



# Trichloroethylene (TCE) TSCA Risk Management

## Chlorine Panel OMB Meeting

Date: October 15, 2024

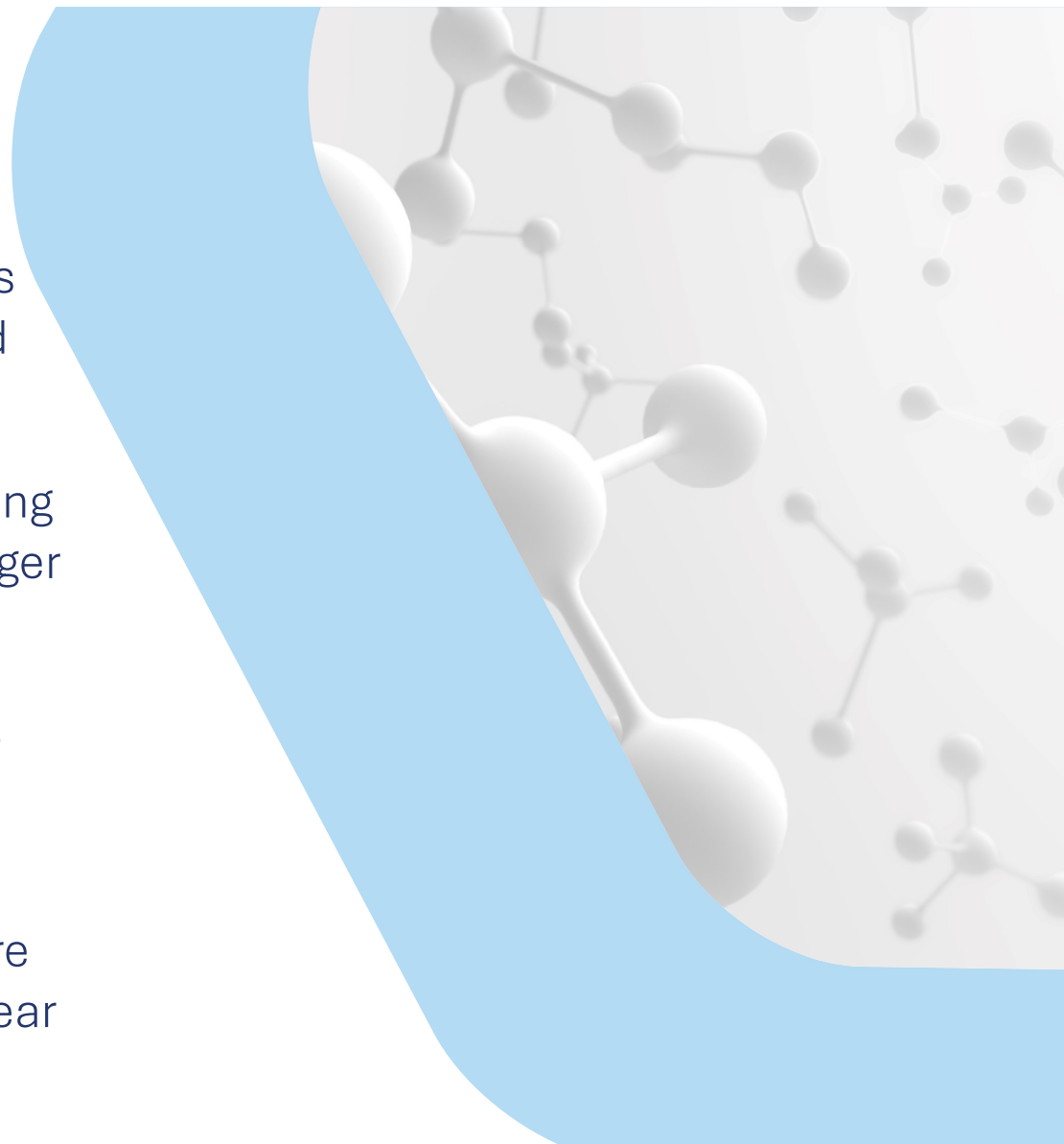
## Industrial Uses of TCE

- Metal degreaser
- Solvent in chemical manufacturing
- Intermediate in chemical production
- Closed-loop system



## Concerns About the Scientific Basis

- Animal studies on fetal cardiac defects and autoimmunity lack replication and broad support.
- EPA's advisors recommend against using these studies, urging reliance on stronger data.
- Peer reviews find the evidence for fetal cardiac defects unreliable for risk assessment.
- Immune studies in mice show exposure issues, inconsistent results, and no clear dose-response.



## Issues with Proposed Existing Chemical Exposure Limits (ECEs)

- Proposed ECEs (1.1 ppb and 4 ppb) are lower than existing limits and analytical detection capabilities.
- Compliance is nearly impossible under these limits.
- Recommend adopting a technology-based approach for exposure control.



# Consideration of Non-Risk Factors in ECEs



**Acknowledgment of Difference:** The revised TSCA Risk Evaluation Framework Rule notes that an ECEL for risk management may differ from an OEV (Occupational Exposure Value) calculated during risk evaluation. For TCE, only an ECEL was calculated by EPA during risk evaluation.

**Consideration of Actual Exposures:** Consistent with 6(c) of TSCA, if actual exposures are not considered during the development of an OEV, they should be included during risk management. Other non-risk factors must also be considered in refining the ECEL.

**Industry Refinement of ECEL:** Since an OEV was not developed for TCE, the Agency must allow the industry to refine the ECEL as part of implementing the new risk management regulations.

## Approaches for ECEL Refinement in Compliance and Implementation

- Maximum Flexibility for Industry: Industry should have the flexibility to demonstrate compliance with the ECEL, allowing for adjustments based on actual exposure during tasks rather than the full-shift exposure assumption.
- Task-Based Exposure Evaluation: Refining the ECEL should take into account the specific time workers spend on tasks involving TCE exposure. This would ensure a more accurate risk assessment.
- Control-Banding and Averaging Exposure: Using a control-banding approach for short-term tasks and averaging exposure from repetitive tasks can minimize resampling, making the compliance process more practical.

## Need for a *De Minimis* Threshold

- A *de minimis* threshold is critical to account for impurities in the production process and products.

- While a TCE *de minimis* level would address several feedstock streams that contain TCE as an impurity, there are some feedstock streams that contain TCE levels higher than a suggested *de minimis* of 0.5 percent.
- For these streams, it is critical that in addition to the *de minimis* level, the final rule allow that TCE unintentionally produced as a byproduct/impurity not be subject to phaseout.

# TCE as a Byproduct

- The Preamble excludes TCE byproduct production from the manufacturing definition, considering it in other risk evaluations.
- The reuse of byproduct TCE as a reactant is mentioned, but the proposed rule doesn't address it under Processing as a Reactant/Intermediate.
- The regulation must clarify that TCE byproduct production is not subject to phaseout and that recycling it as a reactant is exempt.
- Byproduct TCE reuse should not be phased out due to lack of alternatives and well-controlled worker exposures.



## Supply Chain Impacts

- Prohibiting feedstock streams containing low levels of TCE byproducts or impurities could disrupt the production of essential chemicals such as ethylene dichloride (EDC), perchloroethylene (PCE), and carbon tetrachloride (CTC) potentially impacting supply chains for -
  - Automotive, aerospace, and electronics.
- To allow for the ongoing processing and recycling of these critical streams, EPA should clarify/confirm in the final rule that the definition of manufacturing does not include TCE produced as a byproduct.



## Increased Waste Generation

- The prohibition of low-level TCE byproducts in feedstock streams would lead to a substantial increase in waste generation, as these byproducts are currently being reused or recycled efficiently.
- Existing Chlorine Panel member facilities do not have capacity for onsite destruction of these large volume streams.
- Disposal/incineration of these streams not only raises environmental concerns but also adds economic burdens to companies due to higher disposal costs and potential environmental liabilities.



## Increased Make-Up of Virgin Raw Material

- To replace the lost volume from the increased waste disposal of TCE-containing streams, additional make-up volume of raw material, such as chlorine and ethylene, would need to be produced from virgin feedstocks.
- This would require an increase in current production capacity of these raw materials, corresponding with an increase in overall production costs.



## Economic Impacts

- The economic impact of these regulations is a major concern, where the **estimated costs exceed benefits**.
- The costs associated with the WCPP implementation and the potential phaseout of TCE in key applications could lead to substantial negative effects, including possible national security implications due to the critical nature of TCE in defense and potentially destabilizing the economy.



## Remediation and Wastewater Treatment Challenges

- Implementing a Workplace Chemical Protection Program (WCPP) for TCE-contaminated wastewater poses challenges.
- Potential to slow down environmental remediation efforts across many sites.
- Proposed 50-year exemption might not cover all cleanup projects, especially as new sites emerge.



## Concerns Regarding Phaseout Schedule and Exemptions

- Phaseout of TCE in HFC-134a does not align with AIM Act phase-down schedule.
- Seek confirmation that TCE byproducts will not be subjected to phaseout.
- Phaseout could lead to significant waste generation and disrupt critical manufacturing.





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Panel

Thank you