July 15, 2026

Via Regulations.gov
Douglas Troutman
Assistant Administrator
Office of Chemical Safety and Pollution Prevention
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Certain New Chemicals; Receipt and Status Information for February and March 2026 Docket No. EPA-HQ-OPPT-2026-1387

Dear Assistant Administrator Troutman:

We write to express our opposition to the pending request for the Environmental Protection Agency ("EPA") to approve 3-Hexene, 1,1,1,2,2,5,5,6,6,6-decafluoro-, (3E)- (CAS RN 1256353-26-0) ("Opteon 2P50"), which is a per- and polyfluoroalkyl substance ("PFAS"). The pre-manufacture notice ("PMN") was published in EPA's *Certain New Chemicals; Receipt and Status Information for February and March 2026*, 91 Fed. Reg. 35,976, 35,979 (June 15, 2026): 3-Hexene, 1,1,1,2,2,5,5,6,6,6-decafluoro- , (3E) (P–26–0071). Approval of Opteon 2P50 as a New Chemical Substance ("NCS") would expand a class of chemicals that is both highly persistent and hazardous and already contaminates the drinking water supplies for more than 170 million people and the blood of nearly everyone in the country.[1] The NCS is intended to be used as a dielectric fluid to cool electric equipment, a use that will result in environmental releases. The collection of files submitted with PMN, collectively referred to as the "PMN files," reveal unreasonable health and environmental risks from Opteon 2P50.

I. TSCA Prohibits EPA From Approving Chemicals That Present Unreasonable Risk

TSCA Section 5 requires EPA to review the risks posed by new chemicals before they come to market and to restrict or prohibit the manufacturing and use of any new chemical that "may present" or "presents" an unreasonable risk to human health or the environment.[2] In

[1] Jasmine Laws, *Millions More Americans Are Being Exposed to Contaminated Water*, Newsweek (Aug. 21, 2025), https://www.newsweek.com/drinking-water-contamination-pfas-millions-more-affected-2116966; Julianne Cook Botelho et al., *Per- and Polyfluoroalkyl Substances (PFAS) Exposure in the U.S. Population: NHANES 1999-March 2020*, 270 Env't Rsch. Art. No. 120916, *6 (2025), https://pmc.ncbi.nlm.nih.gov/articles/PMC12082571/pdf/nihms-2077469.pdf.

[2] 15 U.S.C. § 2604(e), (f); *see also* EPA, *PFAS Strategic Roadmap: EPA's Commitments to Action 2021–2024*, at 10–11 (Oct. 2021) ("PFAS Roadmap"), https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf ("Where unreasonable risks are identified as part of the [new chemical] review process, EPA must mitigate those risks before any manufacturing activity can commence.").

making those risk determinations, EPA must consider the chemical's risks to "potentially exposed or susceptible subpopulation[s]," including fenceline communities, workers, and other groups that experience greater risks than the general population due to their greater exposures, greater susceptibility to harm, or both.[3]

If EPA finds that a new chemical presents an unreasonable risk, it must prohibit or restrict the manufacturing, processing, distribution, and use of the chemical "to the extent necessary to protect against such risk."[4] If a new chemical or use "may present" unreasonable risk, or if EPA lacks sufficient information to reasonably evaluate the chemical's effects, EPA must issue an order that "prohibit[s] or limit[s]" the chemical's production and use "to the extent necessary to protect against an unreasonable risk . . . while any required information is being developed."[5]

II. Opteon 2P50 Presents Unreasonable Risk

A. PFAS, As a Class, Present Severe Risks to Health and the Environment

"For far too long, communities across the United States have been suffering from exposure to PFAS . . . ."[6] PFAS do not occur naturally, and less than a century ago, they did not exist.[7] Today, they are virtually inescapable, contaminating the drinking water supplies for up to 200 million people across the country[8] and the blood of more than 98% of people tested in the United States.[9] PFAS can also cross the placenta, and they have been detected in umbilical cord blood, contaminating fetuses in the womb.[10] As a PFAS, Opteon 2P50 shares many of the problematic properties of this broad chemical class.

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[3] 15 U.S.C. § 2604(a)(3) (requiring EPA to assess new chemicals' risks to potentially exposed or susceptible subpopulations); 15 U.S.C. § 2602(12) (defining potentially exposed or susceptible subpopulation).
[4] *Id.* § 2604(f)(1).
[5] *Id.* § 2604(e).
[6] PFAS Roadmap at 1.
[7] EPA, *Our Current Understanding of the Human Health and Environmental Risks of PFAS*, https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas (last updated Apr. 21, 2026).
[8] David Q. Andrews & Olga V. Naidenko, *Population-Wide Exposure to Per- and Polyfluoroalkyl Substances from Drinking Water in the United States*, 7 Env't Sci. & Tech. Letters 931, 934 (2020), https://pubs.acs.org/doi/10.1021/acs.estlett.0c00713.
[9] *See* Antonia M. Calafat et al., *Polyfluoroalkyl Chemicals in the U.S. Population: Data from the National Health and Nutrition Examination Survey (NHANES) 2003–2004 and Comparisons with NHANES 1999–2000*, 115 Env't Health Persps. 1596, 1597, 1600 (2007), https://pmc.ncbi.nlm.nih.gov/articles/PMC2072821/; Julianne Cook Botelho et al. 2025.
[10] Tom Perkins, *Forever Chemicals' Detected In All Umbilical Cord Blood in 40 Studies*, The Guardian (Sept. 23, 2022), https://www.theguardian.com/environment/2022/sep/23/forever-chemicals-found-umbilical-cord-blood-samples-studies ("Toxic PFAS chemicals were detected in every umbilical cord blood sample across 40 studies conducted over the last five years," spanning "nearly 30,000 samples.").

Based on its PFAS status alone, EPA should conclude that Opteon 2P50 PFAS "present[] . . . unreasonable risk of injury to health or [the] environment."[11] All PFAS contain one or more carbon-fluorine bonds, which is the strongest single bond in organic chemistry.[12] This "common structural feature . . . makes [PFAS] highly problematic,"[13] since once they are released to the environment, PFAS can persist for decades or longer, increasing the risk of human or environmental exposures.[14] While PFAS vary in size, structure, and chemical composition, "all PFAS either [are] extremely persistent in the environment and biota or partially transform into extremely persistent PFAS."[15] PFAS are also often highly mobile, meaning they spread quickly throughout the environment once released and are difficult to capture and remediate.[16]

Many PFAS also bioaccumulate, or build up, in people and animals, meaning even low-level releases can result in significant long-term exposures and harm.[17] Because PFAS accumulate in living organisms faster than they can be eliminated, their concentrations often increase as they move up the food chain, resulting in exposure to high levels of PFAS from the consumption of contaminated fish or livestock.[18]

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[11] 15 U.S.C. § 2604(f).
[12] Teresa A. Unzner & Thomas Magauer, *Carbon–Fluorine Bond Activation for the Synthesis of Functionalized Molecules*, 56 Tetrahedron Letters 877 (2015), https://www.sciencedirect.com/science/article/pii/S0040403915000489.
[13] Ian T. Cousins et al., *The High Persistence of PFAS Is Sufficient for Their Management as a Chemical Class*, 22 Env't Sci. 2307, 2308 (2020), https://pubs.rsc.org/en/content/articlelanding/2020/em/d0em00355g.
[14] Ian T. Cousins et al., *Why Is High Persistence Alone a Major Cause of Concern*, 21 Env't Sci. 781, 785 (2019), https://pubs.rsc.org/en/content/articlelanding/2019/em/c8em00515j.
[15] Carol F. Kwiatkowski et al., *Scientific Basis for Managing PFAS as a Chemical Class*, 7 Env't Sci. & Tech. Letters 532, 535 (2020), https://pubs.acs.org/doi/10.1021/acs.estlett.0c00255; Simona Andreea Bălan et al., *Regulating PFAS as a Chemical Class Under the California Safer Consumer Products Program*, 129 Env't Health Persps. Art. No. 25001, *2 (2021), https://pmc.ncbi.nlm.nih.gov/articles/PMC7888260/.
[16] John A. Simon, *PFAS Experts Symposium: Statements on Regulatory Policy, Chemistry and Analytics, Toxicology, Transport/Fate, and Remediation for Per- And Polyfluoroalkyl Substances (PFAS) Contamination Issues*, 29 Remediation: J. Env't Cleanup Costs, Tech., & Techs. 31 (2019), https://doi.org/10.1002/rem.21624; ECHA Comm. for Risk Assessment (RAC), *Opinion on an Annex XV Dossier Proposing Restrictions on Per- and Polyfluoroalkyl Substances (PFAS),* at 12 (Mar. 2, 2026) ("ECHA 2026"), https://echa.europa.eu/documents/10162/d6aac737-e665-cbae-58c8-17780de44bd5 ("Once present in the environment, the removal of PFAS from surface water, groundwater, soil, sediment and biota is technically extremely difficult and very costly, if at all possible.").
[17] Maria-Eleni Dimitrakopoulou et al., *Comprehensive Analysis of PFAS Presence from Environment to Plate*, 8 NPJ Sci. Food Art. No. 80, * 4 (2024), https://www.nature.com/articles/s41538-024-00319-1 ("PFAS compounds possess a remarkable ability to bioaccumulate in organisms . . . .").
[18] *See id.*

PFAS are also often highly toxic. The human health risks associated with PFAS are well-established and have been widely recognized by international scientific organizations,[19] federal and state regulatory agencies,[20] and other leading scientific bodies.[21] Many PFAS are associated with "significant and diverse" adverse health effects that "include (but are not limited to): cancer and effects on the liver (*e.g.,* liver cell death), growth and development (*e.g.,* low birth weight), hormone levels, kidneys, immune system, lipid levels (*e.g.,* high cholesterol), nervous system, and reproduction."[22] Moreover, these harms do not appear solely at high levels of exposure. Many PFAS present health risks at the lowest measurable exposure levels, and recent studies link adverse health effects in both humans[23] and wildlife[24] to PFAS exposure levels occurring in the environment. As the European Chemicals Agency's Committee for Risk Assessment recently found, "[w]ith the constantly increasing concentrations of PFAS in the environment due to their

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[19] *See* U.N. Env't Programme (UNEP), *Report of the Persistent Organic Pollutants Review Committee on the Work of its Second Meeting* add., *Risk Profile on Perfluorooctane Sulfonate,* at 25–26, 29 (Nov. 21, 2006), https://chm.pops.int/TheConvention/POPsReviewCommittee/Reports; UNEP, *Report of the Persistent Organic Pollutants Review Committee on the Work of its Twelfth Meeting* add., *Risk Profile on Pentadecafluorooctanoic Acid (PFOA, Perfluorooctanoic Acid), Its Salts and PFOA-related Compounds,* at 24–26 (Oct. 13,2016), https://chm.pops.int/TheConvention/POPsReviewCommittee/Reports.

[20] Agency for Toxic Substances & Disease Registry (ATSDR), *Toxicological Profile for Perfluoroalkyls*, at 4–21, 26–29 (May 2021) ("PFAS Tox. Profile"), https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf; Off. of Env't Health Hazard Assessment, Cal. Env't Protection Agency, *Perfluorooctanoic Acid and Perfluorooctane Sulfonic Acid in Drinking Water* (Mar. 2024), https://oehha.ca.gov/sites/default/files/media/downloads/air/public-health-goal-document/pfoapfosphgfinaldraft040524.pdf.

[21] Nat'l Acads. of Sci., Eng'g, & Med., *Guidance on PFAS Exposure, Testing, and Clinical Follow-Up*, at 6–8 (Nat'l Acads. Press 2022), https://nap.nationalacademies.org/catalog/26156/guidance-on-pfas-exposure-testing-and-clinical-follow-up (click "Download Free PDF"); *see also* Arlene Blum et al., *The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs)*, 123 Env't Health Persps. A107, A107 (2015), https://doi.org/10.1289/ehp.1509934 (releasing statement of more than 250 scientists expressing "concern[] about the production and release into the environment of an increasing number of [PFAS]").

[22] EPA, PFAS National Primary Drinking Water Regulation Rulemaking, 88 Fed. Reg. 18638, 18643 (proposed Mar. 29, 2023).

[23] *See* Guoqi Yu et al., *Environmental Exposure to Perfluoroalkyl Substances in Early Pregnancy, Maternal Glucose Homeostasis and the Risk of Gestational Diabetes: A Prospective Cohort Study*, 156 Env't Int'l Art. No. 106621, *8 (2021), https://doi.org/10.1016/j.envint.2021.106621; Rahel L. Birru et al., *A Pathway Level Analysis of PFAS Exposure and Risk of Gestational Diabetes Mellitus*, 20 Env't Health Art. No. 63, 8–12 (2021), https://doi.org/10.1186/s12940-021-00740-z.

[24] *See* Carolyn A. Sonter et al., *Biological and Behavioral Responses of European Honey Bee (*Apis Mellifera*) Colonies to Perfluorooctane Sulfonate Exposure*, 17 Integrated Env't Assessment & Mgmt. 673, 679–80 (2021), https://doi.org/10.1002/ieam.4421.

persistence and ongoing emissions, the exposure of humans and the environment to these substances will inevitably lead to negative effects."[25]

Because many PFAS have common effects, people who are exposed to multiple PFAS may face greater risks of harm from these co-exposures. As EPA has explained, "PFAS have dose additive impacts."[26] Studies have shown that exposure to PFAS mixtures alters critical biological processes in children and young adults that are associated with an increased risk of developmental disorders, cardiovascular disease, and many types of cancer.[27] Recent human birth cohort studies also report associations between exposures to multiple PFAS during pregnancy and adverse health outcomes, with co-exposures to multiple PFAS associated with even greater risks of gestational diabetes and altered glucose levels during pregnancy, altered levels of thyroid hormones in pregnant people and in newborns, and liver injury in children.[28]

In addition to their human health risks, PFAS releases threaten widespread environmental harm. PFAS have been detected in more than 600 different animal species,[29] and a "myriad of studies have found harm to wildlife from PFAS contamination."[30] Long-term PFAS exposures are linked to the disruption of metabolic, immune, and endocrine function and to reduced reproduction across a broad range of species, "pos[ing] an additional risk to species already negatively impacted by . . . climate change, harvesting[,] habitat degradation," and other

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[25] ECHA 2026 at 12.
[26] 88 Fed. Reg. at 18649–50.
[27] Jesse A. Goodrich et al., *Metabolic Signatures of Youth Exposure to Mixtures of Per- and Polyfluoroalkyl Substances: A Multi-Cohort Study*, 131 Env't Health Persps. Art. No. 27005, 8 (2023), https://doi.org/10.1289/ehp11372.
[28] Guoqi Yu et al. 2021 at 1; Blanca Sarzo et al., *Maternal Perfluoroalkyl Substances, Thyroid Hormones, and* DIO *Genes: A Spanish Cross-sectional Study*, 55 Env't Sci. & Tech. 11144, 11150–51 (2021), https://pubs.acs.org/doi/10.1021/acs.est.1c01452; Arash Derakhshan et al., *Association of Per- and Polyfluoroalkyl Substances with Thyroid Homeostasis During Pregnancy in the SELMA Study*, 167 Env't Int'l Art. No. 107420, 5 (2022), https://doi.org/10.1016/j.envint.2022.107420; Richard Christian Jensen et al., *Higher Free Thyroxine Associated with PFAS Exposure in First Trimester. The Odense Child Cohort*, 212 (Pt. D) Env't Rsch. Art. No. 113492, 8 (2022), https://doi.org/10.1016/j.envres.2022.113492; Jianqiu Guo et al., *Umbilical Cord Serum Perfluoroalkyl Substance Mixtures in Relation to Thyroid Function of Newborns: Findings From Sheyang Mini Birth Cohort Study,* 273 Chemosphere Art. No. 129664 (2021), https://doi.org/10.1016/j.chemosphere.2021.129664; Nikos Stratakis et al., *Prenatal Exposure to Perfluoroalkyl Substances Associated With Increased Susceptibility to Liver Injury in Children*, 72 Hepatology 1758, 2 (2020), doi:10.1002/hep.31483.
[29] Env't Working Gr. ("EWG"), *EWG Study: Humans Serve As Sentinels For 'Forever Chemicals' Harm to Wildlife Health* (Sept. 26, 2023), https://www.ewg.org/news-insights/news-release/2023/09/ewg-study-humans-serve-sentinels-forever-chemicals-harm-wildlife.
[30] Am. Bird Conservancy et al., *Citizen Petition to the U.S. Environmental Protection Agency Seeking Cancellation and Suspension of Several Existing Registrations of Pesticide Ingredients that are PFAS Chemicals and Requiring Rulemaking Regarding PFAS Chemical Assessment and PFAS in Pesticide Containers*, at 59 (2025), https://www.epa.gov/system/files/documents/2025-07/pfas_pesticides-petition.pdf.

stressors.[31]

The unique characteristics of the PFAS class render many of the EPA's ordinary risk management tools inadequate to assess and prevent their unreasonable risk. PFAS are so persistent, toxic, and mobile that almost any release to the environment, intended or unintended, presents at least the potential for unreasonable risk.[32] Given the "significant health concerns" associated with the PFAS class, EPA has developed a *Framework for TSCA New Chemicals Review of PFAS Premanufacture Notices (PMNs) and Significant New Use Notices (SNUNs)*, which is designed to "guide EPA's review of PFAS under TSCA Section 5" and "to stop the environmental release of PBT PFAS at the source."[33] As described in greater detail in prior comments, while that Framework rightly acknowledges the problems posed by PFAS, it does not go far enough to fully eliminate their unreasonable risks.[34] Instead, the most effective way of ensuring that new PFAS do not present unreasonable risk, as required by TSCA, is to keep them out of commerce.

B. The Limited Information Available About Opteon 2P50 Raises Particular Concerns About Its Health and Environmental Risks

EPA should not be exacerbating a well-documented PFAS contamination crisis by approving any new PFAS for widespread use.[35] TSCA mandates that EPA protect the public from a chemical's unreasonable risks. While the PMN submitter asserts that the chemical can help data centers achieve a "90% reduction in cooling energy . . . [and] nearly eliminate water use,"[36]

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[31] Catharina Vendl et al., *Profiling Research on PFAS in Wildlife: Systematic Evidence Map and Bibliometric Analysis*, 5 Ecological Solutions & Evidence Art. No. e12292, 2 (2024), https://besjournals.onlinelibrary.wiley.com/doi/epdf/10.1002/2688-8319.12292.

[32] *See* ECHA 2026 at 16 ("PFAS should be treated as non-threshold substances for the purpose of risk assessment in a similar manner to PBT/vPvB substances whereby releases are taken to be a proxy for risk and should therefore be minimized.").

[33] EPA, *Framework for TSCA New Chemicals Review of PFAS Premanufacture Notices (PMNs) and Significant New Use Notices (SNUNs*), at 2, 3, 12 (June 28, 2023), https://www.epa.gov/system/files/documents/2023-06/PFAS%20Framework_Public%20Release_6-28-23_Final_508c.pdf.

[34] *See* Alaska Cmty. Action on Toxics (ACAT) et al., *Comments on Certain New Chemicals; Receipt and Status Information for May 2023*, Docket No. EPA–HQ–OPPT–2023–0061, at 5–11 (July 21, 2023).

[35] USGS, *Tap Water Study Detects PFAS 'Forever Chemicals' Across the US* (July 5, 2023), https://www.usgs.gov/news/national-news-release/tap-water-study-detects-pfas-forever-chemicals-across-us.

[36] Chemours, *Overview-Summary Public*, PMN P-26-0071, at 12, ("Opteon Overview Summary") https://chemview.epa.gov/chemview/proxy?filename=ncn%2F20260324010019%2FP-26-0071%2FP-26-0071_2.zip&mediaType=zip (All documents cited from the PMN submissions are available on ChemView, https://chemview.epa.gov/chemview/, by searching for the PMN number, clicking the link under click on "Advanced Search" in the upper left side of the

Opteon 2P50 and its degradation products present risks to human health and the environment that are not adequately disclosed in the PMN files. Opteon 2P50 belongs to a subcategory of chemicals known as hydrofluoroolefins (HFOs).[37] HFOs are fluorinated gases that degrade into other toxic shorter-chain PFAS and persist in the environment.[38] Amongst other concerns, this chemical was developed and is being marketed by Chemours,[39] a company with a documented history of violations that resulted in the release of PFAS, including to drinking water.[40]

The available data on the health harms of Opteon 2P50 are limited, and EPA must ensure it accounts for uncertainties in the database. Toxicity studies of Opteon 2P50 on mammals are only available in Sprague-Dawley rats, mainly females, which are known to exhibit lower toxicity to PFAS compared to primates and humans.[41] There is no toxicokinetic data available for Opteon 2P50 to assert that its elimination rate in rats would not exhibit similar patterns to that of other PFAS, where the elimination rate in female rats is thousands of times higher than in humans.[42] Additionally, the PMN files include a Properties, Uses, Storage, and Handling (PUSH) bulletin that cites a Workplace Environmental Exposure Level ("WEEL") of 200 ppm for Opteon 2P50.[43] This value was derived to represent "health-based, chemical-specific occupational exposure limits that represent airborne concentrations to which nearly all workers may be repeatedly exposed day after day over a working lifetime without experiencing adverse health effects."[44]

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webpage, enter the PMN number (P-26-0071) under the "Chemical Name" or "Chemical Identifier". Select the PMN link when it appears as a search result. Click "Generate Results". Select information that appears under "Information Submitted to the EPA" and click on "New Chemical Notice". Download a zip file dated Mar. 20, 2026 with all the PMN submissions and select document title.)

[37] Chemours, Opteon 2P50 Developmental Dielectric Heat Transfer Fluid, Properties, Uses, Storage, and Handling, P-26-0071, at 3 ("Opteon 2P50 PUSH Bulletin").

[38] Maria de los Angeles Garavagno, Trifluoroacetic *Acid: Toxicity, Sources, Sinks and Future Prospects*, 16 Sustainability Art. No. 2382 (2024), https://doi.org/10.3390/su16062382.

[39] While the submitter of the NCS is redacted, Chemours does manufacture and market Opteon 2P50, and Chemours is mentioned several times in the PMN files. *See* Chemours, *Chemours Announces Development of New Specialty Fluid for Two-Phase Immersion Cooling: Opteon 2P50* (July 31, 2023), https://www.chemours.com/en/news-media-center/all-news/press-releases/2023/chemours-announces-development-of-new-specialty-fluid-for-two-phase-immersion-cooling-opteon-2p50.

[40] EPA, *EPA Obtains Over $450 Million In Penalties and Relief in Agreement with Chemours to Settle Claims Over PFAS Pollution in Three States* (June 24, 2026), https://www.epa.gov/newsreleases/epa-obtains-over-450-million-penalties-and-relief-agreement-chemours-settle-claims.

[41] ECHA, *Welcome to ECHA Chem*, ("ECHA Dossier for 1256353-26-0"), https://chem.echa.europa.eu/100.378.145/dossier-view/000e9676-03a4-414f-bde5-a42a6586373d/839d6e14-d93d-44ef-9d90-84e02c9b0391_839d6e14-d93d-44ef-9d90-84e02c9b0391?searchText=1256353-26-0; ATSDR, *Toxicological Profiles for Perfluoroalkyls*, at 628.

[42] *Id.*

[43] PMN P-26-0071, Opteon 2P50 PUSH Bulletin at 7.

[44] *Id.*

This value was derived by a committee that was organized by Toxicology Excellence for Risk Assessment (TERA), a group with close ties to industries with financial interests in the chemicals that TERA assesses.[45] The derivation of the WEEL used a no-observed-adverse-effect concentration (NOAEC) of 3,000 ppm from an undisclosed rat study and applied an unknown uncertainty factor.[46] The scientific study that serves as the source for this WEEL only states that the "inhalation NOAEC was adjusted by application of uncertainty factors" including "interindividual variability, subchronic to chronic exposure, and other sources of uncertainty."[47] First, the failure to explain uncertainty factors is a source of bias for this derivation. Second, the uncertainty factors selected do not align with EPA's best practices for deriving reference concentrations.[48] At minimum, three uncertainty factors of 10 should be applied for (1) extrapolation from animals to humans, (2) interindividual variability, (3) and extrapolation from subchronic to chronic exposure unless scientifically valid explanations are provided to justify otherwise, and none is provided in this case. Third, the lack of studies in mammal species besides rats, given what is known about their higher elimination rate of PFAS, would warrant at least another uncertainty factor of 10 for database deficiencies. EPA cannot rely on the cited WEEL of 200 ppm to characterize health harms given that its derivation is not transparent nor scientifically defensible since it provides no explanation for its uncertainty factors.

While the PMN files largely redact information related to assessing the environmental harms of Opteon 2P50, available public information finds that the substance is hazardous to aquatic life and not readily biodegradable. In the ECHA dossier for (3E)-1,1,1,2,2,5,5,6,6,6-decafluorohex-3-ene ("Opteon 2P50"), a 96-hour LC50 for carp was calculated as 0.26 mg/L which indicates high acute toxicity.[49]

While hazard data for Opteon 2P50 are limited, in the atmosphere, Opteon 2P50 results in two degradation products, perfluoropropanoic acid ("PFPrA") and trifluoroacetic acid ("TFA"). TSCA requires EPA to evaluate the risks associated with new chemicals "under [their] conditions of use,"[50] which include the "the circumstances . . . under which a chemical substance is intended, known, or reasonably foreseen."[51] Under the condition of use proposed by the PMN submitter, releases to the air are reasonably foreseen from evaporative losses, leaks, end-of-life-handling and disposal. Additionally, the environmental fate of Opteon 2P50 is also reasonably foreseen. The environmental fate of Opteon 2P50 would be dominated by atmospheric reaction

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[45] Ctr. for Pub. Integrity, *One-Stop Science Shop has Become A Favorite of Industry – and Texas* (Dec. 19, 2014), https://publicintegrity.org/environment/one-stop-science-shop-has-become-a-favorite-of-industry-and-texas/.
[46] WEEL Committee, *(E)-1,1,1,2,2,5,5,6,6,6-Decafluoro-3-hexene (HFO-153-10mczz-E)*, 41 Toxicology and Indus. Health 123 (2025), 10.1177/07482337241290870.
[47] *Id.* at 128.
[48] EPA, *A Review of the Reference Dose and Reference Concentration Processes,* at xvii, 4–38 (Dec. 2002), https://www.epa.gov/sites/default/files/2014-12/documents/rfd-final.pdf.
[49] ECHA Dossier for 1256353-26-0; EPA, *Appendix I. Toxicity Categories and LOCs*, https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/naled/appendix-i.pdf.
[50] 15 U.S.C. § 2604(a)(3)
[51] *Id.* § 2602(4)

with hydroxyl radical, like other volatile fluorinated alkenes.[52] The sole product of the reaction of Opteon 2P50 with OH will be a perfluorinated aldehyde, CF3CF2C(O)H, which will be formed in a molar yield of 2 (i.e., each molecule of alkene degrades to form two molecules of the aldehyde). This chemistry is analogous to reactions of other fluorinated alkenes (e.g., HFO-1225zc, fluorotelomer olefins). Once the fluorinated aldehyde is formed, it can degrade further to form PFPrA and TFA.[53] The maximum molar yields of PFPrA and TFA from Opteon 2P50 would be 0.56 and 0.14, respectively.[54]

PFPrA and TFA are both ultra-short-chain PFAS, which are known for their high mobility in water and difficulty to contain and remediate, resulting in their ubiquitous presence, widespread contamination, and substantial risks to human health and the environment. PFPrA has been detected in rainwater, drinking water, source water, and even ice cores.[55] Animal studies demonstrate an association between PFPrA exposure and liver injury.[56] PFPrA and other ultrashort-chain PFAS are difficult to remove from water, often passing through wastewater treatment carbon filters and persisting in post-treatment drinking water.[57] TFA is a highly prevalent and persistent PFAS that is associated with developmental toxicity[58] and liver and thyroid harm.[59] TFA in the environment is extremely difficult to control, since "methods to remove TFA from water are expensive and often inefficient due to TFA's persistence and mobility."[60] Last month, the European Chemicals Agency's ("ECHA") Risk Assessment Committee adopted new hazard classifications for TFA, recognizing the chemical as a reproductive toxin that "may damage fertility" and "can cause long-lasting and diffuse

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[52] *See* M. Anwar H. Khan et al, *Global Modeling of Trifluoroacetic Acid Surface Concentration and Deposition from The Gas-Phase Oxidation of A Wide Range of Precursor Hydrofluoroolefins*, 6 Env't Sci.: ATMOsphere 195 (2025), https://doi.org/10.1039/d5ea00108k.
[53] *See* entry for 'CF3CF2C(O)H' in Table 1 in Sulbaek Andersen et al., *Yields of Perfluorocarboxylic Acids from the Atmospheric Oxidation of Montreal Protocol Related Gases*, 6 Env't Sci. ATMOsphere 473 (2026), https://doi.org/10.1039/d5ea00179j.
[54] *Id.* (twice the maximum molar yields listed in Table 1 of Sulbaek Andersen et al. 2026).
[55] Maria K. Björnsdotter et al., *Mass Balance of Perfluoroalkyl Acids, Including Trifluoroacetic Acid, in a Freshwater Lake*, 56 Env't Sci. & Tech. 251 (2022), https://doi.org/10.1021/acs.est.1c04472.
[56] EPA, *ORD Human Health Toxicity Value for Perfluoropropanoic Acid*, at 13 (June 2023), https://ordspub.epa.gov/ords/eims/eimscomm.getfile?p_download_id=547699.
[57] Cape Fear Pub. Util. Auth., *PFPRA and Other Ultra Short-Chain PFAS*, https://www.cfpua.org/835/PFPRA-and-other-UltraShort-Chain-PFAS.
[58] U.K. Health & Safety Exec., *Analysis of the Most Appropriate Regulatory Management Options (RMOA)*, at 107 (Mar. 2023), https://www.hse.gov.uk/reach/assets/docs/pfas-rmoa.pdf.
[59] ATMOsphere, *The Rising Threat of HFOs and TFA to Health and the Environment*, at 11 (Oct. 4, 2022), https://issuu.com/shecco/docs/2022_atmo_hfo_tfa_report.
[60] Hans Peter H. Arp et al., *The Global Threat from the Irreversible Accumulation of Trifluoroacetic Acid (TFA)*, 12 Env't Sci. & Tech. 19925, 19927 (2024), https://pmc.ncbi.nlm.nih.gov/articles/PMC11562725/.

contamination of water resources."[61] ECHA also classified TFA as PMT (persistent, mobile, and toxic) and vPvM (very persistent and very mobile).[62]

Chemours has a history of contaminating drinking water resources with PFPrA and TFA. In North Carolina, Chemours has been releasing these chemicals for over 40 years, contaminating the drinking water supply for approximately 500,000 residents and costing taxpayers millions of dollars for treatment technologies.[63] TFA was detected in drinking water in this region at levels as high as 2,000 parts per trillion.[64]

The risks of Opteon 2P50 are exacerbated by the substantial volumes of the substance that are likely to be used and released. According to Chemours, a single two-phrase immersion tank can contain 1,270 liters of Opteon cooling fluids.[65] A hyperscale data center can contain hundreds of tanks, totaling tens of thousands of liters of dielectric fluid.[66] If even a small fraction of the Opteon 2P50 used in a large data center leaks, it would result in a significant release of PFAS gases. And when cooling tanks need to be replaced, large amounts of Opteon 2P50 will be disposed or released, increasing the risk to the public and the environment.

TSCA section 5 prohibits EPA from approving new chemicals that present unreasonable risk to public health or the environment, and it requires health-protective regulation of any new chemicals that "may present" such risk.[67] With EPA struggling to protect the public from the PFAS that already contaminate our drinking water, air, soil, and bodies, the continued approval of Opteon 2P50, a new PFAS that degrades into other PFAS, will add to that unreasonable risk and worsen the significant PFAS environmental contamination in our country.[68] EPA must use its authority under TSCA to "prohibit . . . the manufacture, processing, or distribution in commerce of" this NCS.[69]

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[61] ECHA, *Minutes of the 77th Meeting of the Committee for Risk Assessment (RAC-77),* at 20 (June 5, 2026), https://echa.europa.eu/documents/d/guest/rac77_final_minutes_en.
[62] *Id.*
[63] Press Release, Southern Env't L. Ctr., Tests Show Some PFAS from Chemours Plague Drinking Water for More Than 500,000 North Carolinians (Oct. 24, 2025), https://www.selc.org/press-release/tests-show-some-pfas-from-chemours-plague-drinking-water-for-more-than-500000-north-carolinians/
[64] *Id.*
[65] Lenny Siegel, *Forever Chemicals Cool Data Centers*, Ctr. for Pub. Env't Oversight, at 2 (June 29, 2026), https://cpeo.org/pubs/ForeverDataCenters.pdf.
[66] *Id.*
[67] 15 U.S.C. § 2604(e)(1)(ii), (f).
[68] Env't & Energy L. Program, *PFAS and the EPA Strategic Roadmap: Progress and Challenges,* Harvard L. School (Jan. 13, 2025), https://eelp.law.harvard.edu/pfas-and-the-epa-strategic-roadmap-progress-and-challenges/.
[69] 15 U.S.C. § 2604(f)(3).

C. The Deployment of Opteon 2P50 Will Exacerbate Existing Health Burdens on Communities

The import and use of the NCS will foreseeably place a health burden on multiple fenceline communities, including communities that are already overburdened with toxic chemical exposures. The unredacted portions of the supporting documents submitted by the PMN submitter do not disclose the locations at which the NCS will be deployed, other than stating that the NCS "will be manufactured outside of the United States and imported" to the Chemours Headquarters.[70] Information on deployment of the NCS to specific data centers and on potential locations for disposal of the NCS were either not included or have been redacted from the PMN files.

TSCA requires EPA "to determine whether a chemical substance presents an unreasonable risk of injury to health or the environment . . . including an unreasonable risk to a potentially exposed or susceptible subpopulation."[71] The statute defines "potentially exposed or susceptible subpopulation" as "a group of individuals . . . who, due to either greater susceptibility or greater exposure, may be at greater risk than the general population of adverse health effects from exposure to a chemical substance or mixture."[72] As EPA has acknowledged, the communities surrounding facilities where chemicals are released fall squarely within that statutory definition.[73] Therefore, EPA must assess risks to any and all communities at the fenceline of data centers, waste management facilities, and other facilities that may process or handle the NCS.

It is unclear from the unredacted contents of the PMN supporting documents the extent to which the communities of Wilmington, Delaware (where Chemours is headquartered) and Newark, Delaware (where the Chemours Discovery Hub is located) may be exposed. Chemours states that the NCS will be imported to the headquarters, but that no "processing or use" will occur there and that the "NCS will never physically [be] on-site."[74] EPA must consider potential exposures stemming from importation into the Chemours headquarters as well as transportation from Wilmington to data centers, waste management sites, and other receiving facilities. Evaluation of these potential exposures should include reasonably foreseeable accidental releases such as freight cargo spills.

Wilmington, Delaware (and nearby Newark) is a community that already faces severe and overlapping environmental burdens. The Philadelphia-Reading-Camden metropolitan area consistently ranks among the most polluted in the nation based on year-round average levels of fine particle pollution.[75] A long history of chemical, agricultural, military, and pharmaceutical

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[70] Chemours, *Supply Chain, Containers, and Concerning Volumes*, PMN P-26-0071, at 1 "Supply Chain and Concerning Volumes*"*.
[71] 15 U.S.C. § 2605(b)(4)(A).
[72] *Id.* § 2602(12).
[73] 40 C.F.R. § 702.33 (defining "potentially exposed or susceptible subpopulation").
[74] PMN P-26-0071, Supply Chain and Concerning Volumes at 1.
[75] Am. Lung Ass'n, *Philadelphia-Reading-Camden, PA-NJ-DE-MD* (2026), https://www.lung.org/research/sota/city-rankings/msas/philadelphia-reading-camden-pa-nj-de-md.

activities in Delaware have left a legacy of toxic chemical contamination, especially in urban areas, low-wealth communities, and communities of color. These communities in Delaware face disproportionately high air and water pollution and a high concentration of hazardous waste sites when compared to both wealthier and whiter communities in the state, as well as national averages.[76] Unsurprisingly, these communities in Delaware also have disproportionately high rates of adverse health outcomes such as asthma and cancer.[77]

The Wilmington region is also already facing a significant toxic burden from PFAS specifically. Sampling of the Delaware River Basin has found widespread and persistent PFAS contamination in its surface water, sediment, and aquatic life.[78] Some systems in the river basin reported "astounding" levels of PFAS, including concentrations above 50 parts per trillion for PFOA.[79] Additional exposure risks stemming from the import and transportation of the NCS will exacerbate the already heavy burden of PFAS contamination in the area.

EPA must also consider risks to communities situated at the fenceline of existing and new data centers, where the NCS will be used as an immersion cooling fluid. Chemours does not disclose the number or geographic locations of data centers to which the NCS will be deployed. Currently, 42% of Americans live within five miles of at least one existing or planned data center, and the majority of those who live near one center also live near at least one more. Communities on the fenceline of data centers are already carrying a heavy environmental burden: data centers generate hazardous air pollutants[80] and harmful noise pollution.[81]

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[76] *See* Vasu Jayanthi, *Warning: Hazards Ahead (and Already Here in Delaware) How DuPont and Other Chemical Companies Have Created - and Polluted - the Chemical Capital of the World* (Apr. 22,2021), https://storymaps.arcgis.com/stories/e8f1c3cf0acb4c56b232de66afa9eb30; Union of Concerned Scis., *Environmental Justice for Delaware Mitigating Toxic Pollution in New Castle County Communities*, https://www.ucs.org/sites/default/files/attach/2017/10/ej-for-de-report-ucs-2017.pdf; Ry Rivard, *How Millions of People Ended Up With A Toxic Chemical In Their Water,* Politico (Jan. 20, 2022), https://www.politico.com/states/new-jersey/story/2022/01/20/how-a-toxic-chemical-ended-up-in-the-drinking-water-supply-for-13m-people-1405894; Maddy Lauria & Nick Stonesifer, *Dozens of Delawareans Allege Years of Mercury Poisoning At Former Chemical Plant*, Spotlight Del. (Aug. 8, 2024), https://spotlightdelaware.org/2024/08/08/oxychem-delaware-lawsuit/.

[77] Env't Justice for Del., *Mitigating Toxic Pollution in New Castle County Communities* (Oct. 17, 2017), https://www.ucs.org/resources/environmental-justice-delaware#ucs-report-downloads.

[78] Del. River Basin Comm'n, *PFAS Water Quality And Fish Tissue Assessment Study - Year 3 - Technical Report No. 2026-3,* (May 2026), https://www.nj.gov/drbc/library/documents/PFASYear3Study_NFWF_May2026final.pdf.

[79] Zoë Read, *Toxic PFAS Detected In Several Delaware Watersheds, Report Says,* (Sept. 25, 2024), https://whyy.org/articles/pfas-delaware-watersheds-report-toxic/.

[80] Yuelin Han et al., *Health-Informed Computing: Estimating and Addressing the Public Health Impact of Data Centers,* Computer & Society 1 (2026), https://doi.org/10.48550/arXiv.2412.06288.

[81] Miguel Yañez-Barnuevo, *Communities Are Raising Noise Pollution Concerns About Data Centers*, Env't and Energy Study Inst. (Mar. 23, 2026)

Discharges and foreseeable accidental releases of the NCS will exacerbate the existing toxic burden on these fenceline communities.

Finally, EPA must evaluate foreseeable risks to communities at the fenceline of potential disposal sites. Again, Chemours does not disclose or has redacted the number and location of disposal facilities that will be handling the NCS, as well as the anticipated disposal method. Like those near data centers, communities near disposal sites face an enormous environmental burden. EPA's current guidance for PFAS destruction and disposal offers three commercially available pathways: thermal treatment, hazardous waste landfills, and deep-well injection.

The first method, thermal treatment, often breaks PFAS into smaller, but still toxic, PFAS or other fluorinated byproducts.[82] PFAS levels after thermal treatment at Chemours' own sites have been detected at levels as much as 30 times higher than the company's reports.[83] Incinerators also release particulate matter, heavy metals, volatile organic compounds, and numerous other air pollutants.[84] People who face long-term exposure to these toxic chemicals suffer from increased risks of certain cancers, respiratory conditions, and adverse reproductive outcomes. Hazardous waste landfills also generate airborne emissions of volatile chemicals, as well as toxic leachate that can contaminate groundwater.[85] Deep-well injection, a disposal method for liquid PFAS, can also result in leaching to groundwater. More than 50 million gallons of PFAS-containing waste have been injected into Class I hazardous waste wells in Texas alone.[86] Studies on the long-term capability of deep wells to effectively contain PFAS are few and far between, and residents living near injection sites have raised the alarm about the potential for groundwater contamination.[87] Communities at the fencelines of all three disposal methods—thermal treatment, landfill, and deep-well injection—live with associated diesel emissions, noise pollution, and safety hazards.[88]

The communities of Wilmington, Delaware, and at the fencelines of data centers and disposal sites are all potentially exposed or susceptible populations. The import, transportation,

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https://www.eesi.org/articles/view/communities-are-raising-noise-pollution-concernsabout-data-centers.

[82] Keith Weitz et al., *Review Of Per- and Poly-Fluoroalkyl Treatment In Combustion-Based Thermal Waste Systems In The United States*, Sci. Total Env't 932 (2024), https://pmc.ncbi.nlm.nih.gov/articles/PMC12980551/.

[83] Tom Perkins, *A North Carolina PFAS Factory Claims Its Emissions Fell By 99.99%. A Guardian Test Revel Otherwise*, The Guardian (Jan. 28, 2024), https://www.theguardian.com/us-news/2024/jan/28/north-carolina-pfas-forever-chemicals-testing.

[84] Jose L. Domingo, *The Burden of Waste: Environmental Justice, Health Risks, And Socioeconomic Disparities Near Waste Management Facilities*, 305 Env't Rsch. Art. No. 125056 (2026). https://www.sciencedirect.com/science/article/pii/S0013935126013873#bib39.

[85] *Id.*

[86] Letter from EWG to Barry Breen, Acting Assistant Adm'r, EPA Re: Request for Public Comment, Federal Register, December 22, 2020 (85 FR 83554) (Feb. 22, 2021), https://www.ewg.org/sites/default/files/testimony/EPA.PFAS%20Disposal-final-numb.pdf.

[87] *Id.*

[88] *See* Jose L. Domingo 2026

use, and disposal of the NCS in these regions will exacerbate the already heavy, intersecting environmental burdens on these communities. EPA must evaluate risks to all communities at the fenceline of data centers, waste management centers, and other facilities that may process or handle the NCS.

III. EPA Cannot Consider Non-Risk Factors For Its Risk Determination

A. EPA Cannot Consider Policy Arguments in the Risk Evaluation Process

When Congress amended TSCA in 2016, it required EPA to determine whether new chemicals "present[]" (or "may present") unreasonable risk "without consideration of costs or other nonrisk factors."[89] Congress limited the scope of EPA's risk assessments to ensure that chemicals were reviewed "based solely on risk to human health and the environment—the integration of hazard and exposure information about a chemical—and not on the basis of other factors such as consideration of the costs or benefits of the substance or of possible restrictions on the substance."[90] If a chemical presents unreasonable risk, then EPA is authorized to "issue an order to prohibit or limit the manufacture, processing, or distribution in commerce of a substance."[91]

Unlike the regulation of existing chemicals under TSCA section 6, TSCA section 5 does not call for the consideration of economic costs and benefits when regulating new chemicals, for good reason.[92] Since a new chemical, by definition, is not currently domestically manufactured or imported into the United States (or is authorized solely pursuant to a limited PMN exemption), a regulatory restriction on a new chemical does not change the status quo or impose additional costs. Similarly, the potential benefits of new chemicals are highly speculative and cannot be readily ascertained based on the information in a PMN. Congress rationally directed EPA to focus on risk when reviewing new chemicals and authorized EPA to regulate those chemicals based on their risks alone.

In its Request for Priority New Chemical Review, Chemours states that "cooling technologies [are] essential components needed to resolve an urgent national challenge: the escalating energy, water, and grid constraints limiting deployment of next-generation AI infrastructure."[93] Chemours requests that EPA prioritize its review of the NCS "given the strength of…the critical societal need the NCS directly addresses."[94] Arguments on the necessity and sustainability of rapid expansion of AI infrastructure aside, this purported societal need for cooling technologies is not a relevant factor in risk evaluation for new chemicals under TSCA. Costs, benefits (including societal benefits or benefits to "American companies and American

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[89] 15 U.S.C. § 2604(a)(3) (emphasis added)
[90] S. Rep. No. 114-67, at 13 (2015).
[91] 15 U.S.C. § 2604(f)(3)(A).
[92] Compare 15 U.S.C. § 2605(c)(2) (establishing procedures for issuance of existing chemical risk management rules) with 15 U.S.C. § 2604(f) (establishing procedures for issuance of new chemical rules and orders).
[93] Chemours, *Request for Priority Review*, PMN P-26-0071, at 1 "Request for Priority Review*"*.
[94] *Id.*

[i]nnovation"[95]), and other nonrisk factors are expressly excluded from consideration during the section 5 risk evaluation process.

Moreover, even if EPA were permitted to consider the supposed benefits of expanding AI infrastructure, it would also have to consider the countervailing social costs. Increasing reliance on artificial intelligence raises profound ethical, environmental, and societal challenges, including disinformation,[96] labor disruption,[97] data exploitation, [98]and altered cognitive abilities among AI users.[99] AI infrastructure has heavy environmental costs which are not mitigated by cooling technologies like Opteon 2P50: massive land footprints,[100] toxic air emissions,[101] and noise and light pollution.[102] These risks have made the expansion of AI infrastructure vastly unpopular; public opposition to new data center construction is nearly universal and bipartisan.[103] Although TSCA precludes EPA from considering social and economic benefits of NCS deployment, the PMN relies heavily on claims of these benefits. If EPA is to consider these claims in any way, it must also consider the associated costs.

The PMN and supporting documents also rely heavily on claims that deployment of the NCS aligns with the current federal policy agenda. But guidelines and orders issued by the

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[95] PMN P-26-0071, Opteon Overview Summary.
[96] Noémi Bontridder & Yves Poullet, *The Role of Artificial Intelligence In Disinformation*, Cambridge Univ. Press (2021), https://www.cambridge.org/core/journals/data-and-policy/article/role-of-artificial-intelligence-in-disinformation/7C4BF6CA35184F149143DE968FC4C3B6;
Todd C. Helmus, *Artificial Intelligence, Deepfakes, and Disinformation: A Primer* (2022), https://apps.dtic.mil/sti/html/trecms/AD1173672/; Victor Galaz et al., *AI Could Create A Perfect Storm of Climate Misinformatio*n (2023), https://www.stockholmresilience.org/download/18.889aab4188bda3f44912a32/1687863825612/SRC_Climate%20misinformation%20brief_A4_.pdf
[97] The Economist, *If You Thought The Global Financial Crisis Was Bad…,* (June 28, 2026), https://www.economist.com/by-invitation/2026/06/28/if-you-thought-the-global-financial-crisis-was-bad; Connie Loizos, *The AI Layoff Wave Is Becoming A Powder Keg*, TechCrunch (June15, 2026), https://techcrunch.com/2026/06/15/the-ai-layoff-wave-is-becoming-a-powder-keg/.
[98] UK Dep't for Sci. Innovation & Tech., *Research and Analysis: Cyber Security Risks to Artificial Intelligence,* (May 15, 2024), https://www.gov.uk/government/publications/research-on-the-cyber-security-of-ai/cyber-security-risks-to-artificial-intelligence.
[99] Nataliya Kosmyna et al., *Your Brain on ChatGPT: Accumulation of Cognitive Debt when Using an AI Assistant for Essay Writing Task* (2025), https://arxiv.org/pdf/2506.08872v1
[100] Inst. for Water, Env't and Health, *Environmental Cost of AI's Energy Use Carbon, Water and Land Footprints*, U.N. Univ., (2026), https://collections.unu.edu/eserv/UNU:10647/UNU-INWEH-Report-The_Env_Cost_of_AI-2026.pdf.
[101] Yuelin Han et al. 2026.
[102] Stephen Voss*, Living in Hell': Data Center Neighbors Grapple With Noise, Air Pollution*, (Apr. 28, 2026), https://www.usnews.com/news/national-news/articles/2026-04-28/living-in-hell-data-center-neighbors-grapple-with-noise-air-pollution.
[103] Jeffrey M. Jones, *Americans Oppose AI Data Centers in Their Area*, Gallup (May 13, 2026) https://news.gallup.com/poll/709772/americans-oppose-data-centers-area.aspx.

executive branch—such as the Trump Administration's AI Action Plan and Executive Order 14318 accelerating federal permitting of data center infrastructure—do not supersede EPA's statutory mandate.[104] Regardless of executive priorities, EPA must conduct thorough and science-based risk evaluations for new chemical substances. Chemours' justifications for priority review and "timely deployment" of the NCS rely heavily on factors that are irrelevant under TSCA.[105] EPA should disregard these justifications, taking the necessary time to review the full body of scientific data on the NCS and make its determination based solely on risk-related factors.

B. EPA Cannot Consider Questionable Claims on Economic Opportunity in the Risk Evaluation Process

As explained above, TSCA prohibits EPA from considering claims of economic opportunity submitted by Chemours as part of its scientific assessment of Opteon 2P50's health and environmental risks. At the same time, to the extent that EPA might weigh such claims, there is uncertainty as to Chemours' claims that Opteon 2P50 is "infrastructure vital to U.S. competitiveness."[106] First, the liquid is only in development with no indication it can be used at scale in data centers. Second, the Lawrence Berkeley National Laboratory report, which assessed a similar, discontinued dielectric heat transfer fluid, found significant issues with the substance and deemed its use "not viable at this time."[107] This was because the substance destroyed the electric equipment it was cooling. Chemours does not provide the public a meaningful explanation or evidence that its substance works given that its "rebuttal" has been redacted.[108] More broadly, besides marketing claims, there appears to be no publicly available evidence that the substance is viable for its intended use.

IV. EPA Cannot Assume the Use of PPE in its Risk Evaluation

In its attachments to its request for priority review, Chemours includes a glove permeation analysis for the NCS. The analysis concludes, "Results indicate there are likely a wide range of chemical protective clothing materials that are protective against dermal contact with the NCS under typical conditions of customer use, which include short durations of liquid exposure."[109] EPA must disregard this submission, as the consideration of PPE in a risk evaluation would violate TSCA and contradict fundamental principles of industrial hygiene.

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[104] *Marks v. C 'Living in Hell': Data Center Neighbors Grapple With Noise, Air Pollutioent. Intel. Agency*, 590 F.2d 997, 1003 (D.C. Cir. 1978) ("Of course, an executive order cannot supersede a statute."); *In re United Mine Workers of Am. Int'l Union*, 190 F.3d 545, 551 (D.C. Cir. 1999) ("[T]he President is without authority to set aside congressional legislation by executive order ….").

[105] PMN P-26-0071, Opteon Overview Summary; PMN P-26-0071, Request for Priority Review; Chemours, Letters of Support, PMN P-26-0071.

[106] PMN P-26-0071, Request for Priority Review at 2.

[107] Henry Coles & Magnus Herrlin, *Immersion Cooling of Electronics in DoD Installations*, Ernest Orlando Lawrence Berkeley Nat'l Lab'y, (May 2016), https://eta-publications.lbl.gov/sites/default/files/lbnl-1005666.pdf.

[108] Chemours, *NL Rebuttal and Report*, PMN P-26-0071, "Opteon Rebuttal and Report".

[109] Chemours, *Glove Permeation Analysis*, PMN P-26-0071, "Glove Permeation Analysis".

TSCA requires EPA to evaluate new chemical risks "without consideration of costs or other nonrisk factors."[110] Only after finding that a chemical "presents" or "may present" unreasonable risk can EPA evaluate different options for eliminating such risk, including the potential use of PPE.[111] This distinction is important because it allows EPA to compare different risk management options and determine which is most effective. The consideration of PPE—a risk management tool—in a risk evaluation would erase the line between those phases and prematurely select a specific risk management approach.

An assumption of PPE use in risk evaluation would also be fundamentally inconsistent with the occupational hierarchy of controls, a foundational principle of industrial hygiene.[112] The hierarchy of controls "prioritizes the most effective measures, which eliminate or substitute the harmful chemical (e.g., use a different process, substitute with a less hazardous material), thereby preventing or reducing exposure potential."[113] If elimination and substitution are not feasible, "the hierarchy recommends engineering controls to isolate employees from the hazard, followed by administrative controls or changes in work practices to reduce exposure potential (e.g., source enclosure, local exhaust ventilation systems)."[114] In prior risk evaluation comments, the National Institute for Occupational Safety and Health has told EPA that "[p]ersonal protective equipment is the last line of defense and should only be provided when exposures cannot be controlled sufficiently by other means such as substitution, engineering controls, redesign of work, etc."[115] Assuming the use of PPE in a risk assessment inverts that hierarchy and adopts the least effective means of control as a default approach.

Moreover, even if there were "a wide range of chemical protective clothing materials that are protective against dermal contact with the NCS," EPA has no basis to conclude that such PPE will routinely and effectively be used. The NCS will be used in an unknown number of unidentified data centers, which are not owned or operated by the PMN submitter, and EPA has no information about those facilities' respective industrial hygiene practices. The assumption of effective PPE use is thus legally and factually unsupported.

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[110] 15 U.S.C. § 2604(a)(3).
[111] *Id.* § 2604(e), (f).
[112] OSHA, *Identifying Hazard Control Options: The Hierarchy of Controls,* https://www.osha.gov/sites/default/files/Hierarchy_of_Controls_02.01.23_form_508_2.pdf.
[113] EPA, *Draft Environmental Release and Occupational Exposure Assessment for Dibutyl Phthalate Technical Support Document for the Draft Risk Evaluation,* (May 2025), https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P101G73Y.txt.
[114] EPA, *Final Risk Evaluation for Perchloroethylene Supplemental File: Releases and Occupational Exposure Assess*ment (Dec. 2025), https://www.epa.gov/sites/default/files/2020-12/documents/16_pce_supplemental_information_file_releases_and_occupational_exposure_assessment.pdf.
[115] Nat'l Inst. for Occupational Safety and Health, Comments on Methylene Chloride Risk Evaluation.

V. The PMN Submission Does Not Provide EPA All the Information It Needs to Evaluate Opteon 2P50

The PMN files, in addition to being unlawfully redacted, Point VI *infra*, fail to provide the information that EPA needs to fully evaluate Opteon 2P50's risks. First, while TSCA requires EPA to consider the risks to people who are exposed to Opteon 2P50 from multiple exposure routes or from multiple conditions of use, the PMN submissions contain no information about those aggregate exposures. Point V.A *infra*. Second, while TSCA requires EPA to evaluate the risks associated with Opteon 2P50's reasonably foreseen uses and releases, the PMN submissions focus exclusively on the submitter's intended use.

A. EPA Needs to Consider Aggregate Exposures

TSCA requires EPA to evaluate the risks posed by aggregate exposures to a new chemical substance—*i.e.*, the combined exposures from multiple facilities and through multiple exposure routes. This mandate arises from TSCA's plain text, the obligation to consider risks to potentially exposed and susceptible subpopulations, and the obligation to assess a new chemicals' risks in a manner consistent with the best available science.

TSCA Section 5(e) requires EPA to regulate new chemicals when it finds that "the manufacture, processing, distribution in commerce, use, or disposal of such substance, *or any combination of such activities*, may present an unreasonable risk of injury to health."[116] TSCA thus requires EPA to consider aggregate exposures to a chemical from multiple sources and conditions of use ("COUs"); EPA cannot identify and eliminate unreasonable risks arising from "any combination of" activities, as Section 5(e) contemplates, if EPA only assesses the risks posed by individual COUs in isolation.[117]

Aggregate exposure assessments also represent "the best available science" for evaluating chemical risks, which EPA is obligated to use under TSCA.[118] As the Science Advisory Committee ("SACC") has previously advised EPA, the "omission of aggregate exposure is not health protective" and is inconsistent with TSCA's requirements.[119]

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[116] 15 U.S.C. § 2604(e) (emphasis added)
[117] *Id*.
[118] *Id*. § 2625(h); *see* Swati D.G. Rayasam et al., *Toxic Substances Control Act (TSCA) Implementation: How the Amended Law Has Failed to Protect Vulnerable Populations from Toxic Chemicals in the United States*, 56 Env't Sci. & Tech. 11969, 11973 (2022), https://doi.org/10.1021/acs.est.2c02079 ("Using the best available science, as required by TSCA, means EPA must quantify the aggregate exposures and cumulative risks."); Nat'l Rsch. Council, *Science and Decisions: Advancing Risk Assessment*, Nat'l Acads. of Scis., Eng'g, and Med., at 9–10 (2009) ("Science and Decisions"), https://www.nationalacademies.org/projects/BEST-K-05-02-A.
[119] SACC, *Report on Peer Review of the Draft Risk Evaluation for 1,3-Butadiene*, at 22 (2025) ("1,3-Butadiene SACC Report"); *see also id.* at 43–44, 53.

TSCA's directive that EPA evaluate risks to "potentially exposed or susceptible subpopulation[s]" likewise compels the Agency to consider aggregate exposures.[120] TSCA defines a potentially exposed or susceptible subpopulation as "a group of individuals . . . who, due to either greater susceptibility *or greater exposure*, may be at greater risk than the general population of adverse health effects from exposure to a chemical substance or mixture."[121] As EPA recognized in its TSCA risk evaluation framework rule, this definition encompasses those who "experienc[e] higher levels of exposure to a chemical substance due to . . . aggregate exposure via multiple conditions of use."[122] Thus, characterizing risks to potentially exposed or susceptible subpopulations necessarily requires EPA to consider aggregate exposures and to evaluate risks to groups who experience greater risk because of such exposures.[123]

Here, there are multiple combinations of exposures that EPA must consider when evaluating the new chemical substance. First, given the large number of data centers in which Opteon 2P50 may be used, EPA must consider the risks of releases or disposals from multiple facilities in the same geographic area. The PMN submitter admits that "the number of downstream data center users that will deploy the [chemical] is currently unknown,"[124] and nationwide there are more than 4,000 data centers, including roughly 700 concentrated in Virginia and Texas.[125] It is reasonably foreseen that data centers would send waste containing the chemical to the same treatment plant or disposal facility.[126] Second, Opteon 2P50 is designed to volatilize, creating the potential for inhalation as well as dermal exposures by workers in data centers.[127] EPA must consider total exposures from both of those and any other exposure routes, including workers' combined exposures from dermal absorption and the inhalation of volatilized Opteon 2P50 that may occur when the chemical is being added to a cooling system or replenished. Third, while the substance is intended to be used in data center cooling systems, it is reasonably foreseen that it will be used for other purposes as well. For instance, Chemours markets Opteon 2P50 for use in "electric vehicle batteries" as well as data centers.[128] EPA must evaluate the exposure to the chemical from multiple conditions of use, as opposed to focusing exclusively on the use intended by the PMN submitter.

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[120] 15 U.S.C. § 2605(b)(4)(A).
[121] *Id.* § 2602(12) (emphasis added).
[122] EPA, Procedures for Chemical Risk Evaluation Under the Toxic Substances Control Act (TSCA), 89 Fed. Reg. 37028 at 37,039–40.
[123] *See* 1,3-Butadiene SACC Report at 46.
[124] Chemours, *Concerning Number of Downstream Use Sites*, PMN P-26-0071.
[125] Cleanview, *Data Centers in the United States*, (July 2026), https://cleanview.co/data-centers/us.
[126] 15 U.S.C. §§ 2602(4), 2604(a)(3) (requiring EPA to evaluate new chemicals' risks "under the condition of use," which TSCA defines 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.").
[127] P-26-0071, Opteon Overview Summary at 10.
[128] Opteon, *Opteon™ 2P50 Developmental Dielectric Heat Transfer Fluid*, https://www.opteon.com/en/products/liquid-cooling/2p50.

B. EPA Needs to Assess Reasonably Foreseen Uses

TSCA requires EPA to evaluate the risks posed by Opteon 2P50 under its "conditions of use,"[129] which are defined as "the circumstances . . . under which a chemical substance is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, or disposed of."[130] The evaluation of "reasonably foreseen" uses and releases is critical for the protection of public health, because once a new chemical is approved and placed on the TSCA inventory, it can be used by any party for any purpose, regardless of the PMN submitter's intentions. When evaluating chemicals' risks, EPA must therefore look beyond the circumstances described by the submitter and consider the risks associated with unintended but reasonably foreseen uses and releases.

For instance, while Opteon 2P50 is intended for "non-mechanical heat transfer fluid in support of data centers,"[131] it is also marketed for use as a cooling fluid in electric vehicle batteries[132] and as a "replacement for [perfluoropolyethers], [hydrofluoroethers], and [hydrofluorocarbons] in a variety of thermal management applications."[133] Perfluoropolyethers have been used "in a variety of industrial applications and consumer products," including as "greases and lubricants, . . . additives, processing aids, [and] surface treatments."[134] Hydrofluoroethers "can be used as a refrigerant; a temperature control refrigerant for dry etching equipment, photolithography equipment, ion injection equipment, probes, and information processing equipment; an immersion refrigerant for data centers; an immersion refrigerant for power devices; and can also be used in food industry cooling equipment, freeze drying, freezing, and crushing of rubber and plastics, and cooling equipment for chemical industry-grade pharmaceuticals."[135] Hydrofluorocarbons are widely used "in refrigeration, air conditioning[,] and heat pumps."[136] Based on Chemours' marketing materials alone, there are a broad range of reasonably foreseen uses that EPA must consider in its review of the NCS.

Further, while the PMN submitter states that it intends to import Opteon 2P50, once approved, the chemical may be manufactured domestically as well. Chemours, which markets

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[129] 15 U.S.C. § 2604(a)(3)(A), 2604(e)(1)(ii).
[130] *Id.* § 2602(4).
[131] Chemours, *Primary PMN*, PMN P-26-0071, at 12.
[132] 91 Fed. Reg. at 35,979.
[132] Opteon, *Opteon™ 2P50 Developmental Dielectric Heat Transfer Fluid*.
[133] *Id.*
[134] Env't Directorate Chems and Biotechnology Comm., *Synthesis Report on Understanding Perfluoropolyethers (PFPEs) and Their Life Cycle Series on Risk Management No. 82*, OECD Env't, Health and Safety Publ'ns (Aug. 2024), https://one.oecd.org/document/ENV/CBC/MONO(2024)5/en/pdf.
[135] Lab Insights, *Hydrofluoroethers: Sustainable Solutions for Electronics-Related Industries*, (Nov. 14, 2024), https://labinsights.nl/en/article/hydrofluoroethers-sustainable-solutions-for-electronics-related-industries.
[136] Env't Investigation Agency (EIA), *What are Hydrofluorocarbons*?, https://eia.org/campaigns/climate/what-are-hydrofluorocarbons/

the Opteon 2P50, operates multiple HFO production facilities within the United States.[137] In addition to the release of the new chemical substance, HFO production often involves the use and release of other toxic chemicals, including carbon tetrachloride.[138] EPA must evaluate the risks associated with domestic manufacturing operations, including risks to communities surrounding manufacturing facilities that are already overburdened by existing chemical exposures and contamination.

EPA must also consider the circumstances under which the chemical is reasonably foreseen to be released or disposed of. For instance, data centers are susceptible to arc flashes that "can easily reach [temperatures of] 14,000–16,000°F," resulting in the vaporization and release of cooling fluids like the Opteon 2P50.[139] Chemours itself acknowledges potential leaks of cooling fluids in two-phase immersion cooling systems, estimating a typical evaporative loss rate of 0.7% per year.[140] EPA must consider those and other reasonably foreseen releases when evaluating the chemical's risks.

VI. The Extensive Redaction of the PMN Files, Including the Withholding of Health and Safety Information, Violates TSCA

TSCA provides that PMN submissions "shall be made available" to the public.[141] The only information that can be withheld from those submissions is confidential business information (CBI), as defined in TSCA Section 14.[142] To support a claim of confidentiality, the submitter must establish, among other requirements, "a reasonable basis to conclude that disclosure of the information is likely to cause substantial harm to the competitive position of the person."[143] "Conclusory and generalized allegations . . . are unacceptable and cannot support an agency's decision to withhold requested documents."[144]

TSCA further provides that CBI protections do not extend to "health and safety stud[ies]," as well as "any information reported to, or otherwise obtained by, the Administrator

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[137] EIA, *Persistent Problems: The Hidden Impacts of Hydrofluoroolefins, The Latest Generation of Fluorinated Gases*, at 9 (July 2025), https://eia.org/wp-content/uploads/2025/07/EIA_F-Gas_Report_0725_FINAL_SINGLES.pdf.
[138] *Id.* at 10.
[139] Kevin Heslin, *Arc Flash Mitigation in the Data Center*, Uptime Inst. (Dec. 1, 2015), https://journal.uptimeinstitute.com/arc-flash/.
[140] Lenny Siegel 2026, https://cpeo.org/pubs/ForeverDataCenters.pdf.
[141] 15 U.S.C. § 2604(d)(1).
[142] *Id.* § 2613(c)(1).
[143] *Id.* § 2613(c)(1)(B)(iii).
[144] *Pub. Citizen Health Rsch. Grp. v. Food & Drug Admin.*, 704 F.2d 1280, 1291 (D.C. Cir. 1983) (interpreting parallel confidentiality provisions of the Freedom of Information Act); EPA, *Frequent Questions About TSCA CBI*, https://www.epa.gov/tsca-cbi/frequent-questions-about-tsca-cbi#Q11 ("Persons substantiating CBI claims should be mindful of the need to provide case-specific facts to support the claims and avoid mere conclusory assertions.") (last updated Aug. 11, 2025).

from a health and safety study."[145] The statute broadly defines "health and safety study" as "any study of any effect of a chemical substance or mixture on health or the environment or on both, including underlying information and epidemiological studies, studies of occupational exposure to a chemical substance or mixture, toxicological, clinical, and ecological studies of a chemical substance or mixture, and any test performed pursuant to this chapter."[146] This "mandate for the broad availability of health and safety data, with its narrow protection only for the most crucial proprietary information, demonstrates the overriding statutory policy of information access."[147]

The PMN submission violates this requirement in multiple ways. First, the PMN submitter has brazenly and unlawfully withheld or redacted health and safety studies. In the "Overview and Summary" document that was provided to EPA, seven slides titled "Environmental (Aquatic) Toxicity Profile" and "Mammalian Toxicity Profile" are redacted in their entirety.[148] Based on the headings of those slides alone, there is no question that those slides contain "information . . . from a health and safety study,"[149] yet their contents are unlawfully withheld:

[145] 15 U.S.C. § 2613(b)(2).
[146] *Id.* § 2602(8) (emphasis added).
[147] EPA, *Final Action Plan: TSCA Confidential Business Information Reform*, at 3 (June 20, 1994) ("EPA CBI Action Plan"), https://www.regulations.gov/document/EPA-HQ-OPPT-2002-0054-0075 (click "Download"); *see also* EPA, General Provisions: Confidential Business Information, 43 Fed. Reg. 39,997, 39,998 (Sept. 8, 1978) ("The congressional policy behind section 14(b) of TSCA is that the public must have access to data about health and safety for those chemicals that are in commerce because the public may be exposed to those substances.").
[148] P-26-0071, Overview Summary at 31–37.
[149] 15 U.S.C. § 2613(b)(2).

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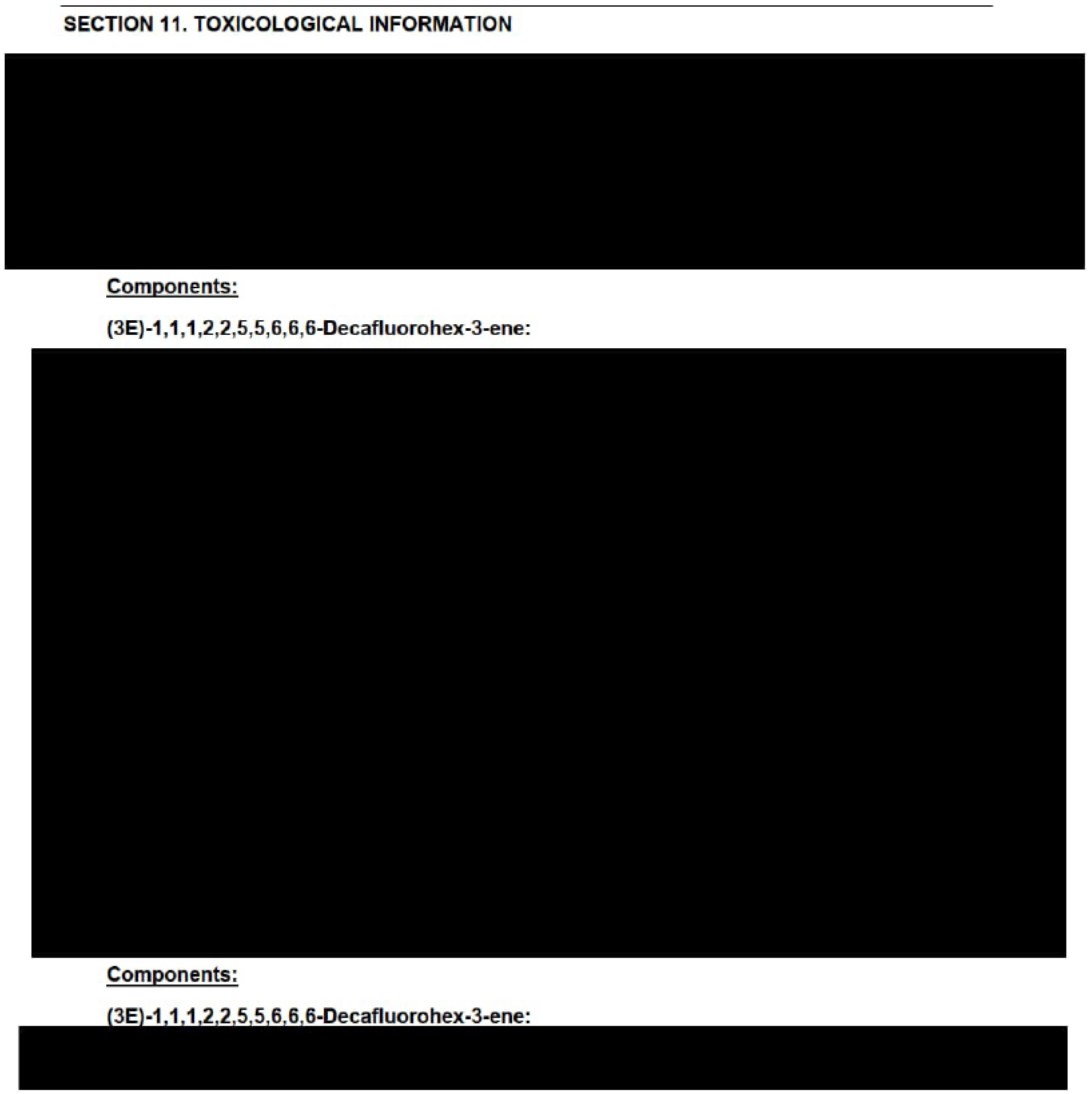
Similarly, in the Safety Data Sheet (SDS) for the Opteon 2P50, all "toxicological information" is redacted. These redactions not only violate the statute, but they are directly contrary to EPA's guidance governing CBI submissions, which explain that "Safety Data Sheets contain health and safety information—CBI claims in SDSs should be limited to information unrelated to the effects of a substance on human health or the environment."[151] In contrast, here most of the information redacted from the SDS is the very health and safety information that must be disclosed, as reflected in the excerpts below:

[150] P-26-0071, Overview Summary at 37.

[151] EPA, CBI Substantiation for PMN, SNUN, TMEA, LVE, and LOREX Filings Template, at 1, https://www.epa.gov/system/files/documents/2023-08/pmn_substantiation_template_July%202023.docx.


SECTION 11. TOXICOLOGICAL INFORMATION

[redacted]

Components:

(3E)-1,1,1,2,2,5,5,6,6,6-Decafluorohex-3-ene:

[redacted]

Components:

(3E)-1,1,1,2,2,5,5,6,6,6-Decafluorohex-3-ene:

[redacted]

The PMN submission also states that "previous [section] 8(e) [s]ubmissions have been made by the [s]ubmitter on behalf of the New Chemical Substance."[152] TSCA section 8(e) provides that "any person who manufactures, processes, or distributes in commerce a chemical substance or mixture and who obtains information that reasonably supports the conclusion that such substance or mixture presents a substantial risk of injury to health or the environment shall immediately inform the Administrator."[153] Section 8(e) notices are, by definition, health and safety information. Yet the list of 8(e) submissions in the PMN files is completely redacted, and the notices themselves do not appear anywhere in the file.

[152] Chemours, *NCS 8(e) Public*, PMN P-26-0071.
[153] 15 U.S.C. § 2607(e).

The previous 8(e) submissions have been made by the Submitter on behalf of the NCS:

Case Number	Date Submitted in CDX
[redacted]	

The PMN submitter has also unlawfully redacted information about "occupational exposure to [the] chemical substance," even though such information also falls within the statutory definition of "health and safety study."[154]

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In addition to the unlawful redaction of Health and Safety Information, the PMN submitter has not shown that disclosure of the redacted information is "likely to cause substantial harm to [their] competitive position."[156] For instance, the "maximum first 12-month production"

[154] 15 U.S.C. § 2602(8).
[155] P-26-0071, Overview Summary at 25.
[156] 15 U.S.C. § 2613(c)(1)(B)(iii).

is withheld as CBI.[157] But, particularly since the CAS number and chemical structure are unredacted, there is no reason why disclosing the maximum amount of the chemical that will be imported would cause any "substantial harm" to the PMN submitter, and there is nothing in the record that supports that CBI claim. The submitter has also redacted all information related to "impurities and byproducts."[158] Here, too, given that the identity of the substance is known and there is no need for competitors to reverse engineer its structure, it is unclear how disclosing impurities and byproducts would result in any competitive disadvantage, much less "substantial harm."[159]

The PMN submitter has also unlawfully withheld information that "appear[s] in . . . public documents, including (but not limited to) safety data sheets."[160] For instance, the "Measured Physical Chemical Properties" are wholly redacted from the Overview and Summary document,[161] even though that information is publicly available on Chemours' website.[162]

These are not harmless errors. The excessive redaction of the PMN files, including but not limited to the withholding of health and safety information, deprives the public of the information it needs to fully evaluate and comment on the PMN. In the event that the PMN is not all denied, EPA must republish them in a manner that complies with TSCA Section 14.

CONCLUSION

With millions of people threatened by uncontained PFAS contamination, and the federal government struggling to regulate and remediate those existing PFAS, the approval of new PFAS is contrary to EPA's TSCA obligations and the agency's commitments to impacted communities. EPA cannot "use [its] authorities, expertise[,] and partnerships to mitigate and reduce PFAS pollution and protect public health" while continuing to approve additional PFAS that place more communities at risk.[163] For the preceding reasons, we respectfully urge EPA to use its authority under TSCA Section 5 to prohibit the manufacturing of all new PFAS and significant new PFAS uses, including Opteon 2P50.

If you have any questions about these comments, please contact Adriana Antezana, Earthjustice, at aantezana@earthjustice.org.

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[157] P-26-0071, Primary PMN Form at 12.
[158] Chemours, *Additional Information Related to the Impurities and Byproducts*, PMN P-26-0071.
[159] 15 U.S.C. § 2613(c)(1)(B)(iii).
[160] 40 C.F.R. § 703.5(b)(3)(iii)(B).
[161] P-26-0071, Overview and Summary at 22.
[162] Opteon, *Opteon™ 2P50 Developmental Dielectric Heat Transfer Fluid*.
[163] Memorandum from Michael S. Regan, Adm'r, EPA, Regarding Per- and Polyfluoroalkyl Substances to EPA Officials, at 2 (Apr. 27, 2021), https://www.epa.gov/sites/default/files/2021-04/documents/per-and_polyfluoroalkyl_substances.memo_.signed.pdf.

Respectfully submitted,

Alaska Community Action on Toxics
Center for Environmental Health
Center for Public Environmental Oversight
CHIPS Communities United
Clean Air for All Now!
Clean Cape Fear
Clean Water Action
Delaware Riverkeeper Network
Earthjustice
Food & Water Watch
Green Amendments For The Generations
Merrimack Citizens for Clean Water
Montana Environmental Information Center
Natural Resources Defense Council
Save Our Water
Vermont PFAS and Military Poisons Coalition
West Plains Water Coalition, Spokane WA