Development of Tiered Data Reporting to Inform TSCA Prioritization, Risk Evaluation, and Risk Management

Submitted online via Regulations.gov to docket EPA-HQ-OPPT-2021-0436

These comments are submitted on behalf of the undersigned scientists, academics, and clinicians. We declare collectively that we have no direct or indirect financial or fiduciary interest in any chemical or product that is the subject of these comments. The co-signers' institutional affiliations are included for identification purposes only and do not imply institutional endorsement or support unless indicated otherwise.

We appreciate the opportunity to provide written comments on EPA's development of a proposed rule for implementing a tiered data collection strategy to help inform the Agency's prioritization, risk evaluation, and risk management activities for chemical substances or mixtures under the 2016 amended Toxic Substances Control Act (TSCA). Currently, EPA primarily collects exposure-related data through the TSCA Chemical Data Reporting (CDR) process. EPA is interested in ensuring that its data collection strategies provide information to better meet the Agency's basic chemical data needs, such as information related to exposure, health, and eco-toxicity. To this end, EPA is exploring a data reporting rule that is tiered to specific stages of the TSCA existing chemicals program: Identifying a pool of substances as potential candidates for prioritization, selecting candidate chemicals, and completing the prioritization process, and assessing high-priority substances through a robust risk evaluation, which may be followed by risk management actions (depending on the outcome of the risk evaluation).

The legacy of limited or no data is a widespread barrier that has significantly undermined the Office of Chemical Safety and Pollution Prevention (OCSPP) ability to evaluate potential exposures, health hazards and risk of chemical exposures under TSCA. EPA failed to exercise its data-gathering authorities under sections 4, 8 and 10 during the prioritization and the evaluation of the first ten chemicals for risk evaluation under TSCA, which led to critical data gaps and ultimately erroneous conclusions that underestimated the health risks of these chemicals, particularly to those who are more exposed and susceptible because of lack of critical health or toxicity information. For example, EPA failed to request any test orders for human health information, despite data insufficiencies on multiple critical health endpoints for several of the first ten chemicals (e.g., EPA did not have sufficient empirical evidence to determine that C.I. Pigment Violet 29 did not have Reproductive/Developmental toxicity). To effectively protect human health from industrial chemicals, EPA must have sufficient data to ensure that their true risks can be comprehensively evaluated and mitigated via TSCA regulation.

Our comments on the Development of Tiered Data Reporting to Inform TSCA Prioritization, Risk Evaluation, and Risk Management address the following main issues:

1. **EPA must apply its testing, reporting, and research authorities under sections 4, 8, 10 and 11 of TSCA to require chemical manufacturers to provide necessary data, including human health effects and toxicity studies needed to perform a risk evaluation.**

2. **EPA should require sufficiently comprehensive and sensitive data on health hazards that can be used to understand and characterize hazards, prevent, or mitigate harmful health effects of chemicals and characterize cumulative risk.**
3. **EPA's planned Tiered Data Reporting Rule does not allow the Agency sufficient time to apply its section 4 testing authorities once a chemical has been classified as "High Priority" if critical health effects data gaps are identified following the submission of Health and Safety Studies under section 8(d). The Agency, therefore, must re do the timeline**
4. **EPA must proactively outline existing data gaps in chemicals of concern that are "Candidates" for "High Priority" listing before the "Prioritization" process to generate these data in a timely manner to ensure it meets its obligation to develop scientifically based public health-protective decisions around hazard and risk.**

We appreciate the opportunity to provide public input. Please do not hesitate to contact us with any questions regarding these comments.

Sincerely,

Nicholas Chartres, PhD
Associate Director, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Tracey Woodruff, PhD, MPH
Professor and Director, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Max Aung, PhD, MPH
Research Scientist, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Swati Rayasam, MSc
Science Associate, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Courtney Cooper, BS
Science Associate, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Daniel Axelrad, MPP
Independent Consultant

Phil Brown, PhD
University Distinguished Professor of Sociology and Health Sciences
Northeastern University

Thomas A. Burke, PhD, MPH
Professor, Health Policy and Management
Professor, Environmental Health and Engineering
Johns Hopkins University Bloomberg School of Public Health

Jane C Caldwell, PhD
Environmental Health Scientist (retired)
US Environmental Protection Agency

Courtney Carignan, PhD
Assistant Professor, Department of Food Science and Human Nutrition
Michigan State University

Jeanne Ann Conry, MD, PhD
President-elect
The International Federation of Gynecology and Obstetrics

Nadia Gaber, PhD
Postdoctoral Scholar, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Mary Gant, MS
Policy Analyst (retired)
National Institute of Environmental Health Sciences

Robert M. Gould, MD
Associate Adjunct Professor, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco
President, San Francisco Bay Physicians for Social Responsibility

Sarah Howard, MS
Coordinator
Healthy Environment and Endocrine Disruptor Strategies (HEEDS)
East Greenbush, NY

Tracy Kolian, MPH
Health Policy Specialist
Children's Environmental Health Network*
Washington, DC

Patricia D. Koman, MPP, PhD
President and Senior Health Scientist
Green Barn Research Associates
Ann Arbor, MI

Gail Lee, REHS, HEM
Sustainability Director
University of California, San Francisco

Rachel Morello-Frosch PhD, MPH
Professor, Department of Environmental Science, Policy and Management
University of California, Berkeley College of Natural Resources
Professor, Department of Environmental Health
University of California, Berkeley School of Public Health

Ingrid Nygaard, MD
Professor, Department of Obstetrics and Gynecology
University of Utah School of Medicine

Sharyle Patton
Director, Health and Environment Program
Commonweal
Bolinas, CA

Andrea Phillips
Administrative Coordinator, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Hanna Saltzman, MD
Pediatrics Resident Physician, Department of Pediatrics
University of Utah School of Medicine

Patrice Sutton, MPH
Collaborating Research Scientist, Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Marya Zlatnik, MD, MMS
Professor, Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

*indicates organizational sign-on

DETAILED COMMENTS

1. **EPA must apply its testing, reporting, and research authorities under sections 4, 8, 10, and 11 of TSCA to require chemical manufacturers to provide necessary data, including human health effects and toxicity studies to perform a risk evaluation.**

To effectively protect human health from industrial chemicals, EPA must have sufficient data to ensure the risks these chemicals pose can be comprehensively evaluated and mitigated via TSCA regulation. Timely generation of human health and toxicity data for chemicals that are prioritized for evaluation under TSCA is therefore critical to the integrity of EPA's risk evaluations. If EPA fails to attain and evaluate chemicals using up-to-date data on the human health effects, including from dose-response animal toxicological studies, human biomonitoring studies, and environmental monitoring and modeling of exposures of the chemicals being evaluated under TSCA, then the true harms of these chemicals will remain unknown, putting the public's health at risk. This is particularly acute for risks to the most vulnerable and susceptible, including pregnant women, children and environmental justice communities.[1]

TSCA statute[2] and regulation[3] require adequate data to inform the determination of whether a chemical poses an unreasonable risk; regulation requires the evaluation to consider "relevant" potential human and environmental hazards.[4] Certain health hazards such as "cancer/carcinogenesis, mutagenesis/gene mutation, teratogenesis, behavioral disorders, and birth defects"[5] are specifically designated in TSCA, indicating that Congress expressly recognized these types of health effects as important to evaluate in making a risk determination. Many of these health effects are also disproportionately borne by low-income/marginalized communities/communities of color.

In several instances, EPA under TSCA classified conditions of use (COU) of the first ten chemicals it evaluated as not presenting an unreasonable risk without sufficient health effects and exposure data being available for the Agency to make such a determination. For example, in the revised Risk Evaluation for C. I. Pigment Violet 29, we highlighted that EPA did not have sufficient empirical evidence to determine that C.I. Pigment Violet 29 did not have Reproductive/Developmental toxicity.[6] In such instances the only valid scientific conclusion EPA should draw from a lack or absence of data required to determine the health risks posed by a chemical it is evaluating under TSCA, is that they are unknown.

EPA has at its discretion, however, the power to apply its testing, reporting, and research authorities under sections 4, 8, 10 an 11 of amended TSCA to require chemical manufacturers (including importers),

[1] Koman, P.D., Singla, V. I., Lam, J., & Woodruff, T. J. (2019). Population susceptibility: A vital consideration in chemical risk evaluation under the Lautenberg Toxic Substances Control Act. *PLoS Biology*. https://doi.org/10.1371/journal.pbio.3000372

[2] 15 USC §2601 (b)(1)

[3] 40 CFR § 702.41 (b)

[4] 40 CFR § 702.41 (d)(3)

[5] 15 USC §2603 (b)(2)(A); 15 USC §2603 (e); 15 USC §2605 (b)(2)(D)

[6] US EPA. (2020). C.I. Pigment Violet 29; Revised Draft Toxic Substances Control Act (TSCA) Risk Evaluation; Notice of Availability, Letter Peer Review and Public Comment. Comment submitted by Swati Rayasam et al., Science & Policy Program on Reproductive Health and the Environment Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco's Program on Reproductive Health and the Environment (UCSF PRHE). Available: https://www.regulations.gov/comment/EPA-HQ-OPPT-2018-0604-0111

processors, and distributors to provide the necessary data, including health effects and toxicity studies, to perform a risk evaluation.[7]

Under TSCA section 4, EPA can use its authority to generate and obtain information about chemical substances by ordering testing by the chemical manufacturers and importers needed to conduct a lawful risk evaluation and can also impose reporting obligations on parties "likely to have [relevant] information" under TSCA section 8. Section 4 test orders should be focused on all relevant test models, exposure pathways, health outcomes, and target populations (including any vulnerable or sensitive populations) anticipated to support the generation of high-quality and relevant evidence to support timely decision-making.

Additionally, to fulfill its duties under TSCA sections 6(a) through (c), even in circumstances where it determines it is not appropriate to pursue a section 4 test order, EPA can conduct or fund research, in coordination with other federal agencies, to generate such information under TSCA section 10. Under section 11 if the owners of information EPA seeks fail to share and submit the data, EPA can use its authority under TSCA section 11(c) to subpoena the information and compel the production of reports, documents, and other information.[8]

EPA failed to exercise these various authorities throughout the first ten chemical risk evaluations under amended TSCA, which has led to critical data gaps in the health or toxicity information needed for the Agency to draw scientifically supported conclusions on the safety of these chemicals, thus leaving the public's health at risk. For example, EPA failed to issue any test orders for human toxicity information, despite several of the first ten chemicals lacking necessary information on several critical health endpoints. Although EPA has issued Section 4 test orders for C. I. Pigment 29 and for nine chemicals with ongoing risk evaluations, these test orders have been narrow in scope including only short term-occupational exposure studies, chemical solubility studies and ecotoxicity studies.

In addition to fully exercising its authorities under TSCA sections 4, 8, 10 and 11 EPA should pursue several approaches to incentive and require appropriate data. First, confidential business information rationales have frequently been used by industry to shield data from public view and these justifications can be reevaluated with a goal of increasing transparency and availability of data. Additionally, EPA could use specific approaches to incentivize data generation including publishing provisional toxicity values for chemicals that apply multiple default adjustment factors as needed to account for lack of data. Such an approach to use adjusted maximum tolerated doses and/or acute LD50 values, which are correlated with cancer potency, have been recommended by the NAS based on empirical

[7] US Environmental Protection Agency: Toxic Substances Control Act (TSCA). In., vol. 15 USC ch. 53 subch. I §§ 2601–2629.
[8] *See* 15 U.S.C. § 2610.

data.[9,10,11,12,13,14] Thus, timely policy remedies that incentivize data generation should be critical to both protecting the public's health and to improved understanding and characterization of chemical risks.

2. **EPA should require sufficiently comprehensive and sensitive data on health hazards that can be used to understand and characterize hazards, prevent, or mitigate harmful health effects of chemicals and characterize cumulative risk.**

To identify and evaluate the health effects and appropriately mitigate the harms of chemicals under evaluation, EPA must ensure that the data it requires are sufficiently sensitive and comprehensive. EPA should explicitly define a list of chemical properties or hazards including physical characteristics, health endpoints, and susceptible and vulnerable subpopulations that the Agency considers critical to determine the safety of a chemical that may undergo an evaluation. A range of health effects could be considered by these completeness metrics (e.g., cardiovascular, reproductive development, cancer, neurodevelopmental) across sensitive life stages (e.g., preconception, during fetal and child development, and aging), and assays that are sufficiently robust and sensitive to identify risk of health effects in humans (e.g., accounting for cumulative exposures, timing of exposure, length of exposure and dose of exposure).

Once established, such an approach would allow the agency to establish "the completeness of the database" it has to evaluate chemicals by identifying the number of metrics that can be assessed with the data the Agency has currently available. The Agency could use this list to assess the availability of data and provide a public summary characterizing the "completeness of the database" for each chemical. Finally, EPA can use this to outline data gaps for each chemical assessed and identify those most critical to decision making, which would facilitate timely data generation consistent with other programs in Canada and Europe. [15,16]

3. **EPA's planned Tiered Data Reporting Rule does not allow the Agency sufficient time to apply its section 4 testing authorities once a chemical has been classified as "High Priority" if critical health effects data gaps are identified following the submission of Health and Safety Studies under section 8(d).**

While EPA proposes to use its section 8(d) reporting authorities once a chemical has been considered "High Priority", it will not allow the Agency sufficient time to enact its testing authorities under section 4 to order further testing from the chemical manufacturers and importers to conduct a lawful risk

[9] National Research Council: Science and Decisions: Advancing Risk Assessment. In.; 2009.
[10] Zeise L, Wilson R, Crouch EAC: Use of Acute Toxicity to Estimate Carcinogenic Risk Risk Analysis 1984, 4.
[11] Crouch E, Wilson R, Zeise L: Tautology or not tautology? J Toxicol Environ Health 1987, 20(1-2):1-10.
[12] Zeise L, Crouch EAC, Wilson R: A Possible Relationship Between Toxicity and Carcinogenicity. JOURNAL OF THE AMERICAN COLLEGE OF TOXICOLOGY 1986, 5(2).
[13] Crouch EAC, Feller J, Fiering MB, Hakanoglu E, Wilson R, Zeise L: Health and Environmental Effects Document: Non-Regulatory and Cost Effective Control of Carcinogenic Hazard. In. Edited by Department of Energy H, and Assessment Division, Office of Energy Research; 1982.
[14] Gold LS, Sawyer CB, Magaw R, Backman GM, de Veciana M, Levinson R, Hooper NK, Havender WR, Bernstein L, Peto R: A carcinogenic potency database of the standardized results of animal bioassays. Environ Health Perspect 1984, 58:9-319.
[15] Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). (2006). In: *COM 2003/0644 Final.* European Union.
[16] Canada Environmental Protection Act - Chemical Management Plan. (2006). In: *SC 1999, c 33.* Canada.

evaluation following the submission of health and safety studies by manufacturers (including importers), processors, and distributors. This is due to the statutory deadlines that are mandated under TSCA. Under section 6(b)(4)(G) risk evaluations must be completed in 3-3.5 years, after a chemical is listed as "High Priority," which means that if any critical data gaps are identified following the submission of health and safety studies, and the manufacturers (including importers), processors, and distributors take 4-6 months to submit the reports from date of listing, this leaves the Agency 2.5-3 years for the studies to be conducted and submitted to EPA and for EPA to review the study and incorporate into the risk evaluation. The more complex human health studies like a 2-generation reproductive effects and fertility study takes 29 months and a oncogenicity study takes ~53 months to conduct, which means the statutory deadlines imposed on the Agency under TSCA will mean such critical human health effects studies cannot be completed.

Therefore, EPA cannot proceed with its proposed Tiered Data Reporting Rule unless it is satisfied with conducting risk evaluations that may not contain all the necessary health effects data required to estimate the true risk of the chemicals it evaluates.

4. **EPA must proactively outline existing data gaps in chemicals of concern that are "Candidates" for "High Priority" listing before the "Prioritization" process to generate these data in a timely manner to ensure it meets its obligation to develop scientifically based public health-protective decisions around hazard and risk.**

As highlighted in point #3, due to the statutory deadlines that are mandated under TSCA that risk evaluations must be completed in 3-3.5 years after a chemical is listed as "High Priority," EPA must explicitly outline the necessary studies and data it requires before the "Prioritization" process to address the data gaps it identifies to ensure it meets its obligation to develop and implement scientifically based public health-protective decisions around hazard and risk.

It is therefore essential that moving forward the Agency proactively outlines existing data gaps in chemicals of concern to facilitate the external development and design of studies it believes are most critical to decision making to generate these data in a timely manner; this is consistent with other programs such as Canadian and European programs.[17,18] We recommend that EPA must proactively revise the list of 100-150 chemicals that are "Candidates" for high-priority listing (pre-prioritization) and risk evaluations from the 2014 TSCA Work Plan.[19] Those chemicals on the Work Plan list yet to be selected for risk evaluations under TSCA should then be included as they have previously been screened for hazard and exposure and the Agency has already determined that they present significant concerns to human health.

[17] Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). (2006). In: *COM 2003/0644 Final.* European Union.
[18] Canada Environmental Protection Act - Chemical Management Plan. (2006). In: *SC 1999, c 33.* Canada.
[19] US Environmental Protection Agency. (2014). TSCA Work Plan for Chemical Assessments: 2014 Update. Available: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/tsca-work-plan-chemical-assessments-2014-update

TSCA sections 8(a), 8(c) and 8(d) reporting of health and safety studies should be required immediately once a chemical is included on the on the pre-prioritization candidate list. This proactive process would ensure EPA sufficient time to order testing and the development of the necessary studies to generate these data and fill critical data gaps before these chemicals undergo risk evaluation.

EPA, therefore, needs to determine the completeness of the database on every of the 100-150 chemicals that are "Candidates" for high priority chemical listing it intends to evaluate under TSCA and exercise its full authorities to fill the critical data gaps the Agency believes are required to decision making under TSCA sections 4, 8, 10 and 11 and make information public under section 14. EPA should also make the data developed or submitted under these rules or orders publicly available. TSCA section 14 clearly states that health and safety studies are not confidential business information (CBI) and thus are not protected from disclosure. EPA should also provide a public summary characterizing the data and its completeness for each chemical and relevant mixtures.