

# **Trouble in Toyland**

**The 25th Annual Survey of Toy Safety**

**U.S. PIRG Education Fund**

**November 2010**

## Acknowledgements

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Cover design by: Erica Rosset, Public Interest GRFX

Cover photos by: Jack Qi, under license from Shutterstock.com, Brian Walker

The authors would like to thank Jeff Gearhart, Research Director for HealthyStuff.org, Ed Mierzwinski and Brian Walker of U.S. PIRG for their help with the research and production of this report. Special thanks to the Colston Warne program of Consumers Union for supporting our work on consumer protection issues. Additional thanks to the Beldon Fund and individual contributors for their generous support of our work on environmental health and toxics issues.

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## Executive Summary

The 2010 *Trouble in Toyland* report is the 25th annual Public Interest Research Group (PIRG) survey of toy safety. In this report, U.S. PIRG provides safety guidelines for consumers when purchasing toys for small children and provides examples of toys currently on store shelves that may pose potential safety hazards.

Over the past twenty five years, the PIRG report has identified hazards in toys and children's products that could cause an acute injury from small parts that pose a choking hazard, to strangulation hazards from cords on pull toys, to laceration hazards from edges that are too sharp. Our report has led to at least 150 recalls and other regulatory actions over the years, and has helped us to advocate for stronger federal laws to protect children from unsafe products.

While most product safety regulations address mechanical hazards, the 2008 Consumer Product Safety Improvement Act began to address certain toxic chemicals in toys and children's products that represent chronic hazards, such as lead and phthalates.

In April 2010, the President's Cancer Panel – a group of three distinguished experts appointed by President Bush to evaluate the nation's cancer program – raised the alarm about our ubiquitous exposure to toxic chemicals. “The American people – even before they are born – are bombarded continually,” the panel wrote.<sup>1</sup> In effect, our lives have become a giant, uncontrolled experiment on the relationship between toxic chemicals and our health.

American children today grow up surrounded by synthetic chemicals. Their food containers are made with plastic. Their homes and yards are treated with pesticides. Their families use cosmetics and personal-care products that contain hundreds of manufactured additives. The furniture and electronics in their homes contain flame retardant chemicals.

As their minds and bodies grow and develop, children are particularly vulnerable to chemicals that could affect proper development. Because children have a natural tendency to touch and mouth objects as a way of exploring the world around them, harmful chemicals can leach out of these products, enter their bodies and cause health problems. Chemicals have become such a close part of our lives that scientists can find more than 100 industrial chemicals and pollutants in the bodies of every mother and child.<sup>2</sup>

There are now more than 83,000 industrial chemicals on the market in the United States.<sup>3</sup> But very little is known about most of the chemicals in commerce. The health effects of almost half of the major industrial chemicals have not been studied at all.<sup>4</sup>

In 2008, Congress responded to an unprecedented wave of recalls of toys and other children's products by passing the first major overhaul of the Consumer Product Safety Commission since it was established during the Nixon Administration. By passing the landmark Consumer Product Safety Improvement Act (CPSIA) in August 2008,<sup>5</sup> Congress not only expanded the agency's budget, it also gave the CPSC more

tools to hold corporate wrongdoers accountable and speed recalls, moved toward limiting toxic lead and phthalates in certain toys and children's products, and greatly improved import surveillance.

The Consumer Product Safety Improvement Act, together with stronger enforcement from the CPSC, has made good steps in the right direction toward reducing mechanical toy hazards like choking, and chemical hazards from lead and phthalates in certain products. However, there are tens of thousands of toxic chemicals that are still not regulated for the many uses in our children's lives.

In researching the report, we visited numerous national chain toy stores and other retailers in September and October 2010 to identify potentially dangerous toys. We analyzed CPSC notices of recalls and other regulatory actions to identify trends in toy safety. This year, we focused our investigation on hazards from toys and other children's products that contain the toxic chemicals lead and phthalates, and other metals restricted by the CPSIA. Because choking continues to be the leading cause of death related to toys, we have also identified toys that may pose a choking hazard to children.

Our key findings include:

#### **- LEAD IN TOYS -**

Exposure to lead can affect almost every organ and system in the human body, especially the central nervous system. Lead is especially toxic to the brains of young children.

Lead has no business in children's products, whether in paint or coatings or in metal toys, jewelry or other children's products (vinyl bibs, lunchboxes, etc). The Consumer Product Safety Improvement Act bans lead except at trace amounts in paint or coatings (90 ppm limit as of August 2009), and in any toys, jewelry or other products for use by children under 12 years (300 ppm limit as of August 2009, and 100ppm by August 2011).

- According to our analysis of CPSC recalls over the past twelve months, CPSC has recalled more than half a million toys or other children's products for violations of the lead paint standard. The CPSC has recalled an additional 392,000 toys and other children's products for violation of the 300 ppm lead standard.

- Some children's toys and jewelry may contain unacceptable levels of lead. We found toys and other children's products that may exceed the CPSIA's lead paint standards.

#### **PHthalates in Children's Products-**

Numerous scientists have documented the potential health effects of exposure to phthalates in the womb or at crucial stages of development. U.S. EPA studies show that the cumulative impact of different phthalates leads to an exponential increase in associated harm. According to data from the U.S. Centers for Disease Control and Prevention (CDC), levels of phthalates found in humans are higher than levels shown to cause adverse health effects. The data also show phthalate levels are highest in children.

Section 108 of the CPSIA bans toys containing three classes of phthalates for all children, and bans toys containing three more phthalates if they can be put in younger

children's mouths. This provision went into effect in February 2009.

- This year, we found two products that laboratory testing showed to contain levels of phthalates that may exceed limits allowed by the CPSIA.

#### **- CHOKING HAZARDS -**

Choking on small parts, small balls and balloons remains a leading cause of toy-related deaths and injuries. Between 1990 and 2009, at least 198 children died after choking or asphyxiating on a toy or toy part; two children died in 2009 alone.

The law bans small parts in toys for children under three and requires an explicit, prominent warning label on toys with small parts for children between the ages of three and six. In addition, balls with a diameter smaller than 1.75 inches are banned for children under three years old.<sup>6</sup>

Although most toys on store shelves are safe, there are still some toys that may pose choking hazards. Specifically:

- Our analysis of recalls and other actions taken by the CPSC<sup>7</sup> from October 1, 2009-October 30, 2010 revealed that choking hazards were the leading cause of such actions. In the past year, 5.8 million toys and other children's products have been recalled in the U.S and Canada due to choking hazards.
- Some toys may pose a choking or suffocation hazard even if they meet the letter of the law. We continue to find toys with small parts that just barely met the CPSC standard. We recommend making the test for small parts more protective of children under

three. CPSC also should consider special labeling for toys shaped like corks or toy nails, which pose special suffocation risks because of their shape.

This year, we were alerted by parents who had to administer the Heimlich maneuver on their one year old child to prevent him from choking on one such small part, a small peg in a train set labeled for children over one year old that was about an eighth of an inch longer than the small part test.

#### **- RECOMMENDATIONS -**

##### **FOR POLICY MAKERS**

- Congress must ensure that the CPSC's increased budget authorizations for the next five fiscal years are fully funded in appropriations, and continue vigorous oversight of implementation and enforcement of the new law.
- Manufacturers should be required to provide all hazard and health-impact information to the state and federal government so agencies can begin to assess the thousands of chemicals currently on the market for which little or inadequate data are available.
- The federal government must act based on the overwhelming weight of evidence showing that some chemicals might harm human health, and phase out dangerous chemicals.
- Manufacturers should be required to label products with the names of these chemicals in order to allow parents to choose less toxic products.

#### FOR THE CPSC

- CPSC should review and where necessary, expand its definition of a “small part” or “small toy” to include parts and toys that are larger than the current standard but have been shown to pose a choking hazard to children.
- CPSC should continue its work to implement and enforce the Consumer Product Safety Improvement Act’s provisions.
- CPSC should vigorously enforce the CPSIA bans on toxic chemicals in all toys and products for children.
- CPSC must continue to implement all rules required under the new law and must ensure that new third-party testing programs meet the new law’s standards. As the CPSC implements the CPSIA- mandated publicly-accessible hazards database requirement, it

must make sure that it provides the information consumers need to make informed choices in the marketplace.

#### FOR CONSUMERS

Be vigilant this holiday season, and remember:

- The CPSC does not test all toys, and not all toys on store shelves meet CPSC standards.
- There is no comprehensive list of potentially hazardous toys. Examine toys carefully for potential dangers before you make a purchase. Shop with U.S. PIRG’s Toy Safety tips available at [www.toysafety.mobi](http://www.toysafety.mobi)
- Report unsafe toys or toy-related injuries to the CPSC at [www.cpsc.gov](http://www.cpsc.gov).

## Introduction

Toys should entertain and educate children, but poorly designed and constructed toys can cause injury and even death. According to data from the Consumer Product Safety Commission (CPSC), at least 12 children, none older than 15 years old, died in 2009 from toy-related injuries. Two of the children died from choking or asphyxiating on a toy or toy part. More than 250,000 children were treated in emergency rooms for injuries related to toys in 2009.<sup>8</sup>

In August 2008, **The Consumer Product Safety Improvement Act of 2008** was signed into law. The CPSIA was the first major overhaul of the Consumer Product Safety Commission since the early 1970's. In addition to giving the agency much needed increases in its budget and authority, the new law established tough new testing standards for toys and other children's products, and banned toxic lead and phthalates in children's products.

U.S. PIRG and other organizations had long sought to strengthen the CPSC through rulemaking petitions, lawsuits and Congressional efforts. Yet, except for the 1994 passage of the Child Safety Protection Act, our efforts had largely been in vain.

Over the past two years, provisions of the Consumer Product Safety Improvement Act have begun to take effect. The law's restrictions on the toxic chemicals lead and phthalates began to take effect in February 2009. Similarly, the new third party testing and certification regime established by the CPSIA took effect in September 2009 for products manufactured after that date.

While the CPSIA and stronger enforcement by the CPSC have taken major steps forward in limiting toy hazards, there is much more to be done. The CPSIA only regulates fourteen chemicals in certain toys and other children's products. There are more than 80,000 industrial chemicals on the market today, most with little or no testing for their effects on human health.

This report is a progress report on the implementation of the new law and an examination of the marketplace for common hazards. Our researchers went to national chain discount stores and larger stores to identify potential hazards. Our research focused on hazards from toxic chemicals including lead and phthalates, as well as choking. We readily found examples on store shelves.



## Lead in Toys and Children's Products

Health officials and children's health advocates have long sought to reduce children's daily exposure to lead, which can stunt mental and physical development. Lead-based paint is a common and long-term concern reiterated in recent years by the massive recalls of popular toys including Curious George, Thomas the Tank Engine, Dora the Explorer, other Sesame Street characters, and SpongeBob Squarepants, to name some of the iconic toys subject to recall in 2007 and 2008.

### The Dangers of Lead

Exposure to lead can affect almost every organ and system in the human body, especially the central nervous system. Lead is especially toxic to the brains of young children. A child exposed to a single high dose of lead—such as by swallowing a piece of metal jewelry containing lead—can suffer permanent neurological and behavioral damage, blood poisoning, and life-threatening encephalopathy. Exposure to low doses of lead can cause IQ deficits, attention deficit hyperactivity disorder, and deficits in vocabulary, fine motor skills, reaction time, and hand-eye coordination.<sup>9</sup>

Children are more vulnerable to lead exposure than adults, since young children often put their hands and other objects in their mouths. Their growing bodies absorb more lead and children's developing brains and nervous systems are more sensitive to the damaging effects of lead.

Scientists have not identified a "safe" level of lead exposure for children.<sup>10</sup> Research published in the *New England Journal of Medicine* in 2003 showed that children can

lose IQ points at levels of lead in blood below the "official" level of concern as defined by the Centers for Disease Control.<sup>11</sup>

An interim CPSC lead policy did not prevent jewelry with dangerous levels of lead from falling through the cracks. In March 2006, CPSC recalled 300,000 Reebok heart-shaped charm bracelets. A four year-old child from Minneapolis died in February 2007 of acute lead poisoning after he swallowed a piece from one of these bracelets.<sup>12</sup> During autopsy, doctors removed the Reebok charm from the boy's stomach and learned that it contained 99% lead by weight.<sup>13</sup>

In 2007, CPSC issued virtually innumerable recalls for excessive lead paint, including, for example, 1.5 million Thomas the Tank Engine toys and parts,<sup>14</sup> 967,000 Sesame Street, Dora the Explorer, and other children's toys,<sup>15</sup> and 250,000 SpongeBob SquarePants toys,<sup>16</sup> among others. Recalls for lead and lead paint continued in 2008. In 2008, the CPSC announced at least 64 excessive lead recalls totaling over 6.3 million units. Forty-seven recalls (47) were lead paint violations; 17 recalls were children's jewelry or trinkets. Typical recalls included 67,000 Claire's necklaces, 57,000 Benjamin pendants, and 18,500 RR Donnelley miscellaneous learning toys.<sup>17</sup>

### Federal Standards for Lead

Under the Consumer Product Safety Act, regulations banned paint containing lead in a concentration of greater than 600 parts per million (0.06% by weight).<sup>18</sup> Under the Federal Hazardous Substances Act, CPSC could deem other products, such as articles of metal jewelry, as "hazardous substances" if

they contain toxic quantities of lead sufficient to cause substantial illness as a result of reasonably foreseeable handling or use, including ingestion.<sup>19</sup> If such jewelry is intended for use by children and the toxic lead content is accessible by a child, it then constitutes a banned hazardous substance under the law.<sup>20</sup>

The Consumer Product Safety Improvement Act of 2008 bans lead in toys and children's products on a phase-out schedule outlined below. After the effective dates, these products cannot be manufactured, imported for sale or sold.

- **February 2009:** Toys and children's products containing lead in excess of **600 parts per million (ppm)** became banned hazardous substances.
- **August 2009:** The maximum allowable amount of lead in paint and surface coatings decreased from **600 ppm to 90 ppm**.
- **August 2009:** Toys and children's products containing lead in excess of **300 ppm** became banned hazardous substances.
- **August 2011:** Toys and children's products containing lead in excess of **100 parts per million (ppm)** will become banned hazardous substances.

This final limit may be altered by the CPSC if it is determined to be technologically infeasible.

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### **Findings: Lead**

- U.S. PIRG's analysis of recalls and other regulatory actions between October 2009 and October 2010 showed that nearly 1.3 million toys and other children's products have been subject to such action due to potential violation of the CPSIA lead paint standard, with another 102,700 units recalled because of violation of the lead standard.
- Some children's toys and jewelry may contain high levels of lead. In one case, we found a stuffed animal that contained 97ppm lead in the surface coating.

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### **Recommendations: Lead**

Lead-tainted children's products should never end up on store shelves or in the home. The CPSC should continue to vigorously enforce the CPSIA's bans on lead and lead paint in any toys, jewelry or other products for children under 12 years.

## **Toxic Phthalates in Children's Products**

Effective February 10, 2009, Section 108 of the Consumer Product Safety Improvement Act banned six phthalates in children's products.

Phthalates are a family of chemicals, including diethyl phthalate (DEP), diethylhexyl phthalate (DEHP), dibutyl phthalate (DBP), butyl benzyl phthalate

(BBP), diisodecyl phthalate (DIDP), diisononyl phthalate (DINP), di-n-octyl phthalate (DNOP), and many other distinct types. The polyvinyl chloride (PVC) plastic industry uses large amounts of phthalates as additives to improve the flexibility of its products, including home siding, flooring, furniture, food packaging, toys, clothing, car interiors, and medical equipment, including

IV bags. In addition, other manufacturers use phthalates in personal care products such as soap, shampoo, deodorant, hand lotion, nail polish, cosmetics, and perfume, as well as industrial products like solvents, lubricants, glue, paint, sealants, insecticides, detergent, and ink.<sup>21</sup>

Phthalates are pervasive in the environment and in human bodies. In 2000, the Centers for Disease Control (CDC) found high levels of phthalates and their transformation products (known as metabolites) in every one of 289 adult Americans tested, including women of childbearing age.<sup>22</sup> A larger CDC study in 2003 again found high levels of phthalates in almost every person tested.<sup>23</sup>

#### - PHTHALATE EXPOSURE LINKED TO HEALTH EFFECTS -

U.S. EPA studies show the cumulative impact of different phthalates leads to an exponential increase in associated harm. According to data from the U.S. Centers for Disease Control and Prevention (CDC), levels of phthalates found in humans are higher than levels shown to cause adverse health effects. The data also show phthalate levels are highest in children.

Numerous scientists have documented the potential health effects of exposure to phthalates in the womb or at crucial stages of development, including (but not limited to):

- **Reproductive Defects.** Scientists have demonstrated links between exposure to phthalates in the womb with abnormal genital development in baby boys and disruption in sexual development.<sup>24</sup> In October 2005, an independent panel of scientists convened by the National Institute of Environmental Health Sciences and the

National Toxicology Program released its review of one type of phthalate, diethylhexyl phthalate (DEHP). The panel confirmed that DEHP poses a risk to reproductive and developmental health.<sup>25</sup>

- **Premature Delivery.** A study published in November 2003 suggests a link between exposure to phthalates and pre-term birth. The scientists found phthalates and their breakdown products in the blood of newborn infants, with higher levels leading to a higher incidence of premature delivery.<sup>26</sup>

- **Early Onset Puberty.** One study of Puerto Rican girls suggests that phthalates may be playing a role in trends toward earlier sexual maturity.<sup>27</sup> Scientists found that levels of DEHP were seven times higher in girls with premature breast development than levels in normal girls.

- **Lower Sperm Counts.** In 2003, Drs. Susan Duty and Russ Hauser of the Harvard School of Public Health published one of the first studies linking phthalate exposure with harm to human reproductive health.<sup>28</sup> Men who had monobutyl or monobenzyl phthalate in their urine tended to have lower sperm counts, with the highest concentrations leading to the lowest sperm counts.

#### - U.S. FAILS TO TAKE ACTION ON PHTHALATES -

In 1998, the state PIRGs and several other environmental and consumer groups petitioned the CPSC, asking the agency to ban polyvinyl chloride (PVC) plastic in all toys intended for children under the age of five because of the potential health hazards posed by diisononyl phthalates (DINP). While noting its position that “few if any

children are at risk from the chemical,”<sup>29</sup> in December 1998 CPSC asked the toy and baby products industry to remove DINP from soft rattles and teethingers. About 90 percent of manufacturers indicated at that time that they had or would remove DINP from soft rattles and teethingers by early 1999. CPSC staff also asked the industry to find a substitute for phthalates in other products intended for children under three years old that are likely to be mouthed or chewed.<sup>30</sup>

CPSC also convened a Chronic Hazard Advisory Panel to examine the existing scientific data concerning the potential risks of phthalates to humans. In June 2001, the panel concluded that while the majority of children would not be adversely affected by diisononyl phthalate, “there may be a DINP risk for any young children who routinely mouth DINP-plasticized toys for seventy-five minutes per day or more.”<sup>31</sup>

Unfortunately, in February 2003, CPSC denied the state PIRGs’ petition to ban PVC plastic in toys for young children.<sup>32</sup>

#### **- EUROPEAN UNION AND THE STATES LEAD THE WAY -**

Other countries have taken action, however, to protect children’s health. In September 2004, the European Union (EU) agreed to impose wide restrictions on the use of six phthalates in toys and childcare products.<sup>33</sup> The EU banned three phthalates classified as reproductive toxicants - diethylhexyl phthalate (DEHP), butyl benzyl phthalate (BBP), and dibutyl phthalate (DBP) - in all toys and childcare articles. The EU banned three other phthalates - DINP, diisodecyl phthalate (DIDP) and di-n-octyl phthalate (DNOP) - in toys and childcare articles

intended for children under three years of age and that can be put in the mouth.<sup>34</sup>

In 2007, following a campaign by Environment California, the new home of CALPIRG’s environmental work, California enacted legislation banning phthalates in children’s products.<sup>35</sup> In 2008, bills were introduced in eight state legislatures that included bans on phthalates in children’s products; Washington State and Vermont both passed legislation in 2008.

#### **- CONGRESS TAKES ACTION ON PHTHALATES -**

In March 2008, Senator Dianne Feinstein (CA) successfully offered an amendment to the Senate’s Consumer Product Safety Improvement Act that banned phthalates in children’s products.

After a lengthy House/Senate conference, the CPSIA was signed into law with a ban on childcare products and children’s toys containing the phthalates DEHP, DBP, and BBP in concentrations higher than 0.1% per phthalate (1,000 ppm), and on childcare products and children’s toys that can be put in a child’s mouth containing the phthalates DINP, DnOP, and DIDP in concentrations higher than 0.1% per phthalate (1,000 ppm).

The ban on DINP, DnOP and DIDP is in effect pending a Chronic Hazard Advisory Panel’s report on the health effects of the chemicals. The CHAP commenced its consideration of the provisional ban in 2010, and has eighteen months to report its findings and make a recommendation on whether to make the ban permanent. Both bans were effective February 2009. The interim ban will be rescinded only if the CHAP recommends doing so.

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## Findings: Phthalates

This year, we found two children's products that contain phthalates. One baby doll contained 53,000 ppm DIDP and 300,000 ppm DIIP in the baby's face. Another cartoon character backpack contained measured 150,000 ppm Bis(2-ethylhexyl) phthalate on the mouth.

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## Recommendations: Phthalates -

CPSC should vigorously enforce the CPSIA's ban on the use of phthalates in all toys and children's products, and should make the interim ban on DINP, DnOP and DIDP permanent.

## Other Toxic Hazards

### CPSIA LIMITS OTHER TOXIC CHEMICALS IN SURFACE COATING OF CHILDREN'S PRODUCTS AND TOYS

The Consumer Product Safety Improvement Act made most ASTM F963-07 standards mandatory. Included among them is a ban on antimony, arsenic, barium, cadmium, chromium, lead, mercury, or selenium in the surface coating or paint of any children's product or toy in excess of the amounts listed in the table below:

#### Maximum Soluble Migrated Element in ppm (mg/kg) Toy Material

Antimony, (Sb)	60
Arsenic, (As)	25
Barium, (Ba)	1000
Cadmium, (Cd)	75
Chromium, (Cr)	60
Lead, (Pb)	90
Mercury, (Hg)	60
Selenium, (Se)	500

Cadmium (Cd) is a heavy metal used as a stabilizer in PVC and in coatings and pigments in plastic and paint.

Cadmium is classified as a known human carcinogen, associated with lung and prostate cancer. Depending on the level of exposure, cadmium exposure is associated in animal studies with developmental effects, including possible decreases in birth weight, delayed sensory-motor development, hormonal effects, and altered behavior. Cadmium can cause adverse effects on the kidney, lung and intestines.

Exposure to cadmium can result in bone loss and increased blood pressure. Acute toxicity from ingestion of high levels of cadmium can result in abdominal pain, nausea, vomiting and death.

In January, 2010, in response to research finding high levels of cadmium in children's jewelry, the CPSC issued a warning to parents advising them to keep such jewelry away from children. Some large retailers reacted to the announcement and removed the items from their inventories. In 2010, the CPSC has recalled more than 12 million toys and other children's products because of excess levels of cadmium.

In August 2010, the CPSC requested comments in response to a petition filed in May 2010 by Empire State Consumer Project, Sierra Club, Center for Environmental Health, and Rochesterians Against the Misuse of Pesticides. On October 19, 2010, CPSC staff sent letters to the ASTM F15.24 Subcommittee on Children's Jewelry and the ASTM F15.22 Subcommittee on Toy Safety to encourage expedited completion of safety standards that address the potential hazard of cadmium in children's jewelry and some toys to assist in the standards development process (including possible revisions to the ASTM F-963 toy safety standard, which was made a mandatory safety standard pursuant to Section 106 of the Consumer Product Safety Improvement Act of 2008).

Antimony trioxide is classified as a carcinogen in the state of California and has been listed as a possible human carcinogen by the International Agency for Research on Cancer and the European Union. In long-term studies, animals that breathed very low levels of antimony had eye irritation, hair loss, lung damage, and heart problems.

Higher levels of antimony have been shown to cause fertility problems and lung cancer in animals. The ASTM F-963 standard for antimony in the surface coating of a children's product is 60 ppm.

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### **Findings: Other Toxics**

Our laboratory findings showed 120 ppm antimony in the red handle of a baby book, and 1200 ppm antimony in the surface coating of a pair of toy handcuffs.

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### **Recommendations: Other Toxics**

Given the clear adverse health consequences of cadmium exposure, the CPSC should issue clear, meaningful restrictions on cadmium content for all children's products, in both the base of the product as well as in the surface coating, as well as guidance to industry on compliance.

CPSC should vigorously enforce limits on other toxic chemicals restricted by the CPSIA.

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## **Choking Hazards**

### **CPSC BANS SMALL PARTS FOR CHILDREN UNDER AGE 3**

In 1979, CPSC banned the sale of toys containing small parts if they are intended for use by children under the age of three, regardless of age labeling. A small part is defined as anything that fits inside a choke test cylinder, which has an interior diameter of 1.25 inches and a slanted bottom with a depth ranging from 1 to 2.25 inches (Figure A). This cylinder is designed to approximate

the size of a fully expanded throat of a child under three years old. If the toy or any part of the toy - including any parts that separate during "use and abuse" testing - fits inside the test tube, the product is a choking hazard and is banned for children under the age of three. In 1994, the Child Safety Protection Act established a more protective standard for small balls in children's toys.

CPSC uses three factors to determine whether a toy is intended for children under three years old, including the manufacturer's



stated intent, such as the age labeling, the advertising and marketing of the product, and whether the toy is “commonly recognized” as being intended for a child under three years old.<sup>36</sup> Some items commonly recognized for children under three include (but are not limited to) squeeze toys; teething toys; toys or articles that are affixed to a crib, stroller, playpen, or baby carriage; pull and push toys; bathtub, wading pool and sand toys; and stuffed animals.<sup>37</sup>

Some toys and products are exempt from this small parts regulation because they cannot be manufactured in a way that would prevent them from breaking into small parts when subjected to use and abuse testing. These items include (but are not limited to) balloons, articles made of paper, writing materials such as crayons and chalk, modeling clay, and finger paints, watercolors and other paint sets. Children’s clothing and accessories such as shoe lace holders, diaper pins, and barrettes also are exempt because they need to be small to perform their intended purpose.<sup>38</sup>

Pieces of paper, fabric, yarn, fuzz, elastic, and string that fit in the choke test cylinder also are exempt, as they are unlikely to pose a choking hazard.<sup>39</sup>

### LABELS FOR TOYS WITH SMALL PARTS FOR CHILDREN OVER AGE 3

CPSC’s 1979 regulations, however, were not entirely effective; some manufacturers attempted to circumvent the small parts ban by labeling products intended for children under three for “ages three and up.” This allowed parents to misinterpret these labels as recommendations, rather than warnings, and to purchase such toys anyway for children under three. The 1979 regulation also exempted a significant choking hazard,

balloons, from any sort of warnings or regulations. It also became apparent that small balls that passed the small parts test could still pose a choking hazard, as they could completely block a child’s airway.

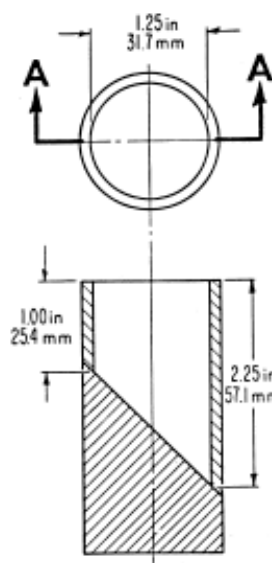


Figure A. Choke Test Cylinder

Throughout the 1980s, consumer groups lobbied Congress and the CPSC to increase the size of the small parts test and to require an explicit choke hazard warning on toys intended for older children, if the toys contained banned small parts. A 1992 campaign led by ConnPIRG and other child safety advocates resulted in a tough choke hazard warning label law that took effect in Connecticut on January 1, 1993. The Connecticut law laid the foundation for a federal standard, and in 1994, Congress passed the Child Safety Protection Act of 1994 (CSPA). President Clinton signed the CSPA into law on June 16, 1994.

### CHARACTERISTICS OF TOYS FOR CHILDREN UNDER THREE

The following are some general characteristics that make toys appealing to children under three.

**Size and Weight:** Small and lightweight, easy to handle.

**Theme:** Represents a common object found around the home, farm, or neighborhood.

**Degree of Realism:** Silly or cute, some realistic details.

**Colors:** Bright, contrasting colors covering large areas of the toy.

**Noisemaking:** Not loud or frightening.

**Action and Movement:** May be silly, should be easy for child to cause movement.

**Type and level of skill:** Lets child begin to learn skills or practice skills such as walking, stacking, and sorting; should be slightly beyond child's capabilities to maintain interest.

*Source: Consumer Product Safety Commission*

### - SMALL PARTS -

The 1994 CSPA requires that toys with small parts intended for children between the ages of three and six years old include the following explicit choke hazard warning:<sup>40</sup>



**WARNING:**

CHOKING HAZARD--Small parts  
Not for children under 3 yrs.

### - SMALL BALLS -

The 1994 CSPA also strengthened the test for small balls from 1.25 inches in diameter to 1.75 inches. Balls with a diameter smaller than 1.75 inches are banned for children under three years old.<sup>41</sup> The law defines a ball as "any spherical, ovoid, or ellipsoidal object that is designed or intended to be thrown, hit, kicked, rolled, dropped, or bounced."<sup>42</sup> According to this definition, toys that are spherical or have spherical parts but are not intended for use as a ball do not have to meet this test.

Round objects are more likely to choke children because they can completely block a child's airway. Any small ball intended for children over the age of three must include the following warning:<sup>43</sup>



**WARNING:**

CHOKING HAZARD--This toy is a small ball.  
Not for children under 3 yrs.

Any toy or game containing a small ball and intended for children between ages three and eight must include the following warning:



**WARNING:**

CHOKING HAZARD--Toy contains a small ball.  
Not for children under 3 yrs.

### - BALLOONS -

Balloons pose a grave choking hazard to children, causing more choking deaths than any other children's product. Almost half (40 percent) of the choking fatalities reported to the CPSC between 1990 and 2009 involved balloons. The 1994 law requires the following choke hazard warning on all balloons:<sup>44</sup>





**WARNING:**

CHOKING HAZARD--Children under 8 yrs. can choke or suffocate on uninflated or broken balloons. Adult supervision required.

Keep uninflated balloons from children. Discard broken balloons at once.

**- MARBLES -**

Any marble intended for children three years of age or older must bear the following cautionary statement on its packaging:<sup>45</sup>



**WARNING:**

CHOKING HAZARD--This toy is a marble. Not for children under 3 yrs.

Any toy or game containing a marble and intended for children between ages three and eight must include the following warning:



**WARNING:**

CHOKING HAZARD--Toy contains a marble. Not for children under 3 yrs.

**- BINS AND VENDING MACHINES -**

Finally, the CSPA requires choke hazard labels on bins and vending machines. If toys or small balls requiring labels are sold in vending machines or unpackaged in bins, these vending machines and bins must display the statutory warnings.<sup>46</sup>

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**Findings: Choking Hazards**

PIRG researchers surveying toy stores in the fall of 2010 identified the following trends:

**- MOST TOYS ARE SAFE AND PROPERLY LABELED -**

Overall, manufacturers and toy retailers are doing a good job of marketing and labeling small balls, balloons, small toys and toys with small parts, ensuring either that the bin in which the toy is sold or the toy packaging is labeled with the required choke hazard warning.

**- SOME TOYS MAY NOT MEET CPSC REQUIREMENTS -**

The law bans small parts in toys for children under three and requires a warning label on toys with small parts for children between the ages of three and six. PIRG researchers, however, still find toys for children under three with small parts and toys with small parts for children under six without the statutory choke hazard warning.

**- NEAR-SMALL PARTS MAY POSE CHOKING HAZARDS -**



In September 2006, CPSC and Playskool voluntarily recalled about 255,000 Team Talkin' Tool Bench toys following the deaths of two young

children. A 19-month-old West Virginia boy and a 2-year-old Texas boy suffocated when oversized, plastic toy nails sold with the tool bench toys became forcefully lodged in their throats.<sup>47</sup>

The toy was labeled for children three and older but did not include a choke hazard warning; the toy nails in question, measuring three inches in height, passed the small parts test. This tragic incident is a reminder that some toys may pose a choking or suffocation hazard even if they pass the small parts test.

In August 2009, the CPSC announced the recall of a variety of Little Tikes Children's Workshop toys totaling over 1.6 million units following an incident in which a little boy was hospitalized after choking on an over-sized plastic nail but made a full recovery.<sup>48</sup>

In preparing this year's report, we were notified by a Washington DC parent of a toy with a peg that a one-year old choked on. The toy - "Baby's First Train" was labeled for ages 1 and up. The part in question extends about 1/8 inch outside the choke tube.

In particular, toys shaped like corks or with spherical, hemispherical, or circular flared ends and attached to a shaft, like the toy nails that caused the two suffocation deaths, could pose particular hazards, even if they pass the small parts test. To "address a potential impaction hazard," the Standard Consumer Safety Specification for Toy Safety lays out requirements for toys with spherical ends that are intended for children under 18 months.<sup>49</sup> Under these specifications, toys of this design weighing less than 1.1 pounds, and intended for children up to 18 months of age, should not be capable of entering and penetrating past the full depth of the cavity of the supplemental test fixture, also used for some rattles and teethingers. A similar standard for toys intended for children over 18 months does not exist.

#### **- BALLOONS ARE MARKETED TO YOUNG CHILDREN -**

The 1994 CSPA requires that all balloons include a choke hazard warning alerting parents to the dangers of balloons and broken balloons for children under eight. Some balloons, however, are marketed for

children under eight. For example, we found balloons marketed specifically for toddlers (e.g., "Baby's First Birthday") and balloons depicting characters appealing to younger children (e.g., "Curious George" or "Bob the Builder"). Manufacturers and retailers should stop producing and selling balloons aimed at children under eight years old.

#### **- MANY TOYS ARE OVER-LABELED -**

Some manufacturers are over-labeling their toys, placing choke hazard warnings on toys without small parts or small balls. This over-labeling dilutes the weight of the warning. In the words of Celestine T. Kiss, an engineering psychologist with the CPSC, speaking to a group of toy manufacturers:

*"It is...important that products not be over labeled. By that we mean, toys that do not need to have a label shouldn't have a label. I know that may sound logical, but we see toys coming in that have the small parts label on it, when there aren't any small parts. This creates a problem for the consumer, because then they don't know when to believe the label or not. Some companies think they are protecting themselves from lawsuits by just slapping the label on all of their toys, but they really are not helping the consumer."<sup>50</sup>*

#### **- RECOMMENDATIONS -**

We call on CPSC to:

- Enlarge the small parts test tube to be more protective of children under three.
- Consider extending the standard for toys with spherical ends to apply to toys intended for children under six years old instead of under 18 months. At minimum, consider special labeling for toys shaped like the toy nails that caused two children to suffocate.

- Change the small-ball rule to include small round or semi-round objects, not just “balls” in the strictest definition.
- Discourage manufacturers from over-labeling their products with choke hazard warnings, as this could reduce the

effectiveness of labels on products that genuinely pose a choking hazard.

## Strangulation Hazards

### Drawstring Clothing

Drawstrings on children’s clothing can lead to deaths and injuries when they catch on such items as playground equipment, bus doors, or cribs.<sup>51</sup> From January 1985 through June 1997, CPSC received reports of 21 deaths and 43 incidents involving drawstrings on children’s upper outerwear.<sup>52</sup> In February 1996, CPSC issued guidelines to help prevent these injuries, which ASTM adopted as a voluntary standard in June 1997.<sup>53</sup> In the period since, CPSC has seen a marked decrease in fatalities and incidents.

CPSC recommends that parents remove drawstrings from all children’s upper outerwear sized 2T to 12 and buy clothing that has alternative closures, such as snaps, buttons, and Velcro.<sup>54</sup>

In May 2006, CPSC sent a letter to manufacturers and retailers of children’s upper outerwear, urging them to make sure that all clothing sold in the U.S. complies with the voluntary safety standard.<sup>55</sup> The letter also stated that CPSC “considers children’s upper outerwear with drawstrings at the hood or neck area to be defective” and subject to recall.

U.S. PIRG’s analysis of the past year’s recalls and other enforcement actions shows that more than 450,000 articles of children’s clothing have been recalled because of this hazard. An August 2009 recall occurred after the death of a three year old child in Fresno, Calif., who was strangled when the drawstring on the hooded sweatshirt that he was wearing became stuck on a play ground set.<sup>56</sup>

## Methodology

**Testing of toys and other children’s products for lead and other metals:** We purchased 98 toys and children’s jewelry from major retailers and dollar stores and used an X-Ray Fluorescence (XRF) analyzer to perform 337 screens for the presence of lead and other metals. We sent these items and another 162 products to STAT Analysis

Corporation in Chicago, a laboratory accredited by the Illinois Environmental Protection Agency in accordance with the National Environmental Laboratory Accreditation Program, for additional testing. STAT Analysis used EPA Method 6020 (Inductively Coupled Plasma-Mass Spectrometry) and EPA Method 3050B (Acid

Digestion of Sediments, Sludges, and Soils) to determine the quantity of lead and other metals regulated by the CPSIA in each item.<sup>57</sup>

**Testing of products for phthalates:** STAT Analysis performed the phthalates testing. STAT Analysis followed standard procedures, using EPA Method 8270C and EPA Method 3580A.<sup>58</sup> The reporting/quantitation limits varied based on the product tested.

**Choking hazards:** We categorized toys as a potential choking hazard if: a) a toy labeled for children under three contains small parts or breaks easily into small parts;<sup>a</sup> b) a toy contains small parts or small balls but is intended for children under three, regardless of age labeling if any; c) a toy contains small parts or small balls, is intended for children over three, but lacks the statutory choke hazard warning; or d) the toy is intended for children under six, lacks the statutory choke hazard warning and appears to fail the “use and abuse” test, breaking easily into small parts that fit in the choke tube, or e) contains a “near small part” that is slightly larger than the choke test cylinder.

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<sup>a</sup> If a toy broke into small parts with little effort or force, we assumed that the toy may not comply with CPSC use and abuse testing procedures.

# Attachment A. 2010 Summary of Toy Hazards and Examples of Potentially Dangerous Toys and Children's Product

## - Potentially Toxic Toys: Lead and Other Toxic Chemicals-

### Standards

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The Consumer Product Safety Improvement Act of 2008 bans lead in toys and children's products on a phase-out schedule outlined below. After the effective dates, these products cannot be manufactured, imported for sale or sold.

- **February 2009:** Toys and children's products containing lead in excess of **600 parts per million (ppm)** became banned hazardous substances.
- **August 2009:** The maximum allowable amount of lead in paint decreased from **600 ppm** to **90 ppm**.
- **August 2009:** Toys and children's products containing lead in excess of **300 parts per million (ppm)** became banned hazardous substances.
- **August 2011:** Toys and children's products containing lead in excess of **100 parts per million (ppm)** become banned hazardous substances.



The CPSIA includes a ban on childcare products and children's toys containing the phthalates DEHP, DBP, and BBP in concentrations higher than 0.1% per phthalate (1,000 ppm), and on childcare products and children's toys that can be put in a child's mouth containing the phthalates DINP, DnOP, and DIDP in concentrations higher than 0.1% per phthalate (1,000 ppm).

The CPSIA made mandatory the previously voluntary ASTM F-963-07 standards, including limits on eight metals in the surface coating of children's products, as outlined in the table below:


**Maximum Soluble Migrated Element in ppm (mg/kg) Toy Material**


Antimony (Sb)	Arsenic (As)	Barium (Ba)	Cadmium (Cd)	Chromium (Cr)	Lead (Pb)	Mercury (Hg)	Selenium (Se)
60	25	1000	75	60	90	60	500

## Examples of Toys and Children's Products Containing Potentially Toxic Lead




<p>Category: Toxic chemicals          Product Name: Princess Expressions Tiara and Jewelry set          Manufacturer: Almar Sales          Retailer: KMart          Item # or SKU: 2457682123          Problem: Lab measured 87 ppm lead in tiara *</p> <p>** While this does NOT violate the CPSIA standard for lead in surface coating, scientists have not identified a "safe" level of lead exposure for children.<sup>59</sup></p>	
<p>Category: Toxic Chemicals          Product Name: Monkey in Banana          Manufacturer: Play Pets          Retailer: Uncle Fun          Item # or SKU: stuffed monkey in banana          Problem: lab test measured 97 ppm lead in the surface of the banana</p>	

## Examples of Toys and Children's Products Containing Phthalates

<p>Category: may contain toxic chemicals          Product Name: baby toys Baby Doll          Manufacturer: unknown          Retailer: Uncle Fun          Item # or SKU: unknown          Problem: measured 53,000 ppm DIDP and 300,000 ppm DIIP (phthalates) in the baby's face</p> <p><i>*these phthalates are only regulated in so-called "mouthing toys"</i></p>	
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<p>Category: toxic phthalates  Product Name: Dora the Explorer backpack  Manufacturer: Global Design Concepts  Retailer: Claire's  Item # or SKU: 6232981295  Problem: lab measured 150,000 ppm Bis(2-ethylhexyl) phthalate (DEHP) on the mouth</p>	
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**Examples of Toys and Children’s Products Containing Potentially Toxic Antimony**

<p>Category: may contain toxic chemicals  Product Name: bright stars travel book  Manufacturer:  Retailer: Toys R Us  Item # or SKU:7445108849  Problem: lab measured 120 ppm antimony in the red handle of the book</p>	
<p>Category: may contain toxic chemicals  Product Name: plastic handcuffs  Manufacturer:  Retailer: Toys R Us  Item # or SKU:7565602150  Problem: lab measured 1200 ppm antimony in the surface coating</p>	
<p>Category: may contain toxic chemicals  Product Name: wild ranger toy gun  Manufacturer: POLYFECT, INC  Retailer: Family Dollar  Item # or SKU:7856511300  Problem: measured 94 ppm antimony in surface coating of the silver part of the gun; 190 ppm antimony on the handle</p>	

**-Potential Choking Hazards -**



## Standards

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Under the Child Safety Protection Act (CSPA) and Consumer Product Safety Commission rules:

- Toys intended for children under 3 are banned if they contain small parts or easily break into pieces that are small parts.
- Toys intended for children between the ages of three and six years old that contain small parts must include an explicit choke hazard warning with precise statutory language.
  - Any small ball or toy that contains a small ball must meet a stricter safety test and include an explicit choke hazard warning.
  - Marbles or toy with marbles must include an explicit choke hazard warning.
  - All balloons must include a warning about the dangers of uninflated or broken balloons to children younger than 8 years of age.

## Examples of Toys that Pose Potential Choking Hazards

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### TOYS THAT CONTAIN NEAR SMALL PARTS -

*Toys intended for children between the ages of three and six years old that contain small parts must include an explicit choke hazard warning with precise statutory language. Any small ball or toy that contains a small ball must meet a stricter safety test and include an explicit choke hazard warning. Any marble must include an explicit choke hazard warning.*

*These products contain toy parts that almost fit in the choke test tube. Although these toys do not violate the letter of the law, these parts could block a child's airway given their shape and size. Children have died on similarly-sized toys that pass the choke tube test.*

**Category:** Near Small Parts

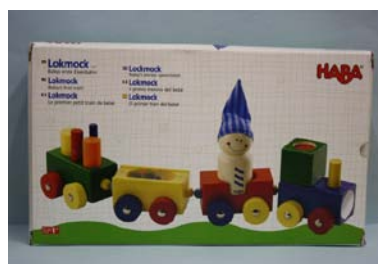
**Product Name:** Lokmock /Baby's first train

**Manufacturer:** Haba

**Retailer:** Amazon.com, Sullivan's Toys

**Item # or SKU:**1197

**Problem:** Contains pegs that are about 1cm longer than the choke tube. Labeled "Age 1+". No choke hazard warning; CSPA does not require a warning because the toys do not fit in the choke test cylinder. U.S. PIRG was alerted to this toy by a consumer who had to perform a Heimlich maneuver on her one-year-old because he swallowed one of the pegs.





**Category:** Near Small Parts

**Product Name:** Let's Get Building! Construction Playset (Handy Manny Big Construction Job)

**Manufacturer:** Fisher Price

**Retailer:** Target

**Item # or SKU:**2708478850

**Problem:** Contains a toy warning cone that is barely larger than the choke tube. Labeled "3+" No choke hazard warning; CSPA does not require a warning because the toys do not fit in the choke test cylinder. Has a warning in small print on the back of the package that "small parts may be generated".



## Attachment B. Toy-Related Deaths, 1990-2009

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total	
<b>Choking/Asphyxiation Deaths</b>																						
<b>Balloons</b>	6	3	6	6	6	8	7	6	4	4	1	4	3	3	1	2	3	4	1	1	79	
<b>Balls</b>	2	2	3	6	4	2	0	3	1	4	2	1	2	5	4	9	4	4	1		59	
<b>Marbles</b>	0	2	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6	
<b>Toy or Toy Part</b>	6	6	1	4	3	1	3	2	3	1	2	4	3	2	2	2	6	2	1		54	
<b>Total</b>	<b>14</b>	<b>13</b>	<b>11</b>	<b>16</b>	<b>13</b>	<b>12</b>	<b>10</b>	<b>11</b>	<b>8</b>	<b>9</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>10</b>	<b>7</b>	<b>13</b>	<b>13</b>	<b>10</b>	<b>3</b>	<b>2</b>	<b>198</b>	
<b>Riding Toys, Scooters</b>	4	8	4	5	4	6	2	0	4	4	8	13	5	0	6	8	11	8	9	7	116	
<b>Toy Chests</b>	4	2	2	1	0	0	0	1	0	1	1	1	0	0	0	1	0	0	1	1	16	
<b>Strangulation/ Suffocation</b>	1	1	3	2	0	1	1	0	0	0	0	1	0	0	2	2	0	0	0	1	15	
<b>Other</b>	0	1	2	1	1	2	0	1	2	2	2	1	0	1	1	2	5	4	6	1	35	
<b>TOTAL TOY DEATHS</b>	<b>23</b>	<b>25</b>	<b>22</b>	<b>25</b>	<b>18</b>	<b>21</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>16</b>	<b>17</b>	<b>25</b>	<b>13</b>	<b>11</b>	<b>16</b>	<b>26</b>	<b>29</b>	<b>22</b>	<b>19</b>	<b>12</b>	<b>380</b>	
<b>% BY CHOKING/ASPXYXIA</b>	<b>61%</b>	<b>52%</b>	<b>50%</b>	<b>64%</b>	<b>72%</b>	<b>57%</b>	<b>77%</b>	<b>85%</b>	<b>57%</b>	<b>56%</b>	<b>35%</b>	<b>36%</b>	<b>62%</b>	<b>91%</b>	<b>44%</b>	<b>50%</b>	<b>45%</b>	<b>45%</b>	<b>16%</b>	<b>17%</b>	<b>52%</b>	

Source: U.S. PIRG analysis of annual CPSC Reports on "Toy-Related Deaths and Injuries". Previous years updated by new information in 2009 report released November 18, 2010

- <sup>1</sup> U.S. National Cancer Institute, President's Cancer Panel, *Reducing Environmental Cancer Risk: What We Can Do Now*, April 2010.
- <sup>2</sup> U.S. Centers for Disease Control and Prevention, *Fourth National Study on Human Exposure to Environmental Chemicals*, December 2009; Environmental Working Group, *Body Burden: The Pollution in People*, January 2003.
- <sup>3</sup> U.S. Environmental Protection Agency, *What is the TSCA Chemical Substance Inventory?*, (factsheet), 19 August 2009; available at [www.epa.gov/opptintr/newchems/pubs/invntory.htm](http://www.epa.gov/opptintr/newchems/pubs/invntory.htm).
- <sup>4</sup> U.S. Environmental Protection Agency, *Chemical Hazard Data Availability Study*, 1998. Major chemicals are defined as those produced or imported in amounts exceeding one million pounds per year.
- <sup>5</sup> The Consumer Product Safety Improvement Act of 2008, HR 4040, became Public Law 110-314 on August 14<sup>th</sup> when it was signed by the President.
- <sup>6</sup> 16 CFR 1500.18(a)(17)
- <sup>7</sup> U.S. Consumer Product Safety Commission press releases January 2009- November 10, 2009, <http://www.cpsc.gov/cpsc/pub/prerel/prerel.html>
- <sup>8</sup> U.S. CPSC "Toy Related Deaths And Injuries Calendar Year 2009" November 18, 2010
- <sup>9</sup> ATSDR, Case Studies in Environmental Medicine: Lead Toxicity, October 2000; American Academy of Pediatrics, "Lead Exposure in Children: Prevention, Detection and Management," *Pediatrics*, 1036-1048 (October 2005).
- <sup>10</sup> Centers for Disease Control and Prevention, Preventing Lead Poisoning in Young Children, August 2005.
- <sup>11</sup> Richard L. Canfield, Ph.D., Charles R. Henderson, Jr., M.A., Deborah A. Cory-Slechta, Ph.D., Christopher Cox, Ph.D., Todd A. Jusko, B.S., and Bruce P. Lanphear, M.D., M.P.H., "Intellectual Impairment in Children with Blood Lead Concentrations below 10 µg per Deciliter," *New England Journal of Medicine*, April 17, 2003, Volume 348:1517-1526.
- <sup>12</sup> CPSC, "Reebok Recalls Bracelet Linked to Child's Lead Poisoning Death," press release, March 23, 2006. Accessed November 7, 2010 at <http://www.cpsc.gov/cpsc/pub/prerel/prhtml06/06119.html>.
- <sup>13</sup> Centers for Disease Control, "Death of a Child After Ingestion of a Metallic Charm --- Minnesota, 2006," *Morbidity and Mortality Weekly Report*, March 23, 2006.
- <sup>14</sup> CPSC release of June 13, 2007, "RC2 Corp. Recalls Various Thomas & Friends™ Wooden Railway Toys Due to Lead Poisoning Hazard," accessed on November 7, 2010 at <http://www.cpsc.gov/CPSC/PUB/PREREL/prhtml07/07212.html>.
- <sup>15</sup> CPSC release of August 2, 2007, "Fisher-Price Recalls Licensed Character Toys Due To Lead Poisoning Hazard," (<http://www.cpsc.gov/cpsc/pub/prerel/prhtml07/07257.html> last accessed on November 7, 2010).
- <sup>16</sup> CPSC release, August 22, 2007, "Martin Designs Inc. Recalls SpongeBob SquarePants Character Address Books and Journals Due to Violation of Lead Paint Standard," Accessed November 7, 2010 at <http://www.cpsc.gov/cpsc/pub/prerel/prhtml07/07283.html>.
- <sup>17</sup> U.S. PIRG analysis of CPSC recall announcements.
- <sup>18</sup> 16 CFR 1303.
- <sup>19</sup> 15 U.S.C. 1261(f)(1)
- <sup>20</sup> 15 U.S.C. 1261(q)(1)
- <sup>21</sup> Phthalate Esters Panel of the American Chemistry Council, *What are Phthalates?*, downloaded from [www.phthalates.org](http://www.phthalates.org) on 14 April 2004; Catherine Dorey, Greenpeace, *Chemical Legacy: Contamination of the Child*, October 2003.
- <sup>22</sup> BC Blount et al, "Levels of Seven Urinary Phthalate Metabolites in a Human Reference Population," *Environmental Health Perspectives* 108: 979-982, 2000.
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- <sup>24</sup> Shanna H. Swan et al, "Decrease in anogenital distance among male infants with prenatal phthalate exposure," *Environmental Health Perspectives* 113: 1056-1061, August 2005; LE Gray et al, "Perinatal Exposure to the Phthalates DEHP, BBP, and DINP, but not DEP, DMP, or DOTP, Alters Sexual Differentiation of the Male Rat," *Toxicological Science* 58: 350-365, December 2000; Vickie Wilson et al, "Phthalate Ester-Induced Gubernacular Lesions are Associated with Reduced Insl3 Gene Expression in the Fetal Rat Testis," *Toxicology Letters* 146: 207-215, 2 February

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- 2004; JS Fisher et al, "Human 'Testicular Dysgenesis Syndrome': A Possible Model Using *in-utero* Exposure of the Rat to Dibutyl Phthalate," *Human Reproduction* 18: 1383-1394, 2003.
- <sup>25</sup> NIEHS, "Independent Panel to Evaluate a Chemical Used in Some Plastics (Di (2-ethylhexyl) phthalate) for Hazards to Human Development or Reproduction," press release, October 5, 2005.
- <sup>26</sup> G Latini et al, "In-Utero Exposure to Di-(2-ethylhexyl)-phthalate and Human Pregnancy Duration," *Environmental Health Perspectives* 111:1783-1785, 2003.
- <sup>27</sup> I. Colón, D Caro, CJ Bourdony and O Rosario, "Identification of Phthalate Esters in the Serum of Young Puerto Rican Girls with Premature Breast Development," *Environmental Health Perspectives* 108: 895-900, 2000.
- <sup>28</sup> SM Duty et al, "Phthalate Exposure and Human Semen Parameters," *Epidemiology* 14: 269-277, 2003; SM Duty et al, "The Relationship Between Environmental Exposures to Phthalates and DNA Damage in Human Sperm Using the Neutral Comet Assay," *Environmental Health Perspectives* 111: 1164-1169, 2003.
- <sup>29</sup> CPSC, "CPSC Releases Study on Phthalates in Teethers, Rattles and Other Children's Products," press release, December 2, 1998, accessed November 7, 2010 at [www.cpsc.gov/CPSCPUB/PREREL/PRHTML99/99031.html](http://www.cpsc.gov/CPSCPUB/PREREL/PRHTML99/99031.html).
- <sup>30</sup> CPSC, "CPSC Releases Study on Phthalates in Teethers, Rattles and Other Children's Products," press release, December 2, 1998, accessed November 7, 2010 at [www.cpsc.gov/CPSCPUB/PREREL/PRHTML99/99031.html](http://www.cpsc.gov/CPSCPUB/PREREL/PRHTML99/99031.html).
- <sup>31</sup> Report to the U.S. Consumer Product Safety Commission by the Chronic Hazard Advisory Panel on Diisononyl Phthalate, June 2001. Accessed November 7, 2010 at <http://www.cpsc.gov/LIBRARY/FOIA/Foia01/os/dinp.pdf>.
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- <sup>34</sup> Bette Hileman, "EU Bans Three Phthalates from Toys, Restricts Three More," *Chemical and Engineering News*, July 11, 2005.
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- <sup>36</sup> 16 CFR 1501.2(b)
- <sup>37</sup> 16 CFR 1501.2(a)
- <sup>38</sup> 16 CFR 1501.3
- <sup>39</sup> 16 CFR 1501.4(b)(2)
- <sup>40</sup> 16 CFR 1500.19
- <sup>41</sup> 16 CFR 1500.18(a)(17)
- <sup>42</sup> 16 CFR 1500.18(a)(17)
- <sup>43</sup> 16 CFR 1500.19(b)(3)
- <sup>44</sup> 16 CFR 1500.19(a)(2)
- <sup>45</sup> 16 CFR 1500.19(a)(4)
- <sup>46</sup> 16 CFR 1500.19(a)(8)
- <sup>47</sup> CPSC, "Playskool Voluntarily Recalls Toy Tool Benches after the Death of Two Toddlers," press release, September 22, 2006.
- <sup>48</sup> CPSC, "Little Tikes™ Recalls Children's Toy Workshop Sets and Trucks Due to Choking Hazard," press release, August 13, 2009. <http://www.cpsc.gov/CPSCPUB/PREREL/prhtml09/09304.html>
- <sup>49</sup> ASTM International, "Standard Consumer Safety Specification for Toy Safety," F963.4.33.
- <sup>50</sup> Statement of Celestine T. Kiss, Engineering Psychologist, CPSC, at the CPSC Premium Toys Seminar, Bethesda, MD, January 9, 2001. Accessed November 7, 2010 at <http://www.cpsc.gov/businfo/celstalk.pdf>.
- <sup>51</sup> CPSC, "Guidelines for Drawstrings on Children's Upper Outerwear," accessed November 7, 2010 at <http://www.cpsc.gov/CPSCPUB/PUBS/208.pdf>.
- <sup>52</sup> CPSC, Letter to Manufacturers, Importers and Retailers of Children's Upper Outerwear, , May 19, 2006, accessed November 7, 2010 at <http://www.cpsc.gov/BUSINFO/Drawstring.pdf>.
- <sup>53</sup> ASTM F1816-97, "Standard Safety Specification for Drawstrings on Children's Upper Outerwear."
- <sup>54</sup> CPSC, "Guidelines for Drawstrings on Children's Upper Outerwear," accessed October 31, 2006 at <http://www.cpsc.gov/CPSCPUB/PUBS/208.pdf>.
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<sup>56</sup> CPSC Press Release #09-129, August 13, 2009. Strangulation Death of a Child Prompts Hill Sportswear To Recall Hooded Sweatshirts with Drawstrings

<sup>57</sup> A technical description of EPA Test Method 6020 is available at U.S. EPA, “Inductively Coupled Plasma-Mass Spectrometry,” accessed November 7, 2010 at

[http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/6\\_series.htm](http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/6_series.htm) . A technical description of EPA Test Method 3050B is available at U.S. EPA, “Acid Digestion of Sediments, Sludges, and Soils,” accessed November 3, 2006 at <http://www.epa.gov/epaoswer/hazwaste/test/pdfs/3050b.pdf>.

<sup>58</sup> A technical description of EPA Test Method 8270D (which has replaced test 8270C) is available at U.S. EPA, “Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, accessed November 7, 2010 at

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<http://www.epa.gov/osw/hazard/testmethods/sw846/pdfs/3580a.pdf> .

<sup>59</sup> Centers for Disease Control and Prevention, Preventing Lead Poisoning in Young Children, August 2005.