



March 24, 2017

**Comments from the Natural Resources Defense Council
Re: Estimated Phthalate Exposure and Risk to Women of Reproductive Age
as Assessed Using 2013/2014 NHANES Biomonitoring Data**

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The Natural Resources Defense Council (NRDC) is a national, non-profit environmental organization of lawyers, scientists, and other professionals. NRDC presents these comments on behalf of our 1.3 million members and online activists. NRDC does not have any financial interest in the topic of these comments.

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NRDC has previously submitted comments relevant to this issue, including the following:

Comments from NRDC on the Proposed Rule: Prohibition of Children's Toys and Child Care Articles Containing Specified Phthalates. April, 2015. Document ID: CPSC-2014-0033-0089. <https://www.regulations.gov/document?D=CPSC-2014-0033-0089>

Comments from NRDC, Breast Cancer Fund, Greenpeace, TEDX. Estimated Phthalate Exposure and Risk to Pregnant Women and Women of Reproductive Age as Assessed Using Four NHANES Biomonitoring Data Sets. August, 2015. Document ID: CPSC-2014-0033-0109. <https://www.regulations.gov/document?D=CPSC-2014-0033-0109>

Comments from NRDC on the Proposed Rule on the Prohibition of Children's Toys and Child Care Articles Containing Specified Phthalates: Determinations Regarding Certain Plastics. October, 2016. Document ID: CPSC-2016-0017-0012. <https://www.regulations.gov/document?D=CPSC-2016-0017-0012>

Phthalates are a family of chemicals used mostly as plasticizers in a large number of consumer products and food contact applications. Many members of the phthalate family are associated with human health effects and have been shown to cause multiple health problems in laboratory animals.

Due to the widespread human exposure and concerns about public safety, especially for pre-natal and early life exposures, both European and American governments banned the use of certain phthalates in toys and child care products in the years 2006 and 2008, respectively.

Background:

The Consumer Product Safety Improvement Act of 2008 (CPSIA) required the Commission to appoint a Chronic Hazard Advisory Panel (CHAP) to study the effects on children's health of phthalates and phthalate alternatives in children's toys and child care articles. The CHAP assessed human exposure to phthalates, in part, through human biomonitoring analysis. Among the data sources the CHAP considered were data from the National Human Health and Nutrition Survey (NHANES). Specifically, the CHAP used biomonitoring data from the 2005/2006 NHANES data set.

Based on these data, on December 30, 2014, the Commission issued a notice of proposed rulemaking (NPR) that would prohibit children's toys and child care articles containing specified phthalates. Specifically CPSC proposed the following:

- Make permanent the interim ban on DINP.
- Permanently ban four additional phthalates, DIBP, DPENP, DHEXP, DCHP;
- Impose an interim ban on another phthalate, DIOP.

In April 2015 NRDC submitted comments to the docket on the proposed rule, supporting the rule and asking CPSC, in order to protect human health, to ban other phthalates for which the CHAP identified health concerns but did not recommend a ban (DIDP, DNOP) and to permanently ban DIOP, for which the CHAP had recommended an interim ban (Document ID: CPSC-2014-0033-0089).

In June 2015, CPSC staff released a document, “Estimated Phthalate Exposure and Risk to Pregnant Women and Women of Reproductive Age as Assessed Using Four NHANES Biomonitoring Data Sets (2005/2006, 2007/2008, 2009/2010, 2011/2012).” The June 2015 analysis reviewed the 2005/2006 NHANES data set to replicate the CHAP’s methodology and reviewed the subsequent NHANES data sets from 2007/2008, 2009/2010, 2011/2012). In August 2015, NRDC submitted comments to the docket supporting the CPSC staff analysis, and rebutting arguments made by ExxonMobil at that time (Document ID: CPSC-2014-0033-0109). One of ExxonMobil’s criticisms at that time was that the CHAP report should be disregarded because the biomonitoring data is now outdated. This was a false and flawed argument at the time, and continues to be so – industry is simply forcing delays and then using the excuse of the delays to call for data updates ‘*ad nauseum*’ while unsafe exposures are allowed to continue.

The most recent staff analysis (CPSC 2017) applies methods and approaches developed by the CHAP report, with updated NHANES data from 2013/2014 (CPSC 2017).¹ The CPSC is once again requesting public comment on this recent report.

The CHAP report issued a strong consensus position supporting CPSC’s use of the NHANES biomonitoring dataset, concluding that “biomonitoring and toxicology data provide the strongest basis for a mixture of risk assessment...”² NRDC believes that the updated analysis and new NHANES data continue to support the need for the CPSC proposed bans, and in addition supports NRDC’s call for the CPSC to extend the ban to include DNOP, DIDP, and DIOP.

Detailed comments

Support for CPSC proposed ban even stronger with new NHANES data

CPSC report confirmed unsafe phthalate cumulative exposure to both DEHP and DINP

The CPSC staff’s updated risk analysis reports that women of reproductive age (ages 15-45 years) continue to have unsafe exposure to phthalates, particularly when considering both DEHP and DINP together. Considering the cumulative impact of phthalates as a group is consistent with the recommendations of the National Academies report on Phthalates and Cumulative Risk Assessment (NAS 2008) and the 2009 Science and Decisions report that followed.³ In Science and Decisions, the NAS underscored the key recommendations of the 2008 Phthalates report and added, “There is a need for cumulative risk assessments (CRA)...assessments that include combined risks posed by aggregate

¹ CPSC 2017. Estimated Phthalate Exposure and Risk to Women of Reproductive Age as Assessed Using 2013/2014 NHANES Biomonitoring Data Federal Register / Vol. 82, No. 34 / Wednesday, February 22, 2017. Document ID: CPSC-2014-0033-0134

² Liroy PJ, Hauser R, Gennings C, Koch HM, Mirkes PE, Schwetz BA, Kortenkamp A. Assessment of phthalates/phthalate alternatives in children’s toys and childcare articles: Review of the report including conclusions and recommendation of the Chronic Hazard Advisory Panel of the Consumer Product Safety Commission. J Expo Sci Environ Epidemiol. 2015 Jul-Aug;25(4):343-53.

³ National Research Council. Committee on the Health Risks of Phthalates. Phthalates and Cumulative Risk Assessment: The Tasks Ahead. National Academies Press: Washington D.C., 2008. Page 11

exposure to multiple agents or stressors; aggregate exposure includes all routes, pathways, and sources of exposure to a given agent or stressor.”⁴

The CPSC staff report confirmed that there are continuing unsafe exposures to DEHP and DINP, supporting the CPSC’s proposal to make the interim DINP ban permanent in light of the cumulative exposures to the two chemicals.

The most recent CDC data show levels of DEHP are disproportionately high in non-whites and in young children.

The CHAP report found that DEHP was the most potent antiandrogenic phthalate, based on reproductive tract malformations, delayed vaginal opening, and decreased spermatozoa.⁵ So, it is especially troubling that while levels in the bodies of Americans generally have declined, the levels in non-white groups are still much higher than whites, and levels in young children and reproductive-aged teen-agers are almost 2-fold higher than adults.

For example, the metabolite MEHHP (creatinine corrected) for the most recent years, 2011-2012, at the 95th percentile report the following levels: Asians 57 µg /g; Mexican Americans, 50 µg /g; Hispanics, 49 µg g/g; Blacks 46 µg g/g; Whites 33 µg g/g.⁶ Young children (6-11 yrs, 58 µg g/g) and reproductive aged teen-agers (12-19 yrs, 54 µg g/g) are much higher than adults (over 20 yrs, 32 µg g/g).

This disproportionate burden of exposure, and consequent risk, to non-white populations and to children and reproductive-aged youth, of this most toxic of phthalates, represents a challenge and an obligation to CPSC. The Commission must make the ban on DINP permanent given the cumulative nature of DEHP and DINP exposures.

Levels of some phthalates that the CHAP recommended a ban on are going up, particularly in children, reproductive aged women, and non-white populations (DIBP, DINP)

Zota et al (2014) demonstrated that metabolites of DINP and DIBP have increased 149% and 206% respectively between 2001-2010 (these data are adjusted to account for changes in demographics over that ten year time span, increasing confidence in the results).⁷ This is also reflected in the most recent NHANES report that shows levels of DIBP are going up in all Americans (data from 2001 to 2010), including in children and reproductive-aged women (NHANES 2017, p. 384).⁸

⁴ National Research Council of the National Academies. Board on Environmental Studies and Toxicology. Board on Environmental Studies and Toxicology. Committee on Improving Risk Analysis Approaches by the U.S. EPA. Science and Decisions: Advancing Risk Assessment. Washington D.C.: National Academies Press, 2009

⁵ See CHAP report, Table 2-1 Summary of NOAELs for developmental endpoints affecting male reproductive developments.

⁶ NHANES 4th Report. Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (creatinine corrected) (2011 - 2012). Page 411

⁷ Zota AR, Calafat AM, Woodruff TJ. Temporal trends in phthalate exposures: findings from the National Health and Nutrition Examination Survey, 2001-2010. Environ Health Perspect. 2014 Mar;122(3):235-41.

⁸ Fourth National Report on Human Exposure to Environmental Chemicals, Updated Tables, January 2017 Volume One Page 384-385. Urinary Mono-isobutyl phthalate (MiBP) (2001 – 2010)

NHANES data show that total DIBP contamination in people's bodies has more than doubled from 2001 to 2012 (from 12 to 27 µg/g creatinine) in the 95th percentile of the total population.⁹ Levels in women of reproductive age also doubled, at about the same levels as the total population. Levels in children (aged 6-11) are higher than women and all other age groups, doubling from 24 to 46 µg /g over the same time period, while the levels in teenagers and adults is much lower, 25 µg/g. Levels of DIBP in non-white Americans has risen higher than whites over the last ten years (95th percentile): levels in whites have more than doubled from 11 to 26 µg /g; levels in Mexican Americans have more than doubled 16 to 33 µg /g; levels in blacks have nearly doubled from 16 to 31 µg /g. These trends may reflect the expanding use of DIBP as a substitute for DBP in some products.¹⁰

The CHAP (2015) recommended that DIBP be banned, and the CPSC (2015) proposed such a ban. Now, CPSC must finalize its proposal to ban DIBP, to protect vulnerable populations including children, women of reproductive age, and particularly women of color.

The NHANES report for DINP (see MCOP metabolite) at the 95th percentile has risen for all race/ethnic populations and age groups.¹¹ Levels are highest in whites (203 µg /g creatinine), followed by Hispanics (163 µg /g), blacks (154 µg /g), Mexican Americans (136 µg /g), and Asians (121 µg /g).

The CHAP (2015) recommended that DINP be banned due to its antiandrogenic effects, and the CPSC (2015) proposed to make the interim ban permanent. The CHAP wrote that, "DINP had the maximum potential of exposure for infants, toddlers, and older children (Figure 2.2). DINP exposures were primarily from food but also from mouthing teethingers and toys, and from dermal contact with child care articles and home furnishings (Figure 2.1)" indicating that CPSC regulatory actions will be important for protecting these vulnerable age groups (CHAP Section 2.6.8).

Biomonitoring of metabolites for long-chain phthalates may underestimate exposure (DINP, DIDP)

The NHANES data for DINP and DIDP is likely to underestimate total exposure because it relies on hydrolytic monoesters as sole biomarkers of exposure, which for the longer-chained phthalates such as DINP and DIDP, represent less than 10% of the total urinary metabolites excreted, according to a study by EPA scientists.¹² This adds weight to the CHAP's recommendations, and CPSC should finalize its proposal to protect public health. Note that this may not be the case for shorter chained phthalates, such as DEP, DBP, DIBP, and BBP, for which approximately 70-80% of the oral dose is excreted to the urine as a simple monoester metabolite, making it much more directly representative.¹³

⁹ Fourth NHANES report. Pages 387-389. Urinary Mono-isobutyl phthalate (MiBP) (creatinine corrected)

¹⁰ Johns LE, Cooper GS, Galizia A, Meeker JD. Exposure Assessment Issues in Epidemiology Studies of Phthalates. *Environment international*. 2015;85:27-39. doi:10.1016/j.envint.2015.08.005.

¹¹ Fourth NHANES report. Page 434-435. Urinary Mono-(carboxyooctyl) phthalate (MCOP) (creatinine corrected) (Page 434, 2005-2010)(Page 435, 2011 - 2012)

¹² Johns LE, Cooper GS, Galizia A, Meeker JD. Exposure Assessment Issues in Epidemiology Studies of Phthalates. *Environment international*. 2015;85:27-39.

¹³ Johns LE, Cooper GS, Galizia A, Meeker JD. Exposure Assessment Issues in Epidemiology Studies of Phthalates. *Environment international*. 2015;85:27-39.

Increasing biomonitoring levels of unrestricted phthalates

CPSC Staff report didn't include new elevated DNOP exposures – highest in children and Asian populations

The most recent NHANES data indicate that DNOP levels in people have also risen significantly. When the CHAP report was issued, DNOP was already being detected in populations of concern (CHAP report, Table 2.11). The levels in human body tissues have been rising ever since. The levels for the total population from 2001 to 2010 rose over that time: Total population from 11 to 19 µg /g (creatinine adjusted MCP levels), and are highest in young children 6-11 years (23 µg /g) and reproductive aged youth 12-19 years (21 µg /g). The most recent data (2011-2012) show that levels have continued to rise: Total population levels have almost doubled to 37 µg /g; children 6-11 yrs, 28 µg /g; levels more than doubled in youth 12-19 yrs, to 46 µg /g. Across race/ethnicity populations, Asians are highest (39 µg /g), followed by whites (37 µg /g), Hispanics (35 µg /g), Mexican Americans (24 µg /g), and blacks (23 µg /g).

DNOP was subject to an interim ban. Its toxicity is unknown since it is poorly characterized and not well tested. The CHAP dropped it from consideration in the cumulative risk assessment because its exposure estimates at the time were considered low relative to other phthalates (CHAP Section 2.7.2.1). However, the new NHANES data demonstrate that its levels are steadily increasing, especially in Asian populations and children. The CPSC staff report did not include the risk contribution from DNOP, suggesting that the report may underestimate total phthalate exposures and consequent health risks. This evidence supports NRDC's call for making the interim ban on DNOP permanent, and the CPSC should do so in its final rule.

DINCH™/DINX now showing up in people's bodies – highest in young children

New NHANES data for 2011-2012 show DINCH™/DINX levels in all populations, and highest in young children.^{14 15} Unfortunately, at the time of the CHAP report, there were no public toxicity data on most of the phthalate substitutes, including DINX, although the chemical was already known to be in widespread use in toys and childcare products (CHAP Sections 4.1.1 and 5.5.5). The CHAP authors concluded the following regarding the toxicity of DINX: "No published studies exist. The available summaries of unpublished studies are brief and generally insufficient with respect to information on experimental design and results, particularly quantitative data and dose-response relationships. While DINX is entering the market as a component of consumer products such as children's articles, the insufficiency of these study summaries preclude independent evaluation of the results and reliable identification of adverse effect levels. Systemic results that are presented, however, support the conclusion that DINX increases liver weight (two studies), thyroid weight (four studies), GGT (three studies), epithelial cells in the urine (three studies), and follicular hyperplasia (two studies)." (CHAP Section 5.5.5.3.2).

The new CPSC staff report fails to include these new NHANES data in its update, despite the CHAP noting that DINX was present at detectable levels in about one-third of the toys and child care articles tested by

¹⁴ DINCH is a registered trademark of BASF, and DINX is the generic chemical name.

¹⁵ Fourth NHANES Report. Page 453. Urinary Cyclohexane-1,2-dicarboxylic acid-mono(hydroxy-isononyl) ester (MHNCH) (creatinine corrected) (2011 - 2012) Metabolite of Di(isononyl) cyclohexane-1,2-dicarboxylate (DINCH)

the CPSC (CHAP Section 5.5.5.4.1; Dreyfus 2010).¹⁶ Thus, the staff report underestimates total phthalate exposure and risk, particularly for vulnerable populations such as young children.

The data are insufficient and therefore underestimate exposure

The CPSC staff report (CPSC 2017) notes that it finds the 2013/2014 NHANES data insufficient to support statistical estimates. The insufficiency of the data means that the data biases to the median – that is, it is less likely to detect the higher exposed individuals (the tails of the curve). This means that the problem of highly exposed women of reproductive age is likely even *worse* than the data indicate; the CPSC staff should make this clear in the paper, instead of leaving the reader with the false impression that the data is simply uninformative or unreliable. This also means that the data supports the CHAP’s recommendations, and the CPSC should finalize its proposed rule.

DEHP, DBP, and BBP high in house dust, supporting the need for a consumer product ban

Despite DEHP, DBP, and BBP all being banned by the CPSC in children’s products, they are still found at extremely high levels in house dust, thus exposing all family members including adults, elders, women of reproductive age, and children. For DEHP, the average levels in dust exceeded EPA soil screening levels, for both cancer and non-cancer effects!¹⁷ And, DEHP was found in 100 percent of house dust samples.¹⁸ These data show that consumer products and residential building materials are still a very significant source of household contamination for these phthalates, and that enforced bans for other phthalates will contribute to reducing exposures to vulnerable populations, including women of reproductive age. This continues to form the backdrop of exposures against which exposures to the phthalates that the CHAP recommended a ban on must be considered because of the cumulative effects of such exposure.

Too many data gaps and unknowns – need regulatory actions to ensure health protections

While some may argue that the contribution from children’s toys, consumer products, etc. is insignificant, this is not at all true. In fact, all exposure pathways matter – the relative influence is different for different phthalates, but the unknowns are too great to say with confidence that any pathway is insignificant, particularly for highly exposed and vulnerable populations, for some of the reasons described below. We also note that Congress required the CPSC and the CHAP to focus on children’s toys and to consider cumulative exposures. 15 U.S.C. § 2057c(b)(2)(B).

¹⁶ Dreyfus, M., 2010. Phthalates and Phthalate Substitutes in Children’s Toys. U.S. Consumer Product Safety Commission, Bethesda, MD. March 2010. <http://www.cpsc.gov/PageFiles/126545/phthallab.pdf>

¹⁷ Mitro SD, Dodson RE, Singla V, Adamkiewicz G, Elmi AF, Tilly MK, Zota AR. Consumer Product Chemicals in Indoor Dust: A Quantitative Meta-analysis of U.S. Studies. *Environ Sci Technol*. 2016 Oct 4;50(19):10661-10672. Correction published in *Environ Sci Technol*. 2016 Dec 20;50(24):13611.

¹⁸ Mitro SD, Dodson RE, Singla V, Adamkiewicz G, Elmi AF, Tilly MK, Zota AR. Consumer Product Chemicals in Indoor Dust: A Quantitative Meta-analysis of U.S. Studies. *Environ Sci Technol*. 2016 Oct 4;50(19):10661-10672. Correction published in *Environ Sci Technol*. 2016 Dec 20;50(24):13611.

Response to industry

A report sponsored by the American Chemistry Council (ACC), the trade association for phthalates manufacturers, was submitted by ACC on September 9, 2014 to the CPSC.¹⁹ The ACC-ToxStrategies report relies on one person, Kathryn Clark, to review and critique the exposure section of the CHAP report. Dr. Clark concludes that, “In general, the approach employed [in the CHAP report] was sound and included comparisons of human exposure to phthalate esters from biomonitoring data with exposures estimated from a range of sources including consumer products, diet, and environmental media...”.²⁰ Clark further writes that, “I am in agreement with the methodology used to calculate exposure from the [human biomonitoring data] data.”²¹ Clark’s review raises some minor suggestions and recommendations to improve the presentation and communication of information in the CHAP report, but *nothing that would alter the report conclusions*. Below we address the main points of the ACC-ToxStrategies report relevant to exposure assessment and NHANES data.

Clark notes that the CHAP recommendations to the CPSC focus on children’s toys and child care products, whereas the population of greatest concern is pregnant women, fetuses, and neonates.²² In fact, the CHAP report did include recommendations to other regulatory agencies, primarily FDA regarding packaging and additives that contaminate food with phthalates.²³ NRDC agrees that regulations that target infant and childhood exposures are necessary but not sufficient. However, the ACC-ToxStrategies report is simply wrong to suggest that CPSC actions as recommended by the CHAP report will not have a very important impact on protecting all populations, including the most vulnerable biological windows of early life development. For example, pregnant women, and by extension fetuses, and neonates can be exposed to very high levels of phthalates in household dust.²⁴ Numerous products can contribute to phthalates in house dust, including children’s toys and child care products.

The ACC-ToxStrategies review by Clark suggests that the basis is not clear for the CHAP report recommendations to ban DINP in toys and child care articles, given that children’s toys and child care articles represent less than 0.1% of total exposure of DINP to pregnant women.²⁵ Exxon Mobil, not coincidentally, has made the same argument as the ACC-ToxStrategies report that DINP does not significantly contribute to the cumulative risk, so banning it would be “arbitrary and capricious.”²⁶ NRDC strongly disagrees.²⁷ DINP’s market share, and therefore contribution to unsafe phthalate exposures is steadily increasing. In 2012, the European Chemical Agency reported a steady increase in the global

¹⁹ ACC-ToxStrategies Independent Expert Peer Review of the Final CHAP Report on Phthalates and Phthalate Alternatives. Prepared for the American Chemistry Council. September 7, 2014 https://www.cpsc.gov/s3fs-public/2014-09-09_ACC_Letter_to_CPSC_Dr_Danello.pdf

²⁰ ACC-ToxStrategies report, page 53.

²¹ ACC-ToxStrategies report, page 54.

²² ACC-ToxStrategies report, page 53.

²³ CPSC, 2014. Chronic Hazard Advisory Panel on Phthalates and Phthalate Alternatives. U.S. Consumer Product Safety Commission, Bethesda MD.

²⁴ Mitro SD, Dodson RE, Singla V, Adamkiewicz G, Elmi AF, Tilly MK, Zota AR. Consumer Product Chemicals in Indoor Dust: A Quantitative Meta-analysis of U.S. Studies. *Environ Sci Technol*. 2016 Oct 4;50(19):10661-10672. Correction published in *Environ Sci Technol*. 2016 Dec 20;50(24):13611.

²⁵ ACC-ToxStrategies report, page 53.

²⁶ CSPC log of meeting with ExxonMobil and Latham & Watkins. Meeting date, July 24, 2015.

<https://www.cpsc.gov/Global/Newsroom/FOIA/Meeting20Logs/2015/ExxonMobileMeetingLogJuly2715.pdf>

²⁷ see NRDC comment to CPSC, August 2015. CPSC 2014-0033-0109

market for DINP.²⁸ According to the European Chemicals Agency (ECHA) 2013 risk assessment of DINP and DIDP, “[t]he three phthalates DINP, DIDP and DPHP account for the majority of the C9/C10 phthalates both at global and at an EU level,” and “the consumption of DINP, DIDP and DPHP (di-2-propylheptyl phthalate), has increased from representing about 50% of total phthalate sales in Europe in 2001 to approximately 83% of the total sales in 2010.”²⁹ As phthalates like DINP replace DEHP their contribution to the overall exposure and hazard will increase. Therefore the science and market trends support CPSC’s proposed rule.

In summary, industry continues to argue that NHANES is an aggregate snapshot of exposure from all sources and that children’s toys are only a small part of this snapshot. However, that does not mean that CPSC actions on toys aren’t significant. In fact, governments routinely act on small increments of a problem, instead of tackling the entirety of a problem, an approach endorsed by the Supreme Court in *Massachusetts v. EPA*. Moreover, Congress chose to focus on children’s products, because of the potential for harm to children, and also required the CHAP to consider cumulative exposure. 15 U.S.C. § 2057c(b)(2)(B). Under the approach laid out by Congress, the CPSC needs to consider the cumulative exposures and not just look at toys in isolation.

Instead, the fact that the CPSC’s action on children’s toys address only a portion of the problem should mean that other agencies such as FDA that regulate other products that contribute to exposure should also take meaningful mandatory action to address health harms from phthalates. In fact, the CHAP report identifies diet as one of the main sources of exposure to most phthalates assessed; other FDA-regulated products also contributing to phthalate exposures including PVC medical devices, bottled water, and drug and biologic products. We are confident that Exxon and the ACC will continue to strenuously oppose any restriction on the use of phthalates in any of these other products no matter how great their contribution to cumulative exposure for women, children and other vulnerable populations.

CPSC should work with FDA and other agencies to also ban products that contribute to the cumulative health risks posed by phthalates that are harmful or where their toxicity is poorly understood.

Conclusion:

Unfortunately, over the years, the industry has become increasingly aggressive – and usually successful – in its calls for excessive rounds of public (i.e. industry) comment, peer review, and consideration of new studies, successfully slowing agency efforts to delay health and environmental protection.³⁰ Authoritative bodies including the National Academy of Sciences and the Government Accountability Office have identified the problem of assessments being delayed for years, hindering EPA programs and

²⁸ Evaluation of new scientific evidence concerning DINP and DIDP. In relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006. 2013 <http://echa.europa.eu/documents/10162/31b4067e-de40-4044-93e8-9c9ff1960715>

²⁹ Evaluation of new scientific evidence concerning DINP and DIDP. In relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006. 2013. <http://echa.europa.eu/documents/10162/31b4067e-de40-4044-93e8-9c9ff1960715>

³⁰ See for example the case studies provided in NRDC’s report *The Delay Game*, which chronicles the decades-long effort of EPA’s IRIS Program to complete hazard assessments of TCE, formaldehyde and styrene

preventing necessary safeguards from being adopted.³¹ The CPSC's attempts to regulate and ban some phthalates are a tragic case in point, with CPSC staff expending tremendous resources re-explaining, re-justifying, and even re-doing its work in response to industry's challenges. Protections delayed are protections denied.

The CHAP report provided a very strong consensus scientific support for the CPSC's 2015 proposal to ban and restrict phthalates. The inherently hazardous properties of phthalates means that only strict mandatory regulatory restrictions on their use can prevent unsafe exposures. We urge the CPSC to follow through and finalize its proposed protective actions.

Thank you for the opportunity to provide comments.

Respectfully,

A handwritten signature in cursive script that reads "Jennifer Sass".

Jennifer Sass, PhD
Senior Scientist, NRDC

Avinash Kar
Senior Attorney, NRDC

³¹ National Research Council, 2009. *Science and Decisions: Advancing Risk Assessment*, Washington, D.C.: National Academies Press. pp.3, 17, 45-46.; Government Accountability Office, "Toxic Chemicals: EPA's New Assessment Process Will Increase Challenges EPA Faces in Evaluating and Regulating Chemicals" (April 29, 2008)