

DECLARATION OF MARIA DOA

I, Maria J. Doa, declare and state as follows:

1. I am the Senior Director, Chemicals Policy, at the Environmental Defense Fund. I hold a Bachelor of Science in chemistry and a Ph.D. in organic chemistry. Before joining Environmental Defense Fund, I worked at the U.S. Environmental Protection Agency (EPA), where for twenty-two years I held various leadership positions focused on the regulation of toxic chemicals and the management of the application of scientific research and data to regulatory decisions. A copy of my CV is attached as **Exhibit 1**.

2. The Environmental Defense Fund is a non-profit organization that works to protect the public from toxic chemicals, including chemicals that are reviewed and regulated under the Toxic Substances Control Act (TSCA).

3. Before joining the Environmental Defense Fund in November 2021, I held leadership positions at EPA, most recently as the director of the Science Policy Division in EPA's Office of Research and Development. The Science Policy Division coordinates scientific advice on regulatory activities and coordinates science and technology issues, such as public access to data, across the agency.

4. Before I joined the Office of Research and Development in 2018, I served for seven years as Director of the Chemical Control Division in the Office

of Chemical Safety and Pollution Prevention. The Chemical Control Division was responsible for the development and implementation of regulations and programs for the testing, data development and collection, and risk management functions for most industrial, commercial, and consumer chemicals subject to TSCA.

5. As part of my role as the Director of the Chemical Control Division, I led the development of proposed TSCA risk management rules for several existing chemicals. I worked closely with the Risk Assessment Division which developed the risk assessments that were the basis for determining whether the risks presented by a chemical were unreasonable. These risk assessments were also the basis for determining the most effective risk management requirement(s) to mitigate the unreasonable risks presented by the chemical.

6. Under TSCA, an accurate evaluation of risks is fundamental to determining the most effective way to mitigate that risk, because EPA's risk management regulations for a chemical are based on EPA's determination that the chemical presents unreasonable risk and the magnitude of risk that EPA finds. Section 6 of TSCA requires EPA to conduct risk evaluations "to determine whether a chemical substance presents an unreasonable risk of injury to health or the environment, without consideration of costs or other nonrisk factors, including an unreasonable risk to a potentially exposed or susceptible subpopulation identified as relevant to the risk evaluation by the Administrator, under the

conditions of use.” 15 U.S.C. § 2605(b)(4)(A). EPA is required to use the “best available science” in developing its risk evaluations. 15 U.S.C. § 2625(h).

7. Simplistically, “risk” is a function of estimated or assessed hazard and exposure. *See* 15 U.S.C. § 2605(b)(4)(F). Hazard is an assessment of the potential harms caused by the chemical and the levels at which the harms occur. And exposure is an assessment of how much of a chemical an individual (or ecological receptor) encounters. Integrated together, those then inform how likely a harmful outcome is anticipated to occur.

8. If EPA determines that a chemical substance does present unreasonable risk, then it must issue risk management rules to regulate the chemical substance. 15 U.S.C. § 2605(a). Specifically, EPA must “apply one or more” risk management rules “to the extent necessary so that the chemical substance or mixture no longer presents such [unreasonable] risk.” *Id.* Thus, if EPA underestimates the risk in the risk evaluation phase, it likely cannot effectively manage risk, either because: (1) it will improperly conclude that the chemical substance does not present unreasonable risk, and not issue a risk management rule; or (2) having found unreasonable risk, but underestimated the magnitude of the true risk, it will issue an under-protective risk management rule that fail to ensure that the substance no longer presents unreasonable risk.

9. Consistent with the best available science mandate, an evaluation that accurately represents the risks presented by the chemical requires consideration of the type of harm(s) caused by the chemical, the toxicity level of the chemical (how much exposure to the chemical is expected to cause that harm), and a picture of the ways an individual is exposed to the chemical and the magnitude of that exposure. This picture should include all the ways the general population, more highly exposed or susceptible subpopulations, and the environment are exposed during the manufacture, processing, distribution in commerce, use and disposal of the chemical—that is, from the sum of its conditions of use. This picture must also reflect that an individual may be exposed via multiple conditions of use of the chemical and through multiple pathways of exposure, including by inhalation, drinking water, and dermal contact. Finally, this picture must reflect that exposure can come from multiple environmental sources, including the air, water, and land. It is the consideration of the sum of the exposures during the lifecycle of the chemical that is the basis of an accurate determination of the types and magnitude of the risks the chemical presents and thus of whether the chemical presents an unreasonable risk.

10. A factual characterization of the types and magnitude of the unreasonable risk is also necessary for EPA to identify and propose the most effective risk management requirement(s) to mitigate the unreasonable risks. If

there is not an accurate picture of the sum of the types and magnitudes of unreasonable risks presented by a chemical, then any risk management requirement chosen may fail to mitigate the actual risks, particularly for the specific subpopulations at the greatest risk.

11. An accurate risk evaluation requires EPA to identify all the conditions of use and to assess the exposures associated with those conditions of use. Failure to consider all conditions of use will necessarily underestimate exposure and, thus, underestimate risk. By analogy, if someone was intent on limiting their consumption to 2,000 calories per day, but only measured their calorie intake at lunch and dinner, while ignoring breakfast and between-meal snacks, they would necessarily understate their true caloric intake and stand a good chance of overconsuming and failing to meet their goal.

12. Given the need to evaluate all conditions of use, sources of exposure associated with a particular condition of use should not be excluded simply because the condition of use is regulated under another environmental statute. The other statute, unlike TSCA, may require the consideration of non-risk factors as well as risk factors in setting a regulatory standard. This could result in a less protective standard than would be warranted under TSCA. If the other statute is an environmental media-specific statute such as the Clean Air Act, it may require a reduction of risk while still allowing some level of exposure. If EPA were to

exclude consideration of exposures from industrial releases because they are subject to Clean Air Act regulation, this would mean that EPA is calculating risk as though the remaining air exposure to a chemical is zero rather than the actual level experienced by an individual. Artificially estimating the exposure level as zero for a particular pathway of exposure underestimates the exposure by that pathway, e.g., air inhalation, and the overall exposure and risk experienced by the individual.

13. Additionally, treating the risk from each source of exposure (or each condition of use) in isolation of the risks from other sources of exposure is equivalent to considering the calories from each meal of the day as if they were the only calories consumed that day. Someone intent on limiting their consumption to 2,000 calories per day would not conclude that if they were to consume 1,300 calories at breakfast, 1,800 calories at lunch and 1,500 calories at dinner, their total consumption for the day would be less than 2,000 calories because each meal consisted of fewer than 2,000 calories. Instead, they would aggregate the total calories consumed for the day.

14. Similarly, exposures to a chemical should not be artificially separated and isolated by individual condition of use with each separately compared to the chemical's toxicity levels. It is the aggregate of the exposures, rather than the condition of use-specific exposures, that should be compared to the chemical's toxicity levels and used to determine the risk faced by individuals. EPA is likely to

come to a different conclusion on whether a chemical presents an unreasonable risk if it were to consider the exposure and risk from each condition of use in isolation from the other conditions of use instead of considering the aggregate exposures and risks from all the conditions of use of the chemical.

15. Further, in the calories example, the decision an individual would make on how much to consume in the following days is likely to be different if they believed they had only consumed a maximum of 1,800 calories, which is less than their 2,000 calories limit, than if they understood they had actually consumed 4,600 calories. Similarly, basing an unreasonable risk determination on a consideration of the aggregate exposure and risk rather than the exposure and risk of individual conditions of use would often lead to different decisions on the most effective and appropriate risk management restrictions.

16. Considering the aggregate of all exposures is especially important for those subpopulations who are more susceptible to the effects of the chemical, such as infants and pregnant women. Underestimating the exposures to a chemical that causes reproductive and developmental harms, such as acrylonitrile and 1,2-dichloroethane—chemicals that are either undergoing, or will soon undergo, risk evaluation—by artificially isolating individual conditions of use may lead to risk management restrictions that do not mitigate the unreasonable risk. Such a decision

could leave in place exposures of the toxic chemical that adversely affect the normal development of the infant or harm the pregnant woman.

17. An aggregate assessment of exposures is also necessary for those subpopulations such as fenceline communities who are often more highly exposed than the general population. Members of a fenceline community may be exposed to a chemical from multiple conditions of use of the chemical. For example, they may be exposed to releases from one or more industrial facilities, some of which manufacture the chemical, others which process it, and still others where the chemical is disposed. Members of the community may also be additionally exposed because they work at one of the facilities and/or may be exposed to the chemical in products they use at home. The chemical may be used at small businesses within the community, providing another source of exposure to their neighbors. All of these—manufacture, processing, use of consumer products, etc.—are different conditions of use that contribute to the total exposure faced by members of the community.

18. Further, fenceline communities are often exposed to multiple chemicals that are produced and released together. Some of these may cause the same harm, such as cancer, and even attack the same part of the body. For example, vinyl chloride and 1,2-dichloroethane are both associated with liver cancer and are released together by the same facilities and by multiple facilities

that are close by. Members of the community exposed to one of these chemicals may be more susceptible to liver cancer based on their co-exposure to the second chemical. Failing to consider the aggregate and cumulative exposures for each of these chemicals could even more significantly underestimate the actual risk of liver cancer.

19. The Revised TSCA Risk Evaluation Rule (Revised Rule), issued by EPA in May 2024, contains several important provisions that conform to the statutory text and the best available science for conducting risk evaluations.

20. EPA is correct in: including all conditions of use in risk evaluations, 40 C.F.R. § 702.(b)(4); using a holistic approach to determine if a chemical presents an unreasonable risk, rather than assessing individual conditions of use, 40 C.F.R. § 702.39(f); including pathways of exposure subject to other environmental statutes, 40 C.F.R. § 702.39(d)(9); and recognizing that “overburdened communities” are potentially exposed and susceptible subpopulations, 40 C.F.R. § 702.33. These provisions are consistent with TSCA’s requirement to use the best available science and are representative of real-world scenarios, preventing underestimation of risks.

21. In contrast, assessing the risks of individual conditions of use separately (as was authorized under the prior risk evaluation regulations and done in previously completed risk evaluations) does not scientifically answer the

question of whether a chemical presents an unreasonable risk because it is not representative of—nor even approaches—the real-world risks presented by the chemical. Considering each condition of use and source of exposure in isolation presents a false picture that underestimates exposures to and risks from a chemical because this approach treats each exposure as if the other exposures do not exist. This is neither a fair representation of real life nor sound science. Thus, EPA’s rejection of these prior approaches benefits people who are exposed to chemicals that are subject to TSCA risk evaluations.

22. The protections in the Revised Rule are important for fenceline communities in areas where the authorities have allowed large industrial polluters to locate their facilities. For example:

- a. I have reviewed EPA’s Toxics Release Inventory (TRI) data for Freeport, Texas (Zip Code: 77541), which shows dozens of industrial facilities, particularly petrochemical facilities, located in close proximity to one another that release large volumes of highly toxic chemicals. They release chemicals currently undergoing risk evaluation, like 1,3-butadiene, 1,2-dichloroethane, and formaldehyde, and chemicals that are likely to be

designated as high priority and undergo risk evaluation in the future, like vinyl chloride, acetaldehyde, and acrylonitrile.¹

- b. Similarly, EPA's TRI data indicates that Beaumont, Texas, has dozens of large polluting facilities that collectively release millions of pounds of toxic chemicals each year, including 1,3-butadiene, acetaldehyde, acrylonitrile, and formaldehyde. Many of these chemicals are released by multiple facilities.
- c. The Eastman Chemical Plant in Kingsport, TN (Zip Code 37660)² alone releases millions of pounds of toxic pollutants each year, including chemicals like 1,3-butadiene and acetaldehyde. In addition to the Eastman Chemical Plant, EPA's TRI data shows there are millions of pounds of annual releases from other nearby facilities.
- d. These protections in the Revised Rule also benefit communities living near pulp and paper mills, like the International Paper in Prattville, Alabama (Zip Code 36067).³ This facility releases millions of pounds of toxic chemicals each year, including formaldehyde and acetaldehyde.

¹ EPA is beginning the process to prioritize these toxic chemicals for risk evaluation. If EPA designates a chemical high priority, EPA must conduct a risk evaluation for the chemical. In my judgment, given the toxicity of these chemicals, and the magnitude of releases reported to EPA, they "may present" an unreasonable risk of injury to health or the environment as EPA has applied that term in prior risk prioritizations and thus are likely to be designated high priority.

² <https://echo.epa.gov/detailed-facility-report?fid=110000574423>

³ <https://echo.epa.gov/detailed-facility-report?fid=110011734935>

- e. Similarly, the provisions of the Revised Rule protect people living in Ottawa, IL (Zip Code: 61350), where there is a large plastics manufacturer that releases 1,3 butadiene and acrylonitrile, among other toxic chemicals.⁴

23. These protections are also essential for other overburdened communities who face greater exposures than the general population even though they may be far from large industrial polluters, like Indigenous communities in the Arctic. Some of the chemicals undergoing risk evaluation, such as tris(2-chloroethyl) phosphate (TCEP) and octamethylcyclotetrasiloxane (D4), are persistent and mobile toxic chemicals that can harm Indigenous communities in the Arctic. Persistent chemicals can take months to years to break down in the environment, and so releases of such chemicals will build up in the environment, increasing their potential exposure to humans and wildlife. Persistent, mobile chemicals are known to be transported by environmentally leapfrogging from the warmer climates where they are released to the Arctic where they are present in the Arctic air, water, land, plants and animals. This presents a long-term source of exposure to Indigenous communities in the Arctic.

24. In sum, many provisions of the revised risk evaluation rule, *see supra* ¶ 20, realign the procedures for TSCA risk evaluations with the best available science and TSCA's mandates. These provisions serve to protect people and

⁴ <https://echo.epa.gov/detailed-facility-report?fid=110000437661>

communities throughout the country who are exposed to and harmed by toxic chemicals, including the specific communities identified above. A ruling vacating or weakening the rule would lead to less accurate risk evaluations that are likely to understate risk, thereby depriving people of the protections to which they are entitled under TSCA.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on June 21, 2024.

A handwritten signature in black ink, appearing to read "Maria J. Doa". The signature is fluid and cursive, with the first name "Maria" and last name "Doa" clearly distinguishable.

Maria J. Doa, Ph.D.