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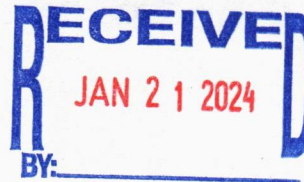
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January 10, 2025

VIA ELECTRONIC AND CERTIFIED MAIL

The Honorable Jane Nishida
Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

**Re: Petition for Reconsideration and Request for Agency Stay Pending
Reconsideration and Judicial Review of Final Rule entitled
*Trichloroethylene; Regulation Under the Toxic Substances Control Act***

Dear Acting Administrator Nishida:

Please find enclosed a petition for reconsideration and request for stay for the U.S. Environmental Protection Agency's final rule entitled *Trichloroethylene (TCE); Regulation Under the Toxic Substances Control Act (TSCA)* that was published in the *Federal Register* at 89 Fed. Reg. 102,568 on December 17, 2024. This petition and request is filed on behalf of Microporous, LLC.

Please contact me with any questions you may have.

With best regards,

A handwritten signature in blue ink, appearing to read 'SDW'.

Steven D. Weber

Enclosure

PPAB 11868438v1

*In re: Trichloroethylene; Regulation
Under the Toxic Substances Control Act
Final Rule, 89 Fed. Reg. 102,568
(December 17, 2024)*

PPAB 11868873v2

I. Background of Microporous in the Battery Separator Industry.

TCE is the primary solvent used in the manufacture of battery separators. Battery separators are essential, irreplaceable components for all rechargeable batteries in the U.S. and around the world. Battery separators provide the necessary separation between the internal anode and cathode components that make all batteries work, and separators hold the electrolyte in the proper location. TCE is a necessary solvent for the manufacture of the majority of separator materials required to produce lead batteries. Further, many separator materials used in lithium-ion and other chemistries are manufactured utilizing processes that require TCE.

Microporous is one of the nation's largest manufacturers of lead-acid battery separators. Microporous is a global company headquartered in Piney Flats, Tennessee. Microporous owns and operates three well-invested, world-class manufacturing facilities in the U.S. and Europe, two in Piney Flats and one in Feistritz, Austria. The Microporous facilities in Tennessee were built in 1971 and 2020. The Tennessee facility that was built in 1971, underwent an expansion in 2000, and now employs 165 people.

Microporous' battery separators are critical and essential to the national economy and infrastructure, particularly the manufacturing, energy, transportation, and defense sectors. Microporous' battery separators are essential in gasoline and electric-powered commercial vehicles, emergency response and military vehicles, marine engines, nuclear power providers, and they are used in many other business sectors.

II. Microporous' Use of TCE to Manufacture Battery Separators.

Microporous' separator manufacturing process requires a high-performance process solvent with unique properties. Microporous' lead-acid battery separators are made of silica, process oil, and polyethylene resin, a unique polymer that is extruded into sheet form using the process oil. The mixture is fed into an extruder that heats and pushes the molten material through a die to generate a sheet. Much of the process oil used in the extrusion process must be removed from the separator sheets using a solvent. The sheet is run through a set of calendaring rollers that imprint a pattern, then the sheet enters an oil-extraction process that employs TCE to extract the oil, reducing the oil content within the sheet from approximately 60% - 65% to just 20% - 25%. The extracted oil and 99.7% of the TCE are captured and reused in the process. The oil-extraction process occurs inside an entirely enclosed structure within the process area that is in-line with the extruder. The enclosure is maintained under negative pressure, and makeup air enters through louvres in the ceiling of the enclosure. Air from inside the enclosure is vented to a series of carbon beds. Once the solvent has removed the precise amount of oil from the separator, the solvent is evaporated/removed from the separator to yield the required porosity to allow ion flow in the finished battery.

The process solvent Microporous uses, TCE, is essential to Microporous' separator manufacturing process. TCE has a unique combination of chemical properties that facilitate the controlled removal of process oil while allowing Microporous to recover and recycle previously-used TCE efficiently for reuse in the battery separator production processes in a manner that minimizes worker exposure while resulting in a product with the characteristics required by battery producers.

III. The Battery Separator Exemption and its Shortcomings.

Under TSCA Section 6(g)(1), EPA has the authority to exempt specific uses of TCE from EPA's risk management rules when the statutory criteria are met. EPA concluded that restricting certain conditions of use ("COUs") in certain industrial sectors in which there is no feasible alternative would "disrupt the supply chain and leave the U.S. reliant on foreign suppliers to the extent they are available to support the national economy, national security, and critical infrastructure." (88 Fed. Reg. at 74,745) Battery separator manufacturing is one of those exempt industrial sectors. (89 Fed. Reg. 102,586)

Microporous agrees with and fully supports EPA's conclusions that banning Microporous' use of TCE at this time would "significantly disrupt national security and critical infrastructure," and that prohibiting TCE use for battery separator production would "disrupt national security priorities of reducing supply chain risks by building a robust domestic renewable power sector and transitioning to a clean energy-based economy." (88 Fed. Reg. at 74,746) Microporous appreciates that EPA has recognized the significant negative impact to national security, the national economy, and critical infrastructure of banning the use of TCE for battery separator manufacturing. (89 Fed. Reg. 102,586)

Further, Microporous fully supports EPA's decision to issue a TSCA Section 6(g) exemption for industrial and commercial use of TCE as a processing aid for battery separator manufacturing, called "Industrial and Commercial Use of TCE as a Processing Aid for Battery Separator Manufacturing (Lead-Acid and Lithium Battery Separators)." (See 89 Fed. Reg. 102,586) EPA has met the statutory factors for issuing such an exemption pursuant to TSCA Section 6(g)(1)(B), 15 U.S.C. § 2605(g)(1)(B), concluding that the Battery Separator Exemption is necessary to preserve national security, the national economy, and critical infrastructure. As an aside, Microporous also believes its operations warrant an exemption under 15 U.S.C. § 2605(g)(1)(A) and (C).

While the Battery Separator Exemption is a good first step, it does not go nearly far enough, and, as a practical matter, really amounts to no exemption at all in the manner proposed. All that EPA purports to give in the Battery Separator Exemption itself, EPA takes away in the conditions on that Exemption. Microporous' petition primarily addresses the following aspects of the Battery Separator Exemption: (1) the 20-year period of the Battery Separator Exemption; and (2) the unachievable existing chemical exposure limit ("ECEL") and unwieldy workplace chemical protection program ("WCPP").

IV. Inappropriately Short Comment Period.

At the outset, Microporous attempted to provide EPA with meaningful, science-based comments on the proposed TCE Rule, under an unnecessarily truncated comment period, to address some of EPA's sixty or so specific requests for comment on much of the proposed TCE Rule. (See 88 Fed. Reg. 74,775-79) On November 8, 2023, Microporous submitted to EPA a request for a brief 45-day extension of the comment period through and including January 29, 2024. EPA summarily denied Microporous' request. Other commentors similarly sought extensions but all were denied. This limited comment period did not give Microporous sufficient opportunity to develop necessary data and information to respond fully. Without sufficient time

on an extremely complex and lengthy proposed TCE Rule, Microporous did what it could at that time to evaluate and comment on EPA's proposed TCE Rule. However, Microporous' comments submitted in December 2023 did not represent its full analysis and comment. What is particularly troubling is that many of EPA's requests invited interested parties to undertake scientific and technical analyses and develop new data to address EPA's scientific framework fully (*see, e.g.*, 88 Fed. Reg. 74,775-79), but then EPA did not give parties a sufficient opportunity to develop that data. Microporous still submitted its comments in a timely manner.

V. EPA's Conditions Imposed as Part of the Battery Separator Exemption are not Based on Good Science and are Unworkable as a Practical Matter.

In granting a TSCA Section 6(g) exemption, EPA may impose conditions if "necessary to protect health and the environment while achieving the purposes of the exemption." The purpose of these conditions is to "protect health and the environment *to the extent feasible*, recognizing that, by its nature, an exemption will allow for activities that present some degree of unreasonable risk."

The fundamental problem with the proposed Battery Separator Exemption is that it is subject to a set of unworkable conditions that would prevent Microporous from continuing operations as a practical matter. Although EPA has recognized that the Battery Separator Exemption is needed to protect the economy, national security, and critical infrastructure, it has proposed subjecting the exemption to an ECEL and WCPP conditions that, together, effectively ban any realistic use of TCE by battery separator manufacturers. Thus, if these proposed conditions remain in the final rule, the impact on the battery separator industry will be fatal, causing an inevitable shut down of battery separator manufacturers. This result is the very consequence that the Battery Separator Exemption is supposed to prevent, that is a significant disruption to the national economy, national security, and critical infrastructure, all of which depend on battery separators.

A. The ECEL and WCPP conditions are unreasonable and unworkable.

TCE; Regulation under TSCA imposes conditions that must be met to qualify for the Battery Separator Exemption, including an ECEL and corresponding WCPP. While TSCA allows EPA to impose reasonable conditions, EPA has not done so here. The ECEL is scientifically unsound. To make matters worse, the WCPP's respiratory protection and monitoring requirements are unreasonable and unworkable. In fact, in some cases (such as the respiratory protection condition) actually cause more harm than good. The practical impact of these conditions is an outright ban because no battery separator manufacturer can comply and stay in business.

1. The ECEL is scientifically unsound.

The Battery Separator Exemption mandates a Proposed ECEL of 0.2 ppm as an 8-hour time-weighted average ("TWA"). (89 Fed. Reg. 102,601) The ECEL is based on a developmental endpoint of congenital heart defects ("CHD"). (88 Fed. Reg. 74,731) The reports in the

Microporous Comments¹ on the proposed rule from ToxStrategies and Gradient explain in detail the scientific shortcomings in EPA's purported scientific basis for the ECEL. *See* Microporous Comment Tabs D, E. These reports are summarized briefly below. Given the weight of evidence detailed in these reports, and given the importance of battery separator manufacturing to the national economy, national security, and critical infrastructure, Microporous respectfully requests that EPA reconsider conditioning the Battery Separator Exemption on the proposed ECEL.

(a) EPA should modify the ECEL.

TSCA provides that in carrying out its Section 6 authority, "to the extent that [EPA] makes a decision based on best available science," EPA shall: (1) "use scientific information, technical procedures, measures, methods, protocols, methodologies, or models, employed in a manner consistent with the best available science" (15 U.S.C. § 2625(h)); and (2) "make decisions under [Section 6] ... based on the weight of the scientific evidence." (15 U.S.C. § 2625(i)) Yet, by EPA's own admission, the ECEL fails to meet either of these standards. In the 2020 Risk Evaluation, EPA acknowledged that "there is lower confidence in the dose-response and extrapolation of results" from the studies supporting the developmental endpoint, "resulting in uncertainty surrounding the precision of the derived [points of departure] for th[at] endpoint[.]"² Based on that uncertainty, EPA concluded that the developmental endpoint does not reflect "the best available science" or "weight of the scientific evidence."³

EPA's conclusions regarding the uncertain state of the science are correct. The ECEL rests primarily on a single study, Johnson et al. 2003 (the "Johnson Study"), that reported an increased incidence of cardiac malformations in the developing fetuses of pregnant rats orally exposed to TCE in drinking water.⁴ The Johnson Study, however, has been widely criticized in the literature due to numerous defects,⁵ as explained in the attached reports from Gradient and ToxStrategies, and summarized briefly below.

First, the Johnston Study reports results using pooled experimental data sets from different experiments conducted over a 6-year period—a methodology that introduces significant uncertainty in interpreting the study's results. (*Contra* 15 U.S.C. 2625(h)(1), (4)) As ToxStrategies explains, the purpose of testing all animal groups at the same time is to minimize the impact that factors other than the test chemical will have on the results. In the Johnson Study, however, there is clear documentation in the methods that water sources used in the earlier and later TCE dose groups across the 6-year period were not the same, raising the likelihood that some animals were exposed to unknown drinking water contaminants. Furthermore, given the poor documentation of the studies (*see* erratum by Johnson et al., 2014), it is likely that there were other

¹ The Microporous Comments were submitted to EPA Docket OPPT-2020-0642 on December 20, 2023. They are available on the docket, but Petitioner will provide hard copies of its Comments if requested by EPA.

²2020 Risk Evaluation § 4.5.2.1.

³*Id.*

⁴*See* 2020 Risk Evaluation § 3.2.5.1.6, App'x F § F.1.1.

⁵*See, e.g.,* Summary of External Peer Review and Public Comments and Disposition for Trichloroethylene (TCE): Response to Support Risk Evaluation of Trichloroethylene (TCE) at 178 (noting that multiple SACC members stated that the Johnson Study "lacked credibility and should not be relied on by EPA," noting that the study "reported adverse cardiac effects at TCE exposure levels that were orders of magnitude lower than no-effect levels of other investigators").

environmental and experimental inconsistencies in the conduct of the Johnson Study lab experiments that went unreported that may also have influenced their results.⁶

Second, rather than testing control groups concurrently with the associated exposure groups, the Johnson Study inappropriately pooled negative control group data in the same set of different experiments spanning six years. Again, this approach makes the study's results susceptible to undocumented differences in the environmental conditions, which were likely magnified in the Johnson Study laboratory over the extensive testing period. The combination of the different, variously sized control groups from across the different experiments also artificially inflates the statistical power of the study.⁷

Third, the Johnson Study's conclusions are based on TCE exposure groups that were poorly spaced and lack a meaningful dose-response relationship. As detailed in the Gradient Report, in one phase of the Johnson Study, there was no statistical difference in the rate of cardiac abnormalities between two exposure groups, despite a 733-fold difference in the TCE exposure concentrations between the groups. Similarly, for rats dosed only during the pregnancy period, there was no statistical difference between one exposure group and the controls. Also, the pooled data overall lack an interpretable dose-response relationship.⁸

Fourth, the levels of TCE in the drinking water used in the Johnson Study were not analytically verified. TCE has a high propensity to volatilize into the air, which makes maintaining consistent target concentrations of TCE in drinking water solutions particularly challenging. Without analytical verification, accurate dose and exposure information cannot be obtained, significantly reducing the "degree of clarity and completeness with which the data, assumptions, methods, quality assurance, and analyses employed to generate the information [in the Johnson Study] are documented." (15 U.S.C. 2625(h)(3)) The design of the Johnson Study exacerbated this problem because animals in the study were group-housed, with multiple rats drinking from the same bottle, further reducing the precision of dose calculations.⁹

Fifth, the Johnson Study's conclusions regarding congenital heart defects were based on a non-standard, unvalidated fetal heart dissection technique. As ToxStrategies explains, in all of the scientific literature, only one other peer-reviewed published study (Fisher et al., 2001) has employed the same dissection technique to evaluate chemical toxicology, and that group of investigators (which included Dr. Johnson) found no statistically significant increase in fetal heart malformations in rats exposed to TCE via drinking water.

Last, and most significantly, the Johnson Study's results have never been reproduced, despite multiple attempts. Two high-quality Good Laboratory Practice (GLP)-compliant rat oral

⁶See generally Microporous Comment Tab D, ToxStrategies Report § 5; Tab E, Gradient Report § 42.1.

⁷See Microporous Comment Tab E, Gradient Report § 4.1. As the Gradient Report explains, the Johnson Study also deviated from standard practice in developmental toxicology studies by failing to provide information to appropriately analyze the incidence of congenital heart defects per litter compared to time-matched concurrent controls, or to match individual fetus data to a particular dam. See *id.*

⁸See *id.*

⁹See Microporous Comment Tab D, ToxStrategies Report § 5; Tab E, Gradient Report § 2.1.

exposure studies (Fisher et al., 2001 and DeSesso et al., 2019) were specifically designed to reproduce the findings of the Johnson Study. Importantly, neither found evidence of an association between TCE exposure and congenital heart defects.¹⁰

In fact, among 13 developmental toxicology studies reported in the published literature that investigated the potential effects of TCE on fetal development in pregnant animals, the Johnson Study is the *only* one to report an association between exposure to low levels of TCE and congenital heart defects, with the other studies demonstrating a lack of association between *in utero* TCE exposure and fetal cardiac defects. This includes all inhalation studies, which represent the most relevant route of exposure for human occupational exposure.¹¹ As the Science Advisory Committee on Chemicals (“SACC”) observed, “cardiac developmental anomalies have not been described in any of six TCE inhalation studies in rodents,” and “data for the inhalation route would be preferred [to data from drinking-water studies] because inhalation exposures are most relevant to [the conditions of use].”¹² Given TSCA’s express requirement that EPA consider “the extent of independent verification” of the information on which it bases any scientific determinations related to risk management rules,¹³ the failure of any studies to replicate the Johnson Study’s results is a major problem.

One inhalation study in particular, Carney et al. (2006) (the “Carney Study”), highlights the degree to which the Johnson Study’s results are unreliable. In the Carney Study, no fetal cardiac malformations were observed in animals in any of the dose groups, which were exposed to up to 600 ppm TCE—more than 3,000 times higher than the *ECEL*—during gestation.¹⁴ The SACC expressly recommended that “trichloroethylene inhalation studies, notably that of Carney et al. (2006), should receive greater attention.”¹⁵ A systematic review by Wikoff et al. (2018) similarly found that the inhalation studies overall had lower Risk of Bias than the oral studies, using the Risk of Bias tool developed by the National Toxicology Program’s Office of Health Assessment and Translation, and that the Johnson Study had the highest Risk of Bias of all animal studies due to the defects identified above.¹⁶ Despite the SACC’s recommendation, however, EPA did not reconsider the Carney Study in the weight of the evidence assessment included in the final TCE Risk Evaluation, nor did it ever explain why it scored the Johnson and Carney Studies as having equal relevance.

¹⁰See Microporous Comment Tab D, ToxStrategies Report § 5.

¹¹See Microporous Comment Tab D, ToxStrategies Report § 5; Tab E, Gradient Report § 2.1.

¹²TSCA Science Advisory Committee on Chemicals Meeting Minutes and Final Report No. 2020-4, Recommendation 70 at 64 (Mar. 24-27, 2020) (hereinafter SACC Report).

¹³15 USC 2625(h)(5).

¹⁴See Microporous Comment Tab D, ToxStrategies Report § 5; see also SACC Report at 19 (“The cardiac effects reported by Johnson et al., seen at trichloroethylene exposure levels that are orders of magnitude lower than no-effects levels of other studies, have not been seen even at much higher doses in other investigations of trichloroethylene where heart effects were also examined.”).

¹⁵SACC Report at 19; Recommendation 70 at 64 (“Particular attention should be paid to the study by Carney et al. (2006) that reported no evidence of heart defects in progeny of dams exposed to as high as 600 ppm trichloroethylene vapor 6 hours/day, 7 days/week during gestation For this Evaluation, it appears data for the inhalation route would be preferred because inhalation exposures are most relevant to COUs. As a result, findings from studies based on the inhalation route of exposure offer less uncertainty on POD estimates.”).

¹⁶See Microporous Comment Tab D, ToxStrategies Report § 6.

None of the other evidence for the developmental endpoint adduced by EPA compensated for the Johnson Study's unreliability. EPA has attempted to bolster its reliance on the Johnston Study with epidemiological studies, but as ToxStrategies and Gradient explain, those studies have critical limitations that preclude them from supporting conclusions regarding the association between TCE exposure in humans and the incidence of fetal heart defects. For example, none of the studies directly evaluated quantitative exposure to TCE, resulting in a high potential for exposure misclassification. Furthermore, the studies lack controls for important confounding factors, such as preexisting maternal illness, infections during pregnancy, alcohol and drug use, and existing chemical co-exposures.¹⁷ Based on these limitations, SACC members commented that the studies provided only "weak" evidence for the association between TCE and congenital heart defects and urged EPA to "[r]econsider the scores assigned to the epidemiological evidence"¹⁸—a suggestion EPA wrongly declined to follow.

More recent studies further undercut reliance on those epidemiological studies. For example, in Liu *et al.*, (2021), a multicenter case-control epidemiological study that directly evaluated TCE exposure in the study population by measuring urinary TCE concentrations, the authors concluded that maternal TCE exposure was not associated with the occurrence of fetal cardiac defects. Further, Urban *et al.*, (2020) (the "Urban Study"), a recent systematic review integrating the human and animal evidence streams with available mechanistic data, concluded that "the totality of evidence does not support CHDs as a critical effect in TCE human health risk assessment."¹⁹

EPA also relied on mechanistic studies. But, as ToxStrategies details, there are substantial limitations to these studies, and the evidence base is quite limited when scrutinized through a systematic review process. The Urban Study found that the majority of the TCE-CHD mechanistic studies fail to meet study quality standards for inclusion in risk assessment, with the most common issues being the inadequate reporting of test article and solution information, data analysis, and the failure to test for potential cytotoxicity at the tested TCE concentrations (which can result in false positives). Based on their systematic review of the mechanistic evidence base, the Urban Study concluded that the available mechanistic data could not be developed into any coherent mechanistic or adverse outcome pathway ("AOP") that might provide biologically plausible support for the TCE-CHD hypothesis. The SACC offered a similar criticism, noting that EPA's risk evaluation "did not integrate and organize the mechanistic data into a coherent causal pathway from initial exposure to adverse outcome," and describing the mechanistic studies as of "limit[ed] ... relevance."²⁰ These criticisms cast serious doubt on EPA's view that the mechanistic data are stronger and more reliable than either animal or human databases.²¹

For these reasons, EPA lacks a basis to implement the ECEL. Importantly, since issuing the 2020 Risk Evaluation, EPA has never argued, let alone attempted to show, that the developmental endpoint reflects the best available science. The Agency did not address the issue at all in the Revised Final Risk Evaluation. In the Proposed Rule, EPA's only justification for relying on that endpoint was that comments led to "concerns pertaining to political interference

¹⁷See Microporous Comment Tab E, Gradient Report § 2.1.

¹⁸SACC Report Recommendation 71 at 65.

¹⁹See Microporous Comment Tab E, Gradient Report § 2.1.

²⁰SACC Report Recommendation 72.

²¹See 2020 Risk Evaluation App'x F § F.3.2 tbl. Apx F-13.

and scientific integrity, among other issues.” (88 Fed. Reg. at 74,723) EPA does not acknowledge or address the well-documented scientific flaws and uncertainties that have been published in the peer-reviewed literature and does not address the SACC’s concerns with the use of this endpoint as the basis of a quantitative risk assessment. Even granting the vague concerns EPA identified, nothing prevents EPA from attempting to show that the developmental endpoint reflects the best available science and is supported by the weight of scientific evidence. EPA’s failure to do so is plainly contrary to TSCA’s requirements.

2. Compliance with the ECEL as a condition of the Battery Separator Exemption would be unreasonable and unworkable.

EPA proposed and is finalizing a requirement to comply with a WCPP, which includes monitoring, adherence to industrial hygiene best practices, and requirements to meet an interim ECEL as a condition for most of the conditions of use for which a phase-out or time limited exemption was provided. (89 Fed. Reg. 102,572) The type of respirator required would be based on OSHA’s regulations at 29 C.F.R. § 1910.134(d)(1) and on an exposure concentration scale for the minimum required respirator protection. (See 88 Fed. Reg. at 74,741-42)

Additionally, monitoring frequencies would be tied to air concentration conditions. For example, if monitoring indicates that airborne exposure is above the ECEL, then periodic exposure monitoring would be required within three months. (See 88 Fed. Reg. 102,602) Thus, for facilities that consistently exceed the ECEL, monitoring would be required at least every three months for the duration of the exemption period. Under these requirements, if Microporous “cannot demonstrate exposure below the ECEL or exposure at the lowest achievable level for the facility, including through the use of engineering controls or work practices,” and cannot “demonstrate[] that it has supplemented feasible exposure controls with respiratory protection,” this would constitute a failure to comply with the ECEL. (88 Fed. Reg. at 74,790)

Despite the robust engineering and administrative controls in place at Microporous’ Piney Flats plant explained above, it is not possible to meet the ECEL. Microporous already has implemented robust engineering and administrative controls at its Piney Flats, Tennessee plant, including installing a new line in 2021 using the newest, best-in-class technology, and Microporous knows of no additional feasible engineering or administrative controls that would enable Microporous to avoid the proposed WCPP’s mandate that workplaces exceeding the ECEL must have employees wear supplied-air respirators at all times. As detailed below, the constant use of such respirators is simply unreasonable and would pose a significant risk to Microporous workers.²²

These infeasibility conclusions are consistent with the EPA’s own findings. EPA itself acknowledges that compliance with the ECEL will be unachievable by administrative and engineering controls. In its November 2023 webinar on the Proposed Rule, EPA rightly noted that “[m]eeting the ECEL presents significant challenges” and “[c]annot be achieved just through engineering and administrative controls: would require workers to be in PPE of Assigned Protective Factor (“APF”) 10,000 or above, which is not feasible long term.”²³ (Emphasis added)

²²See Microporous Comment Tab C, Ramboll Report § 2.2.2.

²³November 2023 EPA Webinar, Slide 17.

In the preamble to the Proposed Rule, EPA specified that the Agency “believes that the extremely low ppm level of the ECEL . . . will be infeasible for industry to reliably meet due to the need for a combination of engineering, administrative controls, and full-face, self-contained, air-supplied respirators.” (88 Fed. Reg. at 74,762) EPA thus requested comment on “the feasibility of controlling worker exposures to TCE at or below the proposed ECEL, and the accuracy of measurements at this level,” recognizing potential detectability problems as well. (See 88 Fed. Reg. 74,737) Such feedback, EPA noted, was “important for determining whether there are realistic and effective exposure controls that can be used by industry for effectively controlling exposures to levels at or below the ECEL.” (88 Fed. Reg. at 74,737) EPA modified the ECEL in *TCE; Regulation under TSCA* to 0.2 ppm; however, the ECEL remains unachievable with engineering and administrative controls.

In stark contrast to EPA’s ECEL of **0.2 ppm** for an 8-hour time-weighted average, OSHA has set the Permissible Exposure Limit (“PEL”) at **100 ppm** for the same 8-hour time-weighted average. Additionally, the NIOSH 10-hour TWA standard is 25 ppm, and the American Conference of Governmental Industrial Hygienists (“ACGIH”) 8-hour TWA standard is 10 ppm. OSHA has determined that the 100 ppm exposure limit “most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life.” (29 U.S.C. § 655(b)(5)) As discussed below, the same feasibility considerations must inform EPA’s determination of what conditions to impose on an exemption under TSCA Section 6(g).

3. The WCPP respirator requirements proposed as a condition of the proposed Battery Separator Exemption are infeasible and unreasonable.

Because the ECEL is unachievable for Microporous to attain using feasible engineering and administrative controls, under the proposed WCPP, the natural result is that all Microporous plant workers would need to be equipped with supplied-air respirators at all times.²⁴ Such a mandate in an industrial setting like Microporous would be wholly unprecedented in U.S. industry, to Microporous’ knowledge.

EPA, however, has specifically acknowledged that its respirator requirements are infeasible and not a “long-term ... feasible means of addressing unreasonable risk.” (88 Fed. Reg. at 74,766) In the November 2023 webinar on the Proposed Rule, EPA explained that “[u]ncertainty about WCPP implementation is a driving factor” behind its decision to propose an outright ban of TCE rather than permit its use subject to implementation of a WCPP.²⁵ In particular, EPA recognized that the “complexity and burden of wearing respirators increases with increasing APF.” (88 Fed. Reg. at 74,764) Therefore, “[g]iven the high APF of respirators that are likely needed to reach the ECEL, EPA recognizes that this equipment and its programmatic maintenance could be highly burdensome.” (*Id.*)

²⁴See proposed 40 C.F.R. § 751.311(3)(iii)(G), at 88 Fed. Reg. 74,791; see Microporous Comment Tab C, Ramboll Report § 2.2.2.

²⁵November 2023 EPA Webinar, Slide 16.

OSHA's respirator standards unquestionably are onerous and generally do not accommodate or contemplate respirator use by all employees working at a large-scale industrial plant. Among other standards, 29 C.F.R. § 1910.134 requires a medical evaluation and respirator fit testing for each employee donning a respirator. (29 C.F.R. §1910.134(e), (f)) Individuals who fail either of these qualifying tests cannot wear a respirator, nor can employees with facial hair or any other condition that interferes with the face-to-facepiece seal or valve function. (29 C.F.R. §1910.134(e), (f), (g)(1)) Furthermore, all respirators used must be managed under frequent disassembly, disinfection, and inspection protocols (including a requirement that unless each employee is provided his or her own exclusive respirator, each respirator must be fully disinfected between wears) and prescriptive storage requirements. (29 C.F.R. § 1910.134(h)(1), (2))

The WCPP's respirator requirements are technically and operationally infeasible when applied to Microporous' operations for the following reasons, among others explained in the attached reports:

- Microporous would only be able to employ those people who could pass a medical evaluation and respirator fit test. EPA has acknowledged that "not all workers may be able to wear respirators. Individuals with impaired lung function due to asthma, emphysema, or chronic obstructive pulmonary disease, for example, may be physically unable to wear a respirator." (88 Fed. Reg. at 74,764-65) With respect to the latter, that is because, as EPA explains, "[i]ndividuals with facial hair, such as beards or sideburns that interfere with a proper face-to-respirator seal, cannot wear tight fitting respirators."²⁶ Thus, implementation of the WCPP effectively means Microporous would have to significantly reduce its workforce, then seek to replace all of those employees.
- As EPA has indicated, mandating respirators for all employees in and around the plant poses serious safety and access hazards. Among the numerous risks posed are the following, which are present at the Microporous plant:
 - Employees' vision and hearing will be impaired, reducing their situational awareness and ability to identify dangerous conditions putting their safety in jeopardy.²⁷
 - Use of respirators presents problems with maneuverability and with the ability to perform basic tasks. At Microporous, due to the configuration of the workspaces and the high density of machinery, respirator units and hoses could easily become caught on objects, particularly when working in narrow areas.
 - Employees occasionally need to climb ladders in the multi-level plant, which would be dangerous to do wearing respirator equipment. Access may in fact not be feasible, as these are often caged ladders for fall protection without space for respirators.

²⁶*Id.*

²⁷*Id.* at 13. ("Respirators can interfere with vision, communication, worker activities, and interactions with the head.")

- Respirators greatly increase the risk of heat exhaustion during spring and summer months (particularly in Tennessee) by stifling air flow and body heat escapement. Microporous' process equipment adds to the heat issues, posing potential risks of both worker heat stress and potential melting of respirator tank and hose equipment. Moreover, maintenance workers have to access certain enclosures at Microporous where the temperatures range from 90-110° F, adding to the fatigue and risks of heat stress.
- Microporous maintenance employees must perform electrical testing, which will become challenging if not impossible for workers wearing respirators. Electrical testers must wear arc flash-protectant shirts, gloves, and hoods, which do not also accommodate full- or half-face respirators. Microporous and its experts (Gradient and Ramboll) know of no commercially available supplied-air respirators rated to provide arc flash protection. Failure to use rated clothing and equipment increases the risk of electrical burns and injuries from arc flash.
- Microporous' plant would have to be substantially, if not entirely, reengineered and reconstructed to provide the requisite storage for the respirator equipment. Under pressurized air safety considerations, storage areas would need to be dry, well-ventilated, without temperature extremes, protected from physical impacts, with valve caps, and away from flammable materials and sources of heat. The program here would require Microporous to procure and store hundreds of respirator units, requiring significant space to safely store such equipment. With about 50 employees working at the plant during any given shift, and with each employee needing to change their air tanks every 30-minutes, Microporous would need to construct and accommodate at minimum around 45 separate refilling stations to ensure adequate and safe air supply and refilling access. Similar engineering, physical, and operational challenges prevent Microporous' plant from being reconfigured to accommodate supplied air lines for all plant employees. Microporous' plant simply cannot accommodate the requirements necessary to provide supplied air from respirators to all employees at all times and maintain its separator production at any meaningful rate.
- The program entails logistical impracticalities and dangers. For example, vendors, contractors, and other visitors would have to obtain medical and fit-test clearance to wear SCBA prior to even entering the building to perform inspections, conduct tours, or provide emergency response efforts.
- As noted above, a supplied air system would be similarly infeasible for many of the same reasons. Again, the entire plant would need to be substantially, if not entirely, rebuilt to ensure that all plant workers were provided safe and reliable supplied air.

These WCPP components also are infeasible from an employment perspective, as “worker acceptability” – the willingness to comply with this extraordinarily burdensome requirement – would be a significant problem. This is well established by the literature.²⁸ Many workers simply

²⁸*Id.* at 14 (“the willingness to wear and make proper use of respirators is a significant problem”).

may find the requirement unacceptable, leading to employees leaving or simply being unable to comply. Piney Flats, Tennessee is a small, rural town. As a practical matter, finding and retaining enough technologically skilled workers to staff our sophisticated plant is already a challenge. Subjecting all of those employees to full-time respirator use and frequent personal breathing zone monitoring protocols simply will likely not be accepted by Microporous' workforce. Even beyond the problems detailed above, on a fundamental level, wearing these respirators during all hours of all shifts would make working at Microporous an intolerable experience. Microporous retention and recruitment, as well as employee autonomy and quality of life will be severely compromised under the WCPP. This, too, undermines the exemption's protection and purpose. Microporous is not aware of any manufacturing workplace where, in the normal course, employees are expected to wear full supplied air respirators for full 8-hour shifts, let along 12-hour shifts, every day for the duration of their employment.

Fortunately, TSCA Section 6(g) does not require all day every day WCPP or respiratory protection as a condition on exempt uses. EPA has recognized its ability to relax infeasible conditions for exempt uses, as it did so in the perchloroethylene ("PCE") TSCA risk management rulemaking. There, EPA proposed a Section 6(g) exemption for NASA's use of the chemical in human space flight, under which NASA must comply with the WCPP only "to the extent technically feasible." (88 Fed. Reg. 39,682) To exempt NASA's use from full WCPP compliance, while requiring such compliance for Microporous' use, which is critical to the nation's everyday functioning, is counter to the purpose of TSCA Section 6(g). Given the extreme infeasibility of the WCPP's respirator requirements in Microporous' use, they are unreasonable and violative of TSCA § 6(g)(4). Accordingly, the Battery Separator Exemption must not subject exempt TCE users to the requirements, as proposed.

VI. A 25-Year Exemption, with an Extending Term, Authorizing Its Continued Use of TCE Until a Safer, Feasible Alternative is Available is the Appropriate Action for EPA.

TSCA Section 6(g) directs EPA to establish a "time limit" for each exemption, the duration of which is "to be determined ... as reasonable on a case-by-case basis." (15 U.S.C. § 2605(g)(3)) Based on the critical nature of Microporous' use and the current lack of any technically safer or economically feasible alternative, Microporous requested that EPA establish an initial 25-year period of exemption that renews for a progressive term until a safer and economically feasible TCE alternative is available for manufacturing battery separators.

While EPA's general concerns regarding the use of TCE in the U.S. certainly are understandable, the U.S. battery separator manufacturing industry, and Microporous specifically, have extensive safety and exposure control protocols in place to maximize plant safety for employees. The effectiveness of these protocols is supported by robust data. Accordingly, accounting for all available information related to the use of TCE in the manufacture of battery separators, its importance to the national economy and defense, the lack of viable alternatives, and the extensive workplace safety controls, Microporous initially requested an exemption under TSCA Section 6(g)(1) for the continued and limited use of TCE in the manufacture of battery separators for a period of not less than 25 years. Microporous renews this request for the reasons set forth in its prior comments that are included in Microporous Comment Tab A. Microporous also provided letters submitted to EPA by its customers underscoring the need for a 25-year

exemption period and modifications to the proposed conditions for the 20-year exemption in Microporous Comment Tab B.

As discussed below, the term of the exemption is justified, as highlighted by very recent developments regarding PFAS. The battery separator industry, including Microporous, has been searching for a viable alternative to TCE since 2014. In those ten years, Microporous has invested more than \$2 million in this research and still has not found a safer alternative solvent with the necessary properties for use in its battery separators. Microporous and others have evaluated more than a dozen potential alternatives without identifying one feasible alternative. Many of these candidates did not meet oil extraction needs, were not as easily recovered for re-use, were flammable, would require complete redesign and construction of manufacturing processes, or would need to be blended with other chemicals that are being phased out or subject to restrictive regulation such as materials that EPA has categorized as PFAS. Most recently, Microporous was pursuing a potential alternative by a major supplier, 3M. The potential alternative contained raw materials that EPA has defined as PFAS. 3M recently announced that it is removing PFAS from all its products, thereby making this potential alternative unavailable.

It is a reasonable estimation that it will be another four to six years before a suitable alternative is identified. Once that alternative is identified, the period for trial use, customer vetting and approval, and construction of a new manufacturing plant is expected to last at least fifteen to twenty years. This means that a reasonable range for the exemption is 22 to 30 years.

A. EPA has recognized that Microporous' TCE use qualifies for the Section 6(g)(1)(A) exemption because Microporous' TCE use is critical and essential, with no available technically and economically feasible safer alternative.

Under TSCA Section 6(g)(1)(A), EPA may exempt uses that are critical or essential that have no technically and economically feasible safer alternative available, taking into consideration hazard and exposure. Microporous' conditions of use meet these criteria and EPA has recognized this fact by granting the Battery Separator Exemption in the Proposed Rule. Microporous' critical and essential use of TCE bears repeating because it is integral to the 25-year exemption.

1. Microporous' TCE use is critical and essential.

As described above, Microporous' manufacture of battery separators is both a "critical" and "essential" use, and the only proven alternative presents an extreme explosive hazard. Every single heavy-duty vehicle and every mass-market passenger vehicle—including electric vehicles—relies on one or more lead acid batteries that are critical to the operation of the vehicle. Lead acid batteries also provide critical back-up emergency power to nearly all data centers, telecommunications centers, and other essential assets. Both lead acid and lithium-ion batteries require battery separators for operation. Of the battery separator market, 80% is supplied by batteries utilizing TCE. In fact, all battery separator manufacturing plants constructed over the past 40 years have been based on TCE technology, supporting the notion that this technology is the most effective and efficient process aid.

Absent battery separators manufactured with TCE, domestic battery manufacturers would have few, if any, means to obtain these critical components. Theoretically, they would have two

options: (1) purchase domestic-made separators made without TCE (the current supply of which would likely support less than half of the U.S. battery production need); or (2) import foreign battery separators made with TCE, hexane (lead-acid), or methylene chloride (lithium).

With respect to the first option, only one domestic lead-acid battery separator manufacturer does not use TCE. That producer uses the solvent hexane, an explosive, volatile, highly flammable neuro- and reproductive toxin, the use of which also presents significant human health risks. (See Microporous Comment Tab A) Other domestic producers would not be able to meet the displaced lead-acid battery separator demand if the use of TCE in battery separator manufacturing was prohibited. For lithium battery separators, only one domestic manufacturer does not use TCE, and its “dry process” separator manufacturing process does not allow it to produce reliably the 9-12 micrometer (um) separators of choice for electric vehicle applications.

Therefore, the only potential alternative is to import “wet process,” non-TCE alternative separators that are produced using methylene chloride, a suspected carcinogen and cause of significant non-cancer health risks, for which EPA also is engaging in TSCA risk management rulemaking and which likely will be subject to future restrictions.²⁹

With respect to the second option, forcing domestic battery manufacturers to rely on imported separators not only imposes significant new financial, logistical, and administrative costs on these entities, but also raises grave national security and energy independence concerns. Again, based on Microporous’ projections, it is unlikely there is enough global supply to support the full demand of the domestic battery manufacturing sector.

2. No technically and economically feasible safer alternative to TCE is available for Microporous’ use.

Microporous’ ongoing research and development analyses have repeatedly found there is no alternative solvent currently available that is technically and economically feasible or safer than TCE in Microporous’ process. Thus far, no such alternative solvent or solvent-free process exists, but Microporous continues to research alternatives to TCE and ways to transition to other solvents or to eliminate solvent use altogether.

Microporous uses TCE at its Piney Flats, Tennessee facility because of TCE’s ability to solubilize contaminants such as oil, and because TCE is non-flammable with a high boiling point and therefore less of an explosion hazard. Hexane, the alternative solvent, has an extremely low flashpoint and tends to evaporate readily at room temperature, and chronic exposure to hexane can have detrimental effects on peripheral neurons. Therefore, Microporous considers hexane to be more of a safety hazard than TCE and therefore unsuitable for use as a regrettable TCE alternative.

Microporous’ ongoing alternatives analyses also are evidenced in Microporous’ submissions under Europe’s analogue to TSCA, the Registration, Evaluation, Authorization and Restriction of Chemicals program (“REACH”). As part of Microporous’ most recent REACH Authorization application seeking to authorize TCE use at Microporous’ plant in Feistritz, Austria, Microporous prepared a robust alternatives analysis, a copy of which Microporous provided in its

²⁹See EPA, Risk Evaluation for Methylene Chloride (Dichloromethane, DCM) CASRN: 75-09-2, § 5.2.1.30, at 753 (June 2020).

August 10, 2022 exemption request letter attached in Microporous Comment Tab A. The European Chemicals Agency has authorized Microporous' continued TCE use at the Austria plant until at least 2035, with an option for a 12-year extension of the authorization, for a total of 25 years.

Once Microporous identifies a suitable TCE alternative, it must initiate and complete the capital expenditure process to modify or replace the existing process equipment in the Piney Flats facility. The design, testing, procuring, installation, and start-up process would take five years or longer, depending on today's equipment availability.

Moreover, before utilizing a new separator product manufactured with an alternative to TCE, battery manufacturers must initiate and complete new product testing and approval processes. Industry testing requirements restrict and delay the practical availability of any alternative solvents by two to three years depending on the number of iterations requiring evaluation. Before any alternative solvent could be brought online on a commercial scale, separators produced with the alternative solvent would need to be qualified through a formal customer approval process, including rigorous field testing and performance analysis. Over the past nine years, few alternative candidates have been identified, and to date, none have moved past a feasibility evaluation, through the qualification process, and to completion of the design and build of the new manufacturing process. Given this history, the identification of a suitable solvent through Microporous' research initiatives and the subsequent negotiated commercialization with a company such as 3M (absent PFAS) could take 15 years or more to complete.

In addition, once an alternative solvent has been commercialized, Microporous' battery manufacturer customers have indicated that battery separators produced under changed processes (*i.e.*, with a new solvent) would need to be tested internally for a period of approximately two years. After internal testing, the battery manufacturers' customers would then need to test each product individually, which likely would span another year for aftermarket applications and two years for original equipment manufacturer ("OEM") applications, after some waiting period to advance through the testing queue. That queue could extend up to two years because battery manufacturers typically wait to approach their customers to test a new product until there are multiple, accumulated changes ready to be approved. Thus, any single change, such as a separator made with a new extraction solvent, could face a significant potential waiting period before the approval process could begin, as reflected in **Table 1** below (which assumes a single alternative is commercially available). In addition, battery manufacturing customers have informed Microporous that new products must be gradually phased into the market (as there would not be an instant substitute/swap) over a period of at least two to four years, as the product would have to establish its reputation on the market in terms of cost effectiveness and durability. In the end, the entire implementation process for a TCE alternative likely could take well more than 25 years to complete. EPA's 20 year exemption period simply is not long enough.

Table 1

Action	Time Period
Evaluation of Reasonable Alternatives	4-6 Years
Sample Trials	2-3 Years
Lab Battery Test	2-4 Years
Customer Trials	2-3 Years
Equipment Sourcing/Engineering/Installation	3-5 Years
Scale up/Process Validation	2-3 Years
Customer Samples Validation	3-4 Years
End Use Customer Validation and PPAP	2-3 Years

3. Microporous' sophisticated control measures minimize TCE hazard and exposure.

Microporous understands the potential human health risks of TCE and has developed a robust suite of control measures to protect employees at its Piney Flats plant from the reported dangers of exposure to TCE, including sophisticated engineering controls, training, and personal protective equipment ("PPE"). Microporous installed a new line in 2021 using the newest, best-in-class technology to minimize employee exposure to TCE. The attached Ramboll Report (Microporous Comment Tab C) describes Microporous' control measures.

Employees at the Piney Flats plant receive hazard communication training and an initial, one-time safety and environmental orientation training upon hiring. Many topics are covered during each orientation, including TCE usage and management. During the safety orientation, the presenter discusses the safety aspects of TCE, such as what PPE to wear and the health effects and symptoms of short and long-term exposure. The environmental orientation covers aspects such as cleaning up spills, keeping TCE inside containment and out of soil and groundwater, and proper disposal practices. Additionally, employees within the facility who work with solvents of any kind, receive an additional training called *Working Safely with Solvents* that covers topics such as the general physical and health hazards of solvents as a group, general labeling, first aid, PPE, fire prevention, spill cleanup, environmental damage, and how to obtain additional information from safety data sheets.

Microporous institutes administrative controls to minimize employee exposure to TCE, including limiting the time personnel are allowed to enter spaces where they could be potentially exposed. Microporous also has a series of work instructions for various employee positions that identify PPE to be worn by employees, including chemical-resistant gloves, chemical-resistant

aprons, goggles, and face shields if splash hazards exist. Employees working in the TCE process areas receive respiratory protection training and are assigned either a half-face or full-face air purifying respirator. Any entry inside the extraction enclosure requires the use of an air purifying respirator, regardless of the duration of the entry. Facility policy is to limit entry into the enclosure to 15 minutes at a time. Further, ambient air from inside the extraction enclosure is vented to the carbon beds to capture TCE vapor.

A summary of Microporous' TCE exposure control efforts is included in the *Evaluation of the Use, Storage, and Management Practices Related to Trichloroethylene (TCE) at the Microporous, LLC Facility* report prepared by ERM, provided with Microporous' August 10, 2022 exemption request letter that is attached in Microporous Comment Tab A.

EPA has been tasked with evaluating the "unreasonable risks of injury to health" associated with the use of TCE under TSCA. EPA has indicated that the risks from workplace exposure are a significant factor in its review of the continued use of TCE. Understanding this risk, Microporous focuses significant resources on minimizing workplace exposure and emissions of TCE. Microporous has implemented administrative and engineering controls to protect its workers from unnecessary exposure to TCE and minimize chemical losses from the manufacturing process. Microporous utilizes a closed loop process and regenerative carbon beds to minimize TCE losses and employee exposure points. Microporous limits the amount of time personnel spend in places of potential exposure and conducts exposure monitoring with lab analysis for time weighted average indicators. These employee protection measures are vitally important to Microporous. However, they become irrelevant when faced with EPA's proposed ECEL and WCPP requirements.

In the end, Microporous firmly believes that the Battery Separator Exemption must be for 25 years. Any shorter timeframe is a death-knell for the battery separator industry as it exists today, including Microporous.

B. Anything short of a 25-year exemption would significantly disrupt the national economy, national security, and critical infrastructure.

Under TSCA Section 6(g)(1)(B), EPA may exempt a specific condition of use if requiring compliance with the otherwise applicable risk management requirements for the use would significantly disrupt the national economy, national security, or critical infrastructure.

As discussed above, TCE is essential to Microporous' production process, and there is no safer technically and economically feasible alternative to TCE currently available for Microporous' use. The cost and time required to reconfigure the plant to replace TCE with another solvent would force, at minimum, an indefinite plant closure, and more likely, a complete shutdown. In short, any ban or substantive restriction on Microporous' TCE use would force the PE portion of the Piney Flats, Tennessee plant to cease operations.

Further, nearly the entire U.S. economy is dependent on lead acid and lithium-ion batteries manufactured using TCE, so prohibiting its use in the manufacture of battery separators would "significantly disrupt the national economy, national security, or critical infrastructure." Our national defense, transportation, and communication sectors, among many others, are dependent

on battery separators manufactured with TCE (at least 80%). If the use of TCE in the U.S. is prohibited by the Proposed Rule, the U.S. will be forced to depend on foreign suppliers for its batteries, harming the U.S. economy and risking national security. The downstream effects of any such disruption would ripple through the national economy, including within multiple critical infrastructure sectors, and render the U.S. dangerously reliant on foreign separator suppliers to the extent adequate foreign supplies can even be made available.

C. Microporous' TCE use qualifies for a 25-year exemption because the condition of use of TCE for the manufacture of battery separators, as compared to the lack of reasonably available alternatives, "provides a substantial benefit to health, the environment, or public safety."

The condition of use of TCE for the manufacture of battery separators, as compared to the lack of reasonably available alternatives, "provides a substantial benefit to health, the environment, or public safety." At this time, hexane is the only proven alternative to TCE for use in the manufacture of battery separators. Hexane, however, is a highly flammable neurotoxin and reproductive toxin that presents a significant explosive hazard. The risks of using hexane greatly outweigh those of TCE. While hexane technically is an alternative, it is not practical, and quite possibly presents a significantly greater acute risk profile. It simply does not make sense to replace one solvent (TCE) with a regrettable alternative (hexane) that does not provide additional benefit to health, the environment, or public safety, and actually increases the risk of harm.

Additionally, Microporous began researching alternatives to TCE use in its battery separators in 2014 in an effort to eliminate the TCE-related exposure risks to its employees. Unfortunately, to date, after many years and significant financial investment in research, no viable alternative has been identified. Considerate of the regulatory and safety concerns surrounding the continued use of TCE in its process and consumer products, Microporous continues to invest resources into identifying and validating alternative solvents for use in its battery separators.

VII. Conclusion.

TCE; Regulation under TSCA is fundamentally flawed, and its implementation should be stayed pending reconsideration. Microporous appreciates EPA's recognition of the national importance of Microporous' battery separator production and related Battery Separator Exemption. As discussed above, a potential collapse of the U.S. lead acid and lithium-ion battery industry would jeopardize U.S. national security interests, eliminate thousands of jobs, cause billions of dollars in revenue losses for the U.S. economy, and increase U.S. dependence on foreign supply of batteries. Therefore, Microporous' requests EPA reconsider its request that EPA grant a TSCA Section 6(g) exemption for TCE use in the manufacture of battery separators for a period of not less than 25 years. Microporous further requests that EPA recognize the fundamental flaws with EPA's proposed Battery Separator Exemption, namely the non-scientific based ECEL, the unwieldy respirator and monitoring requirements of the WCPP. Microporous requests the changes to the *TCE; Regulation under TSCA* discussed herein. With those changes, Microporous' continued use of TCE for the 25-year exemption period will remain protective of human health and the environment while preserving national security, the economy and critical infrastructure.

While EPA is reconsidering a rule, Microporous requests a stay of the Final Rule, as further discussed next. Staying the effective date of the rule until EPA completes its reconsideration process will avoid imposing compliance costs prematurely and avoid confusion among facility personnel from learning potentially unnecessary requirements imposed by the Final Rule. A stay would afford EPA the time necessary to reconsider its Final Rule fully.

REQUEST FOR STAY PENDING JUDICIAL REVIEW

In addition to this petition for reconsideration, Microporous has filed a petition for review in the U.S. Court of Appeals for the 6th Circuit challenging the Final Rule on the grounds that EPA exceeded its statutory authority, failed to follow procedures required by the APA for agency rulemaking, did not adequately consider costs or assess benefits, and did not adequately respond to all significant comments, among other grounds. While judicial review is pending, Section 705 of the APA allows EPA to stay the effective date of a final rule if it “finds that justice so requires.” 5 U.S.C. § 705. Microporous requests that EPA make such a finding here.

Both EPA and the courts have applied the four-part test for preliminary injunctions to determine whether “justice so requires” a stay of agency action pending judicial review. Under that standard, the Agency must consider and moving parties must demonstrate: (1) a likelihood of success on the merits of the judicial challenge; (2) irreparable harm to the moving party if the stay is not granted; (3) the potential for harm to others if the stay is granted; and (4) whether the public interest weighs in favor of granting the stay. As explained above and below, each of these factors weighs in favor of staying this Final Rule until the resolution of judicial review.

I. Microporous Is Likely to Succeed on the Merits.

Microporous’ challenge to the Final Rule is likely to be granted on its merits because the Final Rule is arbitrary and capricious, among other defects. First, the conditions imposed EPA as part of the WCPP are unwieldy and not feasible, among other arbitrary aspects of the Final Rule discussed in detail above. EPA has failed to provide an adequate explanation as to how the WCPP is feasible, and such a contention is contrary to the EPA’s own findings and the administrative record. Moreover, EPA failed to consider sufficiently other, more feasible alternatives to the ECEL. Indeed, the ECEL does not reflect the best available science nor the weight of the scientific evidence, as shown through EPA’s reliance on a limited number of flawed studies. Finally, the substantial costs imposed by the Final Rule substantially outweigh its benefits, as described above.

For these reasons and others, Microporous’ petition is likely to succeed on the merits and be granted.

II. Microporous Will Suffer Irreparable Harm.

Microporous will suffer immediate and irreparable harm if the Final Rule is not stayed. The Final Rule would impose millions of dollars of compliance costs on Microporous that could never be recovered in the event that Microporous’ legal challenge was successful. Microporous must incur such costs immediately to meet the Final Rule’s compliance deadlines; it cannot wait resolution of its legal challenge.

In addition to substantial costs, the Final Rule will irreparably harm Microporous' workforce and operations. The WCPP will cause Microporous to lose skilled employees in a rural area with a limited workforce. Those employees that comply will suffer from substantial workplace hazards associated with the onerous personal protective equipment that would be required. The likely disruptions to Microporous' workforce will cause a corresponding disruption to Microporous' operations and productivity, which, in turn, will jeopardize its ability to continue producing lead-acid battery separators. The Final Rule should be stayed to avoid the irreparable harm of forcing Microporous to comply.

III. Other Interested Parties Would Not Suffer Harm By Temporarily Staying the Rule.

While Microporous and other regulated entities will suffer irreparable harm if they must begin implementing the Final Rule's requirements while judicial review is pending, granting a stay would not cause substantial harm to other parties. Many of the Final Rule requirements apply in reaction to specific events. Thus, while Microporous must prepare itself to address those criteria if the relevant circumstances arise, any alleged benefits from the new provisions would not accrue to the general public or environment until such an event occurred.

In addition, it is not clear to Microporous (or to EPA apparently) how much or even whether the provisions of the Final Rule will in fact generate benefits. In both the Proposed Rule and the Final Rule, EPA explicitly stated that it could not quantify or even describe the benefits it expected to accrue from the proposed or final provisions. It instead resorted to quantifying and describing past harms to property and people. EPA thus has not, and presumably cannot, demonstrate that the provisions included in the Final Rule will generate benefits for the public or environment, as a whole or individually.

IV. A Stay Is in the Public Interest.

Staying the effective date of the Final Rule is in the public interest. Allowing the Final Rule to remain in effect pending judicial review imposes substantial costs on regulated entities that they will not recoup, while providing no demonstrable benefit to the general public or the environment. EPA has not demonstrated that any of its finalized provisions would improve safety. Similarly, the public interest would be furthered by ensuring that funds spent complying with regulatory demands in fact yield measurable benefits.

More fundamentally, the Final Rule threatens the productivity, if not viability, of the domestic battery manufacturing industry, which, in turn is needed to manufacture military vehicles used in furtherance of national defense and security, as well as most other non-military vehicles in the U.S.

CONCLUSION

For the above reasons, Microporous requests that EPA reconsider and rescind its Final Rule and stay the effective date of the Final Rule for the duration of administrative proceedings and judicial review.

January 10, 2025

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "SD Weber", with a stylized flourish extending to the right.

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