SCHF estimate the health risk posed by any product. Studies intended to examine whether or not chemicals of concern do come out of products under various conditions can be done. Some manufacturers report having done studies of this kind. Please contact manufacturers directly if you are interested in that information.

The chemical use results, which are summarized herein and detailed at [www.HealthyStuff.org](http://www.HealthyStuff.org), only apply to the specific products reported on by their manufacturers. Earlier or later versions of the same products may contain different chemical formulations.



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Studies have shown that BPA and NPEs mimic the sex hormone estrogen. Aggregate exposure to BPA and NPEs from all sources threatens the health of children, workers and the environment.

New information on chemical use in household products will improve decisions to protect health and the environment. Government agencies and manufacturers can decide to study exposure, search for safer alternatives or phase out use of the chemical. Consumers and retailers can avoid chemicals of high concern when they purchase everyday products.

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