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EWG Comments on the Risk Evaluation Scoping for the First 10 Chemicals Under TSCA

Docket ID Nos.: EPA-HQ-OPPT-2016-0723 (1,4- Dioxane); EPA-HQ-OPPT-2016-0725 (Pigment Violent 29) EPA-HQ-OPPT-2016-0732 (Tetrachloroethylene (also known as perchloroethylene)); EPA-HQ-OPPT-2016-0733 (Carbon Tetrachloride); EPA-HQ-OPPT-2016-0735 (Cyclic Aliphatic Bromide Cluster (HBCD)); EPA-HQ-OPPT-2016-0736 (Asbestos); EPA-HQ-OPPT-2016-0737 (Trichloroethylene (TCE)); EPA-HQ-OPPT-2016-0741 (1-Bromopropane); EPA-HQ-OPPT-2016-0742 (Methylene Chloride); and EPA-HQ-OPPT-2016-0743 (N-Methylpyrrolidone (NMP)).

The Environmental Working Group (EWG) is a nonprofit advocacy organization dedicated to improving environmental health. EWG has long advocated for stronger federal chemical regulations and spent over a decade advocating for reforms to strengthen the Toxic Substances Control Act (TSCA). The Frank R. Lautenberg Chemical Safety for the 21st Century Act (hereinafter "Lautenberg Act") for the first time will require the Environmental Protection Agency (EPA) to comprehensively review existing chemicals on the TSCA inventory—starting with 10 work plan chemicals, as required by section 6(b)(2)(A).[1] As the first chemicals assessed under the recently overhauled law, these first 10 assessments represent an early test of the strength of the new law. As such, it is important that the scopes of these first 10 chemical risk evaluations adequately consider the diverse uses of each chemical and the unique ways that vulnerable and chemically over-burdened populations may be at risk.

We submit these comments generally to apply to all 10 scoping documents released by EPA on June 22, 2017. The following comments are meant to assist EPA to strengthen the proposed scopes of the first 10 chemicals before it moves into the problem formulation phase of the risk evaluation process. In particular, EWG comments that EPA's scoping documents on the first 10 chemicals should be revised as needed to ensure they include:

- Reasonably foreseeable uses like accidents, misuses, and off-label uses
- The entire lifecycle of the chemical
- Exposures from non-TSCA uses
- Contaminants and low-concentration uses that contribute to overall exposure
- Exposures for which data is limited
- Risks to potentially exposed and susceptible populations
- Risks from aggregate and cumulative exposures

Accidents, misuses, and off-label uses

[1] 15 U.S.C. § 2605(b)(2)(A).

Pursuant to TSCA section 6(b)(4)(D), a chemical's scoping document should include "the scope of the risk evaluation to be conducted, including the hazards, exposures, conditions of use, and the potentially exposed or susceptible subpopulations the Administrator expects to consider."[2]

The Lautenberg Act defined "conditions of use" as "the circumstances, as determined by the Administrator, under which a chemical substance is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, or disposed of."[3] The plain language of this definition requires EPA to consider not only the intended and known uses of a chemical, but also any "reasonably foreseeable uses."

Reasonably foreseeable uses should include accidents like chemical spills and leaks that can contaminate air, water, and soil. The National Environmental Policy Act ("NEPA") highlights how "reasonable foreseeability" includes accidental releases in the context of environmental law. NEPA requires federal agencies to prepare an environmental impact statement ("EIS") for any proposed major federal action "significantly affecting the quality of the human environment."[4]

Other language in TSCA further underscores the intention to include accidental or inadvertent releases or exposures. The process for prioritizing chemicals requires EPA to consider "storage near significant sources of drinking water."[5] This is a clear reference to potential risks from accidental spills or leaks, or even criminal releases, into drinking water.

EWG is further concerned by EPA's stated intent to generally exclude "intentional misuses" from the scope of a chemical risk evaluation.[6] Reasonably foreseeable uses would also include foreseeable misuses, whether they are intentional or not. For example, a consumer may foreseeably misuse cleaning and other consumer products in several ways. A bathtub cleaner may also be used to clean the bathroom sink. A cleaner that is meant to be sprayed from 8 to 10 inches away may instead be sprayed from 3 inches away. Consumers and workers may apply more or less of a product than what is directed. Chemical facilities may intentionally improperly release or dispose of a chemical. These misuses are reasonably foreseeable and should be included in the scope of a risk evaluation.

Lifecycle of chemical, including legacy uses

Section 6(a) requires EPA to regulate when an unreasonable risk is posed by the "manufacture, processing, distribution in commerce, use, or disposal" of a chemical or "any combination such activities."[7] This makes clear that in the scope of a risk assessment, EPA must account for the entire lifecycle of the chemical, including risks during production, processing, distribution, recycling, and disposal, or any combination of those activities. It follows that the scope of EPA's risk evaluations should include both current and also legacy uses, as well as legacy disposal. As

[2] 15 U.S.C. 2605 (b)(4)(D).
[3] 15 U.S.C. 2602(4).
[4] 42 U.S.C. § 4332(2)(C)(i).
[5] 15 U.S.C. § 2605(b)(1)(A).
[6] Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act, 82 Fed. Reg. 33726, 33729 (July 20, 2017).
[7] 15 U.S.C. 2605(a).

such, EWG is concerned by EPA's stated intention to focus on "uses for which manufacturing, processing, or distribution in commerce is intended, known to be occurring, or reasonably foreseen to occur (i.e., is prospective or on-going), rather than reaching back to evaluate the risks associated with legacy uses, associated disposal, and legacy disposal."[8]

This interpretation undermines the design of TSCA as a cradle-to-grave statute and is at odds with EPA's clear mandate to evaluate and regulate risks at the end of a chemical's lifecycle. Excluding legacy uses is also at odds with EPA's requirement to "take into account, where relevant, the likely duration, intensity, frequency and number of exposures under the conditions of use of the chemical substance."[9] To fully consider the frequency and number of exposures to a chemical, EPA must consider likely exposure from all sources—regardless of whether the exposure came from an ongoing or a legacy use.

Asbestos and the HBCD provide important examples. Both chemicals may be found in previously installed insulation and other building materials in homes, offices, schools and other buildings. They can be released if disturbed, creating an exposure risk. Thousands of American homes have asbestos-containing vermiculite insulation, and millions have HBCD-containing insulation board. As insulation ages, chemicals like HBCD and asbestos can migrate into household dust.

Building materials may also be improperly removed or disposed of, creating additional exposure risks. For example, in 2016, the Washington State Attorney General brought charges against a hotel owner for improper asbestos removal.[10] According to the news release, the owner lied about the extent of renovations in order to get around asbestos surveying and permit requirements. As a result, workers, inspectors, and people living near the hotel were all potentially exposed to unsafe levels of asbestos from legacy uses.

The prevalence of these legacy uses underscores the importance of including them in risk evaluations. Without considering exposure from legacy uses or disposal, EPA will be unable to assess the aggregate exposure because it will not have a complete picture of the "likely duration, intensity, frequency, and number of exposures to a chemical."

Consideration of non-TSCA uses

The requirement that EPA consider the "hazards, exposures, [and] conditions of use" in its scoping documents and also the "likely duration, intensity, frequency, and number of exposures" means that EPA must also consider uses covered by other agencies and statutes.

EWG is concerned by EPA's assertion that "During the scoping phase, EPA may also exclude a condition of use that has been adequately assessed by another regulatory agency, particularly

[8] Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act, 82 Fed. Reg. 33726, 33730 (July 20, 2017).
[9] 15 U.S.C. § 2605(b)(4)(F)(iv).
[10] Press Release, Washington State Office of the Attorney General, AG Files Criminal Charges Against Hotel Owner over Asbestos Removal (May 11, 2016), http://www.atg.wa.gov/news/news-releases/ag-files-criminal-charges-against-hotel-owner-over-asbestos-removal.

where the other agency has effectively managed the risks."[11] Even if another agency has taken steps to manage risk from a particular use, that doesn't mean the use does not contribute to exposure or that the risk has been eliminated. For example, many of the first 10 chemicals pose occupational risks that may be regulated by OSHA. However, oftentimes OSHA's regulations need to be updated or do not go far enough. For example, OSHA has a permissible exposure limit (PEL) for trichloroethylene, or TCE, but it is already 20 years old.[12] Additionally, even OSHA admits that many of its PELs are outdated and do not adequately protect workers from chemicals.[13] As such, action taken by OSHA should not be a basis for excluding occupational uses from a risk evaluation scope.

Likewise, several TSCA-regulated chemicals also have FDA-regulated uses. Although methylene chloride is primarily used as a paint stripper and remover,[14] FDA has also approved it as a food additive for uses including as a solvent in the extraction of caffeine from green coffee beans.[15] A person who uses a methylene chloride-based paint stripper may also drink decaffeinated coffee and could be exposed from both sources. 1,4-Dioxane, used industrially as a solvent and chemical stabilizer, is a well-known contaminant in personal care and other consumer products. A recent analysis by EWG found that as many as 8,000 personal care products contain ethoxylated ingredients manufactured through a process that may create 1,4-dioxane as a byproduct.[16] An individual exposed to 1,4-dioxane in an occupational setting would likely also be exposed to 1,4-dioxane through their personal care or cleaning products.

Finally, non-TSCA uses include uses regulated by EPA, but under other statutes. Several of the first 10 chemicals—including 1,4-dioxane, TCE, tetrachlorethylene (perc), methylene chloride, asbestos, and carbon tetrachloride—are known to contaminate drinking water systems, according to nationwide water testing results analyzed in EWG's recently released Tap Water Database.[17] These chemicals are detected in concentrations that exceed health guidelines in drinking water served to millions of Americans, sometimes in combination with each other due to a common industrial source. Of these contaminants, EPA has yet to set an enforceable drinking water standard for 1,4-dioxane. The Maximum Contaminant Levels set for carbon tetrachloride, TCE, tetrachlorethylene, and methylene chloride are all less health-protective than other standards or public health goals promulgated by EPA or other public health agencies such as the California Office of Environmental Health Hazard Assessment. Even so, EWG's analysis found drinking water violations in some drinking water systems that had levels of carbon tetrachloride, TCE,

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[11] Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act, 82 Fed. Reg. 33726, 33729 (July 20, 2017).

[12] Envtl. Protection Agency, Scope of the Risk Evaluation for Trichloroethylene, p. 32 (June 22, 2017), https://www.epa.gov/sites/production/files/2017-06/documents/tce_scope_06-22-17.pdf

[13] U.S. Dep't of Labor, Occupational Safety and Health Administration, Permissible Exposure Limits—Annotated Tables, https://www.osha.gov/dsg/annotated-pels/ (last accessed Sept. 19, 2017).

[14] ATSDR, Toxicological Profile for Methylene Chloride, pp. 1-2, https://www.atsdr.cdc.gov/toxprofiles/tp14.pdf (last accessed March 7, 2017).

[15] 21 C.F.R. § 173.255(c).

[16] Press Release, Envtl. Working Grp., EWG Surveys Personal Care Companies About 1,4-Dioxane (April 17, 2017), http://www.ewg.org/release/ewg-surveys-personal-care-product-companies-about-14-dioxane#.WcCe2tN96CQ.

[17] Envtl. Working Grp., EWG's Tap Water Database, All Contaminants, https://www.ewg.org/tapwater/chemical-contaminants.php#.WcCifNN96CQ.

and tetrachlorethylene exceeding the MCLs. Because water contamination is so pervasive, and EPA's enforceable drinking water standards are often not sufficiently protective, EPA should always consider exposure from drinking water as part of its risk assessments.

These examples show that people are exposed to chemicals in myriad ways that often fall under the jurisdiction of different laws and different agencies. While EPA would only regulate some of those uses under TSCA, uses and exposures that occur outside of TSCA's jurisdiction contribute to an individual's aggregate exposure, and thus could contribute to an unreasonable risk of injury to health and must be considered.

Must be based on adequate information

EPA should not omit a condition of use from the scope of the risk assessment because data on that particular use is lacking. For example, EPA has insufficient information about the likely exposure of workers and people living in homes that use HBCD insulation. EPA also has limited information about 1,4-dioxane levels in products that contain ethoxylated ingredients. EPA should study exposures rather than make assumptions based on the limited data. After all, the law requires EPA to actively seek "reasonably available information" about conditions of use from stakeholders.[18]

"Reasonably available" is defined broadly in the final risk evaluation rule to include not only information EPA possesses, but also all information EPA can "reasonably generate, obtain, and synthesize for use in risk evaluations."[19] This would include information published in scientific journals and industry studies. It would also include information already collected by state governments or under foreign regulations like the Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) in Europe. If EPA knows this information exists and was submitted to other governments, it should take measures to request the same information from the manufacturers or processors responsible for its submission. Additionally, EWG encourages EPA to rely on the appropriate use of defaults, or calculated uncertainty factors when specific information is missing. Finally, EPA has various tools under sections 4, 8(a), 8(c), 11 and 26(a) to order testing or solicit information as needed to fill data gaps.

Exposure from contaminants or impurities

EWG is concerned by EPA's stated intent to generally exclude impurities and other "de minimis" exposures from the scope of its risk evaluations.[20]

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[18] 15 U.S.C. § 2625(k) ("The Administrator shall take into consideration information relating to a chemical substance or mixture, including hazard and exposure information, under the conditions of use, that is reasonably available to the Administrator."); 15 § 2605(b)(4)(F)(i).

[19] Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act, 82 Fed. Reg. 33726, 33748 (July 20, 2017) (to be codified at 40 C.F.R. pt. 702.33).

[20] Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act, 82 Fed. Reg. 33726, 33730 (July 20, 2017)("EPA may choose not to include a particular impurity within the Scope of any risk evaluation, where EPA has a basis to foresee that the risk from the presence of the impurity would be 'de minimis' or otherwise insignificant.")

This general exclusion falsely equates de minimis exposures with low risk. It disregards the significant body of evidence that hormone disruptors and developmental toxicants may cause adverse effects at very low doses, and ignores the possibility of nonmonotonic dose-response curves. The pharmaceutical literature is rife with examples of nonmonotonicity, timing and age-group specific toxicity concerns.[21] Furthermore, even de minimis exposures contribute to an individual's aggregate exposure to a chemical.

An important example is 1,4-dioxane. 1,4-Dioxane is a well-known impurity that occurs as a byproduct of the ethoxylation process. In the scoping document for 1,4-dioxane, EPA has indicated it will exclude these uses from the scope of its evaluation. Specifically, EPA states that:

> In the case of 1,4-dioxane, EPA anticipates that production of 1,4-dioxane as a by-product from ethoxylation of other chemicals and presence as a contaminant in industrial, commercial and consumer products will be excluded from the scope of the risk evaluation. These 1,4-dioxane activities will be considered in the scope of the risk evaluation for ethoxylated chemicals. EPA believes its regulatory tools under TSCA section 6(a) are better suited to addressing any unreasonable risks that might arise from these activities through regulation of the activities that generate 1,4-dioxane as an impurity or cause it to be present as a contaminant than they are to addressing them through direct regulation of 1,4-dioxane.[22]

This approach is backwards. 1,4-Dioxane is a likely carcinogen and is associated with several other health effects, including liver and kidney damage, lung irritation, and eye, nose, and throat irritation.[23] Whether the presence of 1,4-dioxane in a product is intentional or the result of contamination does not change the potential health risks. Furthermore, it makes more sense to examine the risks from 1,4-dioxane formation in the context of the risk evaluation on 1,4-dioxane when EPA will be looking at other routes of 1,4-dioxane exposure and specifically analyzing the risks from 1,4-dioxane.

Several chemicals form 1,4-dioxane as part of the ethoxylation process. An analysis of EWG's Skin Deep database found that as many as 8,000 products contained ethoxylated ingredients that create 1,4-dioxane as a byproduct during manufacturing.[24] Presumably, future EPA risk evaluations on any of those ethoxylated chemicals will be focused on the risks posed by those chemicals themselves, with 1,4-dioxane formation considered only as a secondary issue. Furthermore, evaluating 1,4-dioxane formation as part of the risk evaluation for each ethoxylated chemical separately—each of which could be years or decades apart—would give EPA a disjointed and incomplete picture of the real problem.

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[21] See, e.g., Non-monotonic Dose Response Curves, Our Stolen Future, http://www.ourstolenfuture.org/NewScience/lowdose/nonmonotonic.htm (last visited Sept. 19, 2017).
[22] Envtl. Protection Agency, Scope of the Risk Evaluation for 1,4-Dioxane, p. 8 (June 22, 2017), https://www.epa.gov/sites/production/files/2017-06/documents/dioxane_scope_06-22-2017.pdf (emphasis added).
[23] ATSDR, Toxicological Profile for 1,4-dioxane, Relevance to Public Health, p. 2, https://www.atsdr.cdc.gov/toxprofiles/tp187-c2.pdf (last accessed Sept. 19, 2017).
[24] Press Release, Envtl. Working Grp., EWG Surveys Personal Care Companies About 1,4-Dioxane (April 17, 2017), http://www.ewg.org/release/ewg-surveys-personal-care-product-companies-about-14-dioxane#.WcCe2tN96CQ.

As EPA admits,[25] there is little information about how widespread contamination from 1,4-dioxane is in consumer products with ethoxylated ingredients. Because it's not intentionally added it does not need to be listed on product labels, and companies are not required to measure or disclose levels of 1,4-dioxane in their products. As such, there is little way to know if 1,4-dioxane is present and, if so, at what levels. While manufacturers can take steps to minimize 1,4-dioxane formation or vacuum strip it from products, manufacturers are also not required to report if they are doing so.[26] EPA should not make assumptions based on what it does not know, but should instead study the issue.

Without more information, EPA cannot assume that 1,4-dioxane exposures through personal care and other consumer products are minimal and not a concern. Americans use several different kinds of personal care products every day, many of which contain ethoxylated ingredients and could be contaminated with 1,4-dioxane. It is reasonable to assume that many people exposed through their personal care products might also be exposed to 1,4-dioxane residues through cleaners, paints, dyes, or other consumer products. Those same individuals may also be exposed to 1,4-dioxane through drinking water, or may live in a community close to where 1,4-dioxane is processed, manufactured or disposed of. As such, even those "de minimis" exposures from 1,4-dioxane contamination can add up and contribute to an individual's aggregate exposure. Thus, these exposures should be included in the scope of risk evaluations so that EPA can more accurately gauge overall exposure and control risks.

Identifying hazards to "exposed individuals and populations"

EWG encourages EPA to keep in mind that the appropriate processes and procedures to identify susceptible and highly exposed populations may be unique to each substance evaluated. For example, legacy uses of a substance may have disproportionately contaminated particular communities, or exposure to a substance may pose unique health risks for fetal or childhood development. Consequently, EWG urges the agency to seek communities' and public health experts' input as to the appropriate means to identify vulnerable and chemically overburdened populations when drafting scoping documents. EWG also requests that EPA apply its own established principles for promoting environmental justice when determining the scope of a risk assessment.[27]

When EPA identifies "any potentially exposed or susceptible subpopulations" and "the hazards to health and the environment that EPA plans to evaluate," the agency should conduct outreach to communities likely to be home to potentially exposed or susceptible subpopulations. These communities may possess crucial information about hazards that the agency may itself lack. For

[25] Envtl. Protection Agency, Scope of the Risk Evaluation for 1,4-Dioxane, p. 21 (June 22, 2017), https://www.epa.gov/sites/production/files/2017-06/documents/dioxane_scope_06-22-2017.pdf ("The extent that manufacturers or processors apply controls or processes to minimize or remove 1,4-dioxane in surfactants during manufacture or before formulation in consumer products is unknown and likely varies by sector.")
[26] *Id.*("manufacturers can apply controls to minimize the formation of 1,4-dioxane or remove most of the 1,4-dioxane present in these products through a vacuum stripping process").
[27] Envtl. Protection Agency, EJ 2020 Action Agenda: EPA's Environmental Justice Strategy, https://www.epa.gov/environmentaljustice/ej-2020-action-agenda-epas-environmental-justice-strategy (last visited Sept. 19, 2017).

example, as highlighted in the comments submitted by Earthjustice et al. in March,[28] such communities are in the best position to inform EPA about nursing homes or schools located near sites that increase the likelihood of their exposures to the chemical. Additionally, workers may be best able to identify real-world occupational exposures to chemicals, including roles and responsibilities that create highly exposed subgroups within their ranks. Other federal, state, and local regulatory authorities may also possess information necessary to establishing the proper scope of a risk assessment. For example, the California EPA has developed child-specific risk values for certain chemicals like atrazine and chlorpyrifos. Those values compare children's susceptibility to adults' by specifically examining child-specific routes of exposure.[29] EPA should review California EPA's approach and adopt its risk values as appropriate, and incorporate information from the analysis California EPA has already completed.

Aggregate and cumulative exposures

As part of a risk assessment, EPA is required to describe whether aggregate or sentinel exposures to a chemical substance under the conditions of use were considered.[30] As emphasized in the above sections, EWG strongly believes that considering the *aggregate* exposures will provide a more robust analysis of the total risk a chemical poses, and that EPA's scoping documents should reflect consideration of those aggregate exposures.

To properly assess aggregate exposures, EPA must consider exposures throughout the lifecycle of the chemical from all routes and pathways, including exposures from conditions of use not regulated by TSCA. This includes exposures from food, drinking water, pesticides, and personal care products, even if those uses are not specifically regulated during section 6(a) rulemaking. EWG emphasizes that this approach should include aggregate exposures from trace contaminants, such as asbestos fibers sometimes found in talc products,[31] or 1,4-dioxane in cleaning and personal care products that contain ethoxylated ingredients.[32]

When possible, EPA should also consider cumulative exposures when scoping a risk evaluation. EPA has explicit authority to order testing and prescribe protocols and methodologies for a number of health and environmental effects – including "cumulative or synergistic effects."[33] Considering cumulative exposures is in line with EPA's priorities and consistent with the best practices for risk evaluations. In *Framework for Cumulative Risk Assessment* (2003), EPA states,

[28] Alaska Community Action on Toxics, et al., Comments on Scope of the Risk Evaluations for the First Ten Chemicals Under the Toxic Substances Control Act (Mar. 15, 2017).
[29] Cal. EPA, Office of Envtl. Health Hazard Assessment, Child-Specific Reference Doses Finalized to Date, http://oehha.ca.gov/risk-assessment/chrd/table-all-chrds (Jun. 22, 2010).
[30] 15 U.S.C. § 2605(b)(4)(F)(ii).
[31] Ronald Gordon, et. al., Asbestos in Commercial Cosmetic Talcum Powder as a Cause of Mesothelioma in Women, 20 Int'l J. of Occupational and Envt'l Health 318 (2014), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4164883.
[32] Agency for Toxic Substances & Disease Registry, Public Health Statement for 1,4-Dioxane, Toxic Substances Portal (April 2012), https://www.atsdr.cdc.gov/phs/phs.asp?id=953&tid=199.
[33] 15 U.S.C. § 2603(b)(2)(A).

"Assessing cumulative risk through complex exposures is one of the Agency's high priorities…and it is germane and of great interest to all program and regional offices."[34]

Considering cumulative exposures is important because people and vulnerable subpopulations can be exposed to multiple chemicals and stressors that contribute to the same adverse health effects. The National Academy of Sciences (NAS) has noted the need to evaluate the cumulative effects of phthalates and also pointed to the fact that lead and mercury can collectively affect brain development.[35] Additionally, cumulative exposures to multiple carcinogenic solvents (TCE, 1,4-dioxane, methylene chloride and perchloroethylene) via air and drinking water may pose unique risks for people living near sites with industrial contamination. Taking such cumulative impacts into consideration would improve current assessments, and to the extent possible should be included in scoping.

EPA may consider collective exposure to groups of similar chemicals, and use the Adverse Outcome Pathway framework and database[36] to identify where cumulative effects may be an issue. EPA should follow the cumulative risk assessment process recommended by the National Academy of Sciences (NAS) in their Phthalates and Cumulative Risk Report.[37] When specific information is not available, EPA may use default values to account for cumulative exposures.

Conclusion

EWG appreciates the opportunity to comment on the scoping documents for the first 10 TSCA substances. We hope that these comments will help EPA to reevaluate the scoping documents of the first 10 TSCA substances so that they address fully the ways in which vulnerable and chemically over-burdened populations around the country are placed at risk by these chemicals. We look forward to continuing to participate in EPA's risk evaluation and risk management efforts under TSCA. Should you have any additional questions, please feel free to reach out to Melanie Benesh, Legislative Attorney at EWG, 202-939-0120, mbenesh@ewg.org.

[34] Envtl. Protection Agency, Framework for Cumulative Risk Assessment, p. xi https://www.epa.gov/sites/production/files/2014-11/documents/frmwrk_cum_risk_assmnt.pdf (last accessed Sept. 19, 2017).

[35] Nat'l Acad. Sci., Phthalates and Cumulative Risk Assessment: The Tasks Ahead (2008), https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=202508.

[36] Adverse Outcome Pathway Knowledge Database, Org. for Econ. Co-Operation & Dev., http://aopkb.org/ (last visited March 20, 2016).

[37] Nat'l Acad. Sci., Phthalates and Cumulative Risk Assessment: The Tasks Ahead (2008), https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=202508..