Environmental Justice Consultation on Forthcoming Proposed Rulemakings under TSCA Section 6(a)

Trichloroethylene (TCE)
Perchloroethylene (PCE)

June 16 and July 6, 2021

Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency

Today's Consultation

- Welcome
- Purpose of today's consultation
- Risk management under TSCA section 6(a)
- Proposed rulemaking for trichloroethylene (TCE)
  - Questions and discussion
- Proposed rulemaking for perchloroethylene (PCE)
  - Questions and discussion
- Next Steps

E.O. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

- The purpose of E.O. 12898 is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities
- Under E.O. 12898, EPA is seeking input from stakeholders interested in environmental justice issues during this consultation and encourages participation and comments to inform EPA's upcoming proposed regulation

Impact of Biden-Harris Executive Order on Protecting Public Health and the Environment

- As the Biden-Harris Administration works to advance EPA's mission of protecting human health and the environment, the agency is committed to ensuring the safety of chemicals used by all Americans
- To that end, EPA will follow the science and law, while reviewing TSCA implementation and take any needed steps to ensure that actions protect human health and the environment
- This review is being done in accordance with the Administration's Executive Orders and other directives, including those on environmental justice, scientific integrity, and regulatory review
- The Agency will keep stakeholders updated as decisions are made, and next steps are determined

Risk Management under TSCA Section 6(a)

Risk Management Requirements

- Under TSCA, EPA is required to take action to address chemicals that pose unreasonable risks to human health or the environment
- Following a determination of unreasonable risk, EPA must issue a TSCA section 6(a) rule so that the chemical no longer presents an unreasonable risk, within two years:
  - Proposed rule one year after risk evaluation
  - Final rule two years after risk evaluation
- Specific requirements regarding consideration of alternatives depending on the options selected, and a statement of effects for each risk management rule
- Input from stakeholders is critical to the process

TSCA Section 6(a) Regulatory Options

- Prohibit, limit or otherwise restrict manufacture, processing or distribution in commerce
- Prohibit, limit or otherwise restrict manufacture, processing or distribution in commerce for particular use or for use above a set concentration
- Require minimum warnings and instructions with respect to use, distribution, and/or disposal
- Require recordkeeping, monitoring or testing
- Prohibit or regulate manner or method of commercial use
- Prohibit or regulate manner or method of disposal by certain persons
- Direct manufacturers/processors to give notice of the unreasonable risk determination to distributors, users, and the public and replace or repurchase

TSCA Section 6(a)

- TSCA provides EPA with authority to address unreasonable risks in occupational settings, and to regulate entities including:
  - Manufacturers and processors (e.g., formulators)
  - Distributors
  - Commercial users (workplaces and workers)
  - Entities disposing of chemicals for commercial purposes

- TSCA also requires EPA to address unreasonable risks to consumers
  - Under TSCA, EPA has authority to regulate at the manufacturing, processing or distribution levels in the supply chain to address unreasonable risks from consumer use
  - These authorities allow the EPA to regulate at key points in the supply chain to effectively address unreasonable risks to consumers

Principles for Transparency During Risk Management

- Transparent, proactive, and meaningful engagement
- One-on-one meetings, public webinars, and required consultations with state and local governments, tribes, environmental justice communities, and small businesses
- Extensive dialogue about the findings in the risk evaluations, the risk management process required by TSCA, and the options available for managing unreasonable risks
- Seeking input from stakeholders on potential risk management approaches, their effectiveness, and impacts those approaches might have on businesses, workers, and consumers
- Input can help the agency develop regulations that are practical and protective

Types of Information to Inform Risk Management

- Suggestions on effective methods EPA can use to address the unreasonable risks
- Input on protective regulatory approaches
- Information related to controlling exposures, including current work practices, engineering, and administrative controls
- Information on essential uses, and the impacts if the chemical were not available
- Identification of uses that have been phased out, or can be phased out, and thus are no longer needed
- Any information on substitute chemicals that are safe and effective alternatives
- Suggestions on how EPA can further improve its regulatory processes or be more transparent

Your Comments

- Please provide specific comments on:
  - Do you have any concerns related to environmental justice and TCE or PCE?
  - How do you anticipate these rulemakings would have an environmental justice impact?
  - Other thoughts on the rulemakings?

Your Advice for EPA

- Please provide specific examples of:
  - Any experience with TCE or PCE
  - Any experience with regulation of TCE or PCE
  - Any risk management experience with specific conditions of use for TCE or PCE

Potential Regulatory Options

- Prohibition
- Existing Chemical Exposure Limit (ECEL)
  - A risk management option similar to a PEL, for industrial and most commercial conditions of use
  - Establishes a performance-based inhalation limit and is non-prescriptive, thus enabling users to determine how to most effectively meet the ECEL based on what works best for their workplace
  - Industries are already familiar with OSHA's Permissible Exposure Limits (PELs), and methods of compliance
- Prescriptive controls
  - Includes prescriptive controls for personal protective equipment (PPE), engineering changes, or administrative practices
  - Potential alternatives to an ECEL, though they may limit flexibility for the regulated entity

Potential Regulatory Options

- Concentration Limit
  - Restrictions on the concentration or weight fraction within the formulation such that the risk is mitigated

- Regulatory options applied broadly with other restrictions
  - Recordkeeping and downstream notification
  - Monitoring and labeling
  - Training, certification, and limited access program

Trichloroethylene (TCE)

- Background on risk evaluation and findings for TCE
- Focused discussion on specific conditions of use
- Consultation comments
- Your advice for EPA

Overview of Risk Evaluation for TCE

- Final risk evaluation published November 24, 2020
  - 54 conditions of use were evaluated
  - Final risk evaluation follows a series of risk evaluation activities
  - TCE draft risk evaluation: February 2020; TCE problem formulation: June 2018; TCE scope document: June 2017
- Public comments and external scientific peer review informed the final risk evaluation
  - 70 public comments received on the draft risk evaluation (comment period closed April 27, 2020)
  - Peer review: EPA's Science Advisory Committee on Chemicals (SACC) met to review the draft evaluation (March 2020)
- The final risk evaluation and supplemental materials are in docket EPA-HQ-OPPT-2019-0500, with additional materials supporting the risk evaluation process in docket EPA-HQ-OPPT-2016-0737, on www.regulations.gov

Unreasonable Risk Determinations

- EPA determined that 52 of the 54 conditions of use of TCE present an unreasonable risk of injury to health
- EPA's determinations are based on unreasonable risks of injury to:
  - Workers and occupational non-users (ONUs) during occupational exposures
  - Consumers and bystanders during exposures to consumer uses
- EPA's risk evaluation identified unreasonable risks for non-cancer adverse effects from acute inhalation and dermal exposures (immunosuppression effects), non-cancer adverse effects from chronic inhalation and dermal exposures (autoimmunity effects), and cancer from chronic inhalation and dermal exposures to TCE

TCE Manufacturing, Processing, Industrial, and Commercial Uses that Present an Unreasonable Risk

- Domestic manufacture
- Import
- Processing: processing as a reactant/intermediate
- Processing: incorporation into a formulation, mixture, or reaction product
- Processing: incorporation into articles
- Processing: repackaging
- Processing: Recycling
- Industrial and commercial use as a solvent for open-top batch vapor degreasing
- Industrial and commercial use as a solvent for closed-loop batch vapor degreasing
- Industrial and commercial use as a solvent for in-line conveyorized vapor degreasing
- Industrial and commercial use as a solvent for in-line web cleaner vapor degreasing
- Industrial and commercial use as a solvent for cold cleaning
- Industrial and commercial use as a solvent for aerosol spray degreaser/cleaner and mold release

TCE Industrial and Commercial Uses that Present an Unreasonable Risk

- Industrial and commercial use as a functional fluid in heat exchange fluid
- Industrial and commercial use as a lubricant and grease in tap and die fluid
- Industrial and commercial use as a lubricant and grease in penetrating lubricant
- Industrial and commercial use as an adhesive and sealant in solvent-based adhesives and sealants; tire repair cement/sealer; mirror edge sealant
- Industrial and commercial use in paints and coatings as a diluent in solvent-based paints and coatings
- Industrial and commercial use in cleaning and furniture care products in carpet cleaner and wipe cleaning
- Industrial and commercial use in laundry and dishwashing products in spot remover
- Industrial and commercial use in arts, crafts, and hobby materials in fixatives and finishing spray coatings

TCE Industrial and Commercial Uses and Disposal that Present an Unreasonable Risk

- Industrial and commercial use in corrosion inhibitors and anti-scaling agents.
- Industrial and commercial use as processing aids in process solvent used in battery manufacture; process solvent used in polymer fiber spinning, fluoroelastomer manufacture and Alcantara manufacture; extraction solvent used in caprolactam manufacture; precipitant used in beta-cyclodextrin manufacture
- Industrial and commercial use as ink, toner and colorant products in toner aid
- Industrial and commercial use in automotive care products in brake parts cleaner
- Industrial and commercial use in apparel and footwear care products in shoe polish
- Industrial and commercial use in hoof polish; gun scrubber; pepper spray; other miscellaneous industrial and commercial uses
- Disposal

TCE Consumer Uses that Present an Unreasonable Risk

- Consumer use as a solvent in brake and parts cleaner
- Consumer use as a solvent in aerosol electronic degreaser/cleaner
- Consumer use as a solvent in liquid electronic degreaser/cleaner
- Consumer use as a solvent in aerosol spray degreaser/cleaner
- Consumer use as a solvent in liquid degreaser/cleaner
- Consumer use as a solvent in aerosol gun scrubber
- Consumer use as a solvent in liquid gun scrubber
- Consumer use as a solvent in mold release
- Consumer use as a solvent in aerosol tire cleaner
- Consumer use as a solvent in liquid tire cleaner
- Consumer use as a lubricant and grease in tap and die fluid
- Consumer use as a lubricant and grease in penetrating lubricant
- Consumer use as an adhesive and sealant in solvent-based adhesive and sealant

TCE Consumer Uses that Present an Unreasonable Risk (cont.)

- Consumer use as an adhesive and sealant in mirror edge sealant
- Consumer use as an adhesive and sealant in tire repair cement/sealer
- Consumer use as a cleaning and furniture care product in carpet cleaner
- Consumer use as a cleaning and furniture care product in aerosol spot remover
- Consumer use as a cleaning and furniture care product in liquid spot remover
- Consumer use in arts, crafts, and hobby materials in fixative and finishing spray coatings
- Consumer use in apparel and footwear products in shoe polish
- Consumer use in fabric spray
- Consumer use in film cleaner
- Consumer use in hoof polish
- Consumer use in toner aid

In-Depth Discussion on TCE

1. Manufacturers, processors, and disposal

2. Industrial and commercial uses
   a) Vapor degreasing and cold cleaning uses
   b) Aerosol uses
   c) Other industrial and large commercial uses
   d) Other small commercial uses

3. Consumer uses

TCE Group 1: Manufacturers, Processors, and Disposal

- Relevant conditions of use:
  - Manufacturing (domestic manufacturing)
  - Manufacturing (import)
  - Processing: repackaging
  - Processing as a reactant/intermediate
  - Processing: incorporation into formulation, mixture or reaction product
  - Processing: incorporation into articles
  - Processing: recycling
  - Disposal

- What is TCE used for? How is it applied?
  - TCE is domestically manufactured, imported, and repackaged from bulk containers to smaller containers for resale
  - TCE is commonly used as a feedstock in the production of refrigerants, specifically HCFCs
  - TCE may also be incorporated at varying concentrations into products such as adhesives, coatings, inks, aerosols, and other products
  - Each of the conditions of use of TCE may generate waste streams of the chemical that are collected and transported to third-party sites for disposal, treatment, or recycling

Potential Regulatory Options (TCE Group 1)

- Any regulatory option could be used alone or in combination so that TCE no longer presents an unreasonable risk under any condition of use:
  - Prohibition
  - Existing Chemical Exposure Limit (ECEL)
  - Prescriptive controls (PPE, engineering and administrative controls)
  - Regulatory options applied broadly with other restrictions
    - Recordkeeping and downstream notification
    - Monitoring and labeling
    - Training, certification, and limited access program

TCE Group 2a: Industrial Vapor Degreasing and Cold Cleaning Uses

- Relevant conditions of use
  - Industrial and commercial use as a solvent for open-top batch vapor degreasing
  - Industrial and commercial use as a solvent for closed-loop batch vapor degreasing
  - Industrial and commercial use as a solvent for in-line conveyorized vapor degreasing
  - Industrial and commercial use as a solvent for in-line web cleaner vapor degreasing
  - Industrial and commercial use as a solvent for cold cleaning

- What is TCE used for? How is it applied?
  - TCE is used as a degreasing solvent to remove drawing compounds, cutting fluids, coolants, and lubricants from metal parts
  - Cold cleaning operations include spraying, brushing, flushing, and immersion

TCE Group 2b: Industrial and Commercial Aerosol Uses

- Relevant conditions of use:
  - Industrial and commercial use as a solvent for aerosol spray degreaser/cleaner and mold release
  - Industrial and commercial use as a lubricant and grease in penetrating lubricant
  - Industrial and commercial use in automotive care products in brake parts cleaner

- What is TCE used for? How is it applied?
  - Aerosol-based degreasing products containing TCE include degreasers for applications such as brake cleaning, mold cleaning, and other metal product cleaning
  - Additional aerosol products include film cleaners, coil cleaners, and various lubricants
  - Aerosol degreasing is a process that uses an aerosolized solvent spray, typically applied from a pressurized can, to remove residual contaminants from fabricated parts
  - Aerosol lubricant products use an aerosolized spray to help free frozen parts by dissolving rust and leave behind a residue to protect surfaces against rust and corrosion

TCE Group 2c: Other Industrial and Commercial Uses – Industrial and Large Commercial

- Relevant conditions of use:
  - Industrial and commercial use as a lubricant and grease in tap and die fluid
  - Industrial and commercial use as an adhesive and sealant in solvent-based adhesives and sealants; tire repair cement/sealer; mirror edge sealant
  - Industrial and commercial use as a functional fluid in heat exchange fluid
  - Industrial and commercial use in paints and coatings as a diluent in solvent-based paints and coatings
  - Industrial and commercial use in arts, crafts, and hobby materials in fixatives and finishing spray coatings
  - Industrial and commercial use in corrosion inhibitors and anti-scaling agents
  - Industrial and commercial use as processing aids in process solvent used in battery manufacture; process solvent used in polymer fiber spinning, fluoroelastomer manufacture and Alcantara manufacture; extraction solvent used in caprolactam manufacture; precipitant used in beta-cyclodextrin manufacture

TCE Group 2c: Other Industrial and Commercial Uses – Industrial and Large Commercial (cont.)

- What is TCE used for? How is it applied?
  - TCE is used in various industrial and large commercial settings in adhesives and sealants, lubricants and greases, functional fluids, paints and coatings, and in a variety of cleaning products
  - As a functional fluid, it is used in industrial settings in closed systems, such as to aid with heat exchange
  - It is used as a processing aid that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but does not remain in the product, such as in plastics manufacturing
  - TCE is used in metalworking fluids that are used for the machining of internal and external threads using cutting tools like taps and thread-mills

TCE Group 2d: Other Industrial and Commercial Uses – Small Commercial

- Relevant conditions of use:
  - Industrial and commercial use in laundry and dishwashing products in spot remover
  - Industrial and commercial use in cleaning and furniture care products in carpet cleaner and wipe cleaning
  - Industrial and commercial use as ink, toner and colorant products in toner aid
  - Industrial and commercial use in apparel and footwear care products in shoe polish
  - Industrial and commercial use in hoof polish, gun scrubber, and pepper spray

TCE Group 2d: Other Industrial and Commercial Uses – Small Commercial (cont.)

- What is TCE used for? How is it applied?
  - Examples of these uses include, but are not limited to, mold cleaning products, shoe polish, hoof polish, pepper spray, and gun scrubber
  - For many of these uses, TCE is expected to act similarly to a cleaning solvent used to remove dirt or other contaminates from substrates
  - In dry cleaning and carpet cleaning settings, spot cleaning can involve the use of a spotting agent containing TCE that can be applied from squeeze bottles, hand-held spray bottles, or spray guns connected to pressurized tanks
  - Once applied, the cleaning person may come into further contact with TCE when using a brush, spatula, pressurized air or steam, or their fingers to scrape or flush away the stain

Potential Regulatory Options (TCE Group 2: Industrial and Commercial Uses)

- Any regulatory option could be used alone or in combination so that TCE no longer presents an unreasonable risk under any condition of use:
  - Prohibition
  - Existing Chemical Exposure Limit (ECEL)
  - Prescriptive controls (PPE, engineering and administrative controls)

- Concentration limit
  - Regulatory options applied broadly with other restrictions
    - Recordkeeping and downstream notification
    - Monitoring and labeling
    - Training, certification, and limited access program

TCE Group 3: Consumer Uses

- Relevant conditions of use:
  - Consumer use as a solvent in brake and parts cleaner
  - Consumer use as a solvent in aerosol electronic degreaser/cleaner
  - Consumer use as a solvent in liquid electronic degreaser/cleaner
  - Consumer use as a solvent in aerosol spray degreaser/cleaner
  - Consumer use as a solvent in liquid degreaser/cleaner
  - Consumer use as a solvent in aerosol gun scrubber
  - Consumer use as a solvent in liquid gun scrubber
  - Consumer use as a solvent in mold release
  - Consumer use as a solvent in aerosol tire cleaner
  - Consumer use as a solvent in liquid tire cleaner
  - Consumer use as a lubricant and grease in tap and die fluid
  - Consumer use as a lubricant and grease in penetrating lubricant
  - Consumer use as an adhesive and sealant in solvent-based adhesive and sealant

TCE Group 3: Consumer Uses (cont.)

- Relevant conditions of use:
  - Consumer use as an adhesive and sealant in mirror edge sealant
  - Consumer use as an adhesive and sealant in tire repair cement/sealer
  - Consumer use as a cleaning and furniture care product in carpet cleaner
  - Consumer use as a cleaning and furniture care product in aerosol spot remover
  - Consumer use as a cleaning and furniture care product in liquid spot remover
  - Consumer use in arts, crafts, and hobby materials in fixative and finishing spray coatings
  - Consumer use in apparel and footwear products in shoe polish
  - Consumer use in fabric spray
  - Consumer use in film cleaner
  - Consumer use in hoof polish
  - Consumer use in toner aid

Potential Regulatory Options (TCE Group 3: Consumer Uses)

- Any regulatory option could be used alone or in combination so that TCE no longer presents an unreasonable risk under any condition of use:
  - Prohibition of manufacturing, processing or distribution of products for consumer use
- Concentration limit
  - Regulatory options applied broadly with other restrictions
    - Recordkeeping and downstream notification
    - Monitoring and labeling
    - Training, certification, and limited access program

Your Comments

- Please provide specific examples of:
  - Any experience with TCE
  - Any experience with regulation of TCE
  - Any risk management experience with specific conditions of use of TCE

- Please provide specific comments:
  - Do you have any concerns related to environmental justice about TCE?
  - How do you anticipate this rulemaking would have an environmental justice impact?
  - Other thoughts on the rulemaking?

Additional Information

- General TSCA: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/frank-r-lautenberg-chemical-safety-21st-century-act
- Current Chemical Risk Management Activities: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/current-chemical-risk-management-activities
- TCE Risk Management: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-trichloroethylene-tce
- TCE: Katie McNamara (McNamara.Katelan@epa.gov, 202-564-4361)
- General Risk Management Outreach: Douglas Parsons (parsons.douglas@epa.gov, 202-564-0341)

Perchloroethylene (PCE)

- Background on risk evaluation and findings for perchloroethylene (PCE)
- Focused discussion on specific conditions of use
- Consultation comments
- Your advice for EPA

Overview of Risk Evaluation for Perchloroethylene (PCE)

- Final risk evaluation published December 18, 2020
  - 61 conditions of use were evaluated
  - Final risk evaluation follows a series of risk evaluation activities
  - Perchloroethylene draft risk evaluation: April 2020; PCE problem formulation: May 2018; PCE scope document: June 2017
- Public comments and external scientific peer review informed the final risk evaluation
  - 28 public comments received on the draft risk evaluation (comment period closed July 6, 2020)
  - Peer review: EPA's Science Advisory Committee on Chemicals (SACC) met to review the draft evaluation (May 2020)
- The final risk evaluation and supplemental materials are in docket EPA-HQ-OPPT-2019-0502, with additional materials supporting the risk evaluation process in docket EPA-HQ-OPPT-2016-0732, on www.regulations.gov

Unreasonable Risk Determinations

- EPA determined that 59 of the 61 conditions of use of perchloroethylene present an unreasonable risk of injury to health
- EPA’s determinations are based on unreasonable risks of injury to:
  - Workers and occupational non-users (ONUs) during occupational exposures
  - Consumers and bystanders during exposures to consumer use
- EPA's risk evaluation identified unreasonable risks for non-cancer adverse effects (neurotoxicity) from acute and chronic inhalation and dermal exposures, and cancer (liver) from chronic inhalation and dermal exposures to perchloroethylene

PCE Manufacturing, Processing, Industrial, and Commercial Uses that Present an Unreasonable Risk

- Manufacturing (domestic manufacturing)
- Manufacturing (import)
- Processing: As a reactant/intermediate
- Processing: Incorporation into formulation, mixture or reaction product in cleaning and degreasing products
- Processing: Incorporation into formulation, mixture or reaction product – adhesive and sealant products
- Processing: Incorporation into formulation, mixture or reaction product – paint and coating products
- Processing: Incorporation into formulation, mixture or reaction product – other chemical products and preparations
- Processing: Repackaging
- Processing: Recycling
- Industrial and commercial use as solvent for open-top batch vapor degreaser
- Industrial and commercial use as solvent for closed-loop batch vapor degreaser
- Industrial and commercial use as solvent for in-line conveyorized vapor degreaser
- Industrial and commercial use as solvent for in-line web cleaner vapor degreaser
- Industrial and commercial use as solvent for cold cleaning

PCE Industrial and Commercial Uses that Present an Unreasonable Risk

- Industrial and commercial use as solvent for aerosol spray degreaser/cleaner
- Industrial and commercial use as a lubricant and grease in aerosol lubricants
- Industrial and commercial use as an adhesive and sealant in solvent-based adhesives and sealants
- Industrial and commercial use in paints and coatings as solvent-based paints and coatings
- Industrial and commercial use in paints and coatings as a maskant for chemical milling
- Industrial and commercial use as a processing aid in pesticide, fertilizer and other agricultural chemical manufacturing
- Industrial and commercial use as a processing aid in catalyst regeneration in petrochemical manufacturing
- Industrial and commercial use in cleaning and furniture care products in wipe cleaning
- Industrial and commercial use in cleaning and furniture care products in other spot cleaning and spot removers, including carpet cleaning
- Industrial and commercial use in cleaning and furniture care products for mold release
- Industrial and commercial use in cleaning and furniture care products in dry cleaning and spot cleaning post-2006 dry cleaning
- Industrial and commercial use in cleaning and furniture care products in dry cleaning and spot cleaning $4^{th}/5^{th}$ gen only dry cleaning

PCE Industrial and Commercial Uses and Disposal that Present an Unreasonable Risk

- Industrial and commercial use in cleaning and furniture care products in automotive care products (e.g., engine degreaser and brake cleaner)
- Industrial and commercial use in cleaning and furniture care products in non-aerosol cleaner
- Industrial and commercial use in metal (e.g., stainless steel) and stone polishes
- Industrial and commercial use in laboratory chemicals
- Industrial and commercial use in welding
- Industrial and commercial use in other textile processing
- Industrial and commercial use in wood furniture manufacturing
- Industrial and commercial use in foundry applications
- Industrial and commercial use in specialty Department of Defense uses (oil analysis and water pipe repair)
- Commercial use in inks and ink removal products (based on printing)
- Commercial use in inks and ink removal products (based on photocopying)
- Commercial use for photographic film
- Commercial use in mold cleaning, release and protectant products
- Disposal

PCE Consumer Uses that Present an Unreasonable Risk

- Consumer use in cleaning and furniture care products in cleaners and degreasers (other)
- Consumer use in cleaning and furniture care products in dry cleaning solvent
- Consumer use in cleaning and furniture care products in automotive care products (brake cleaner)
- Consumer use in cleaning and furniture care products in automotive care products (parts cleaner)
- Consumer use in cleaning and furniture care products in aerosol cleaner (vandalism mark and stain remover)
- Consumer use in cleaning and furniture care products in non-aerosol cleaner (e.g., marble and stone polish)
- Consumer use in lubricants and greases (cutting oils)
- Consumer use in lubricants and greases (lubricants and penetrating oils)
- Consumer use in adhesives for arts and crafts (including industrial adhesive, arts and crafts adhesive, gun ammunition sealant)

PCE Consumer Uses that Present an Unreasonable Risk

- Consumer use in adhesives for arts and crafts (livestock grooming adhesive)
- Consumer use in adhesives for arts and crafts (column adhesive, caulk and sealant)
- Consumer use in paints and coatings as solvent-based paints and coatings (outdoor water shield (liquid))
- Consumer use in paints and coatings as solvent-based paints and coatings (coatings and primers (aerosol))
- Consumer use in paints and coatings as solvent-based paints and coatings (rust primer and sealant (liquid))
- Consumer use in paints and coatings as solvent-based paints and coatings (metallic overglaze)
- Consumer use in metal (e.g., stainless steel) and stone polishes
- Consumer use in inks and ink removal products
- Consumer use in welding
- Consumer use in mold cleaning, release and protectant products

In-Depth Discussion on PCE

1. Manufacturers, processors, and disposal

2. Industrial and commercial uses
   a) Industrial and commercial vapor degreasing and cold cleaning uses
   b) Industrial and commercial aerosol uses
   c) Industrial and large commercial uses
   d) Industrial and commercial dry cleaning uses
   e) Commercial uses

3. Consumer uses

PCE Group 1: Manufacturers, Processors, and Disposal

- Relevant conditions of use:
  - Manufacturing (domestic manufacturing)
  - Manufacturing (import)
  - Processing: repackaging
  - Processing as a reactant/intermediate
  - Processing: incorporation into formulation, mixture or reaction product in cleaning and degreasing products
  - Processing: incorporation into formulation, mixture or reaction product in adhesive and sealant products
  - Processing: incorporation into formulation, mixture or reaction product in paint and coating products
  - Processing: incorporation into formulation, mixture or reaction product in other chemical products and preparations
  - Processing: recycling
  - Disposal

- What is PCE used for? How is it applied?
  - PCE is domestically manufactured, imported, and repackaged from bulk containers to smaller containers. PCE is commonly used as a feedstock in the production of other chemicals products, and may be incorporated into various products and formulations at varying concentrations for further distribution
  - PCE waste streams are collected and transported to third-party sites for disposal, treatment, or recycling

Potential Regulatory Options (PCE Group 1: Manufacturers, Processors, and Disposal)

Any regulatory option could be used alone or in combination so that PCE no longer presents an unreasonable risk under any condition of use:

- Prohibition
- Existing Chemical Exposure Limit (ECEL)
- Prescriptive controls (PPE, engineering and administrative controls)
- Regulatory options applied broadly with other restrictions
  - Recordkeeping and downstream notification
  - Monitoring and labeling
  - Training, certification, and limited access program

PCE Group 2a: Industrial Vapor Degreasing and Cold Cleaning Uses

- Relevant conditions of use
  - Industrial and commercial use as a solvent for open-top batch vapor degreaser
  - Industrial and commercial use as a solvent for closed-loop batch vapor degreaser
  - Industrial and commercial use as a solvent for in-line conveyorized vapor degreaser
  - Industrial and commercial use as a solvent for in-line web cleaner vapor degreaser
  - Industrial and commercial use as a solvent for cold cleaning

- What is PCE used for? How is it applied?
  - PCE is used as a degreasing solvent in batch vapor degreasers, conveyorized vapor degreasers, and web vapor degreasers to remove dirt, grease, and surface contaminants in a variety of industries, including electronic and electrical product manufacturing, aerospace manufacturing, and metal and plastic product manufacturing

PCE Group 2b: Industrial and Commercial Aerosol Uses

- Relevant conditions of use:
  - Industrial and commercial use as a solvent for aerosol spray degreaser/cleaner
  - Industrial and commercial use as a lubricant and grease in aerosol lubricants
  - Industrial and commercial use in cleaning and furniture care products in automotive care products (e.g., engine degreaser and brake cleaner)
  - Industrial and commercial use in welding

- What is PCE used for? How is it applied?
  - PCE is used as a solvent in aerosol products in degreasing applications such as brake cleaning, engine degreasing, electric motor cleaners, cable cleaners, and other metal product cleaning
  - Aerosol degreasing is a process that uses aerosolized solvent spray to remove residual contaminants from fabricated parts; aerosol lubricants help free frozen parts by dissolving rust

PCE Group 2c: Industrial and Large Commercial Uses

- Relevant conditions of use:
  - Industrial and commercial use in solvent-based adhesives and sealants
  - Industrial and commercial use in solvent-based paints and coatings
  - Industrial and commercial use in paints and coatings as a maskant for chemical milling
  - Industrial and commercial use as a processing aid in pesticide, fertilizer and other agricultural chemical manufacturing
  - Industrial and commercial use as a processing aid in catalyst regeneration in petrochemical manufacturing
  - Industrial and commercial use in wood furniture manufacturing
  - Industrial and commercial use in foundry applications
  - Industrial and commercial use in specialty Department of Defense uses (oil analysis and water pipe repair)
  - Industrial and commercial use in other textile processing
  - Industrial and commercial use in laboratory chemicals

PCE Group 2c: Industrial and Large Commercial Uses (cont.)

- What is PCE used for? How is it applied?
  - PCE is used as an industrial processing aid in reforming and isomerization processes at petroleum refineries and is used as a process solvent in other processing aid uses
  - PCE is used a chemical maskant to protect a substrates during chemical milling, plating, and anodizing processes in industries such as aerospace, medical implants, and non-aerospace military industries
  - PCE is used as a solvent in a variety of other industrial applications such as textile processing, wood furniture manufacturing, foundry applications, and use in oil analysis and water pipe repair
  - PCE is used in various adhesive, sealant, coating, paint, and paint stripper products for industrial and commercial applications

PCE Group 2d: Industrial and Commercial Dry Cleaning Uses

- Relevant conditions of use:
  - Industrial and commercial use in cleaning and furniture care products in dry cleaning and spot cleaning post-2006 dry cleaning
  - Industrial and commercial use in cleaning and furniture care products in dry cleaning and spot cleaning 4^{th}/5^{th} gen only dry cleaning
- What is PCE used for? How is it applied?
  - PCE is used a solvent in dry cleaning and is found in products used to spot clean garments to help dissolve greases, oils and waxes.
  - Dry cleaning machines are typically categorized into five generations of machines, including in 3^{rd}, 4^{th}, and 5^{th} generation machines

PCE Group 2e: Commercial Uses

- Relevant conditions of use:
  - Industrial and commercial use in cleaning and furniture care products in wipe cleaning
  - Industrial and commercial use in metal (e.g., stainless steel) and stone polishes
  - Industrial and commercial use in cleaning and furniture care products in non-aerosol cleaner
  - Industrial and commercial use in cleaning and furniture care products in other spot cleaning and spot removers, including carpet cleaning
  - Industrial and commercial use in cleaning and furniture care products for mold release
  - Commercial use in inks and ink removal products (based on printing)
  - Commercial use in inks and ink removal products (based on photocopying)
  - Commercial use for photographic film
  - Commercial use in mold cleaning, release and protectant products
- What is PCE used for? How is it applied?
  - As a cleaning solvent to remove dirt or other contaminates in a variety of other commercial uses such as metal (e.g., stainless steel) and stone polishes, inks and ink removal products, photographic film applications, and mold cleaning, release, and protectant products
  - As a solvent in non-aerosol (i.e., liquid) degreasing and cleaning products that typically involve dabbing or soaking a rag with cleaning solution and then using the rag to wipe down surfaces to remove contamination
  - As a spot cleaner spray-applied to stained textile and then scraped away with a brush or fingers

Potential Regulatory Options (PCE Group 2: Industrial and Commercial)

Any regulatory option could be used alone or in combination so that PCE no longer presents an unreasonable risk under any condition of use:

- Prohibition
- Existing Chemical Exposure Limit (ECEL)
- Prescriptive controls (PPE, engineering and administrative controls)
- Concentration limit
- Regulatory options applied broadly with other restrictions
  - Recordkeeping and downstream notification
  - Monitoring and labeling
  - Training, certification, and limited access program

PCE Group 3: Consumer Uses

- Relevant conditions of use:
  - Consumer use in cleaners and degreasers (other)
  - Consumer use in dry cleaning solvent
  - Consumer use in automotive care products (brake cleaner)
  - Consumer use in automotive care products (parts cleaner)
  - Consumer use in aerosol cleaner (vandalism mark and stain remover)
  - Consumer use in non-aerosol cleaner (e.g., marble and stone polish)
  - Consumer use in lubricants and greases (cutting oils)
  - Consumer use in lubricants and greases (lubricants and penetrating oils)
  - Consumer use in adhesives for arts and crafts (including industrial adhesive, arts and crafts adhesive, gun ammunition sealant)
  - Consumer use in adhesives for arts and crafts (livestock grooming adhesive)
  - Consumer use in adhesives for arts and crafts (column adhesive, caulk and sealant)
  - Consumer use in paints and coatings as solvent-based paints and coatings (outdoor water shield (liquid))
  - Consumer use in paints and coatings as solvent-based paints and coatings (coatings and primers (aerosol))
  - Consumer use in paints and coatings as solvent-based paints and coatings (rust primer and sealant (liquid))
  - Consumer use in paints and coatings as solvent-based paints and coatings (metallic overglaze)
  - Consumer use in metal (e.g., stainless steel) and stone polishes
  - Consumer use in inks and ink removal products
  - Consumer use in welding
  - Consumer use in mold cleaning, release and protectant products

Potential Regulatory Options (PCE Group 3: Consumer Uses)

Any regulatory option could be used alone or in combination so that PCE no longer presents an unreasonable risk under any condition of use:

- Prohibition of manufacturing, processing or distribution of products for consumer use
- Concentration limit
- Regulatory options applied broadly with other restrictions
  - Recordkeeping and downstream notification
  - Monitoring and labeling
  - Training, certification, and limited access program

Your Comments

- Please provide specific examples of:
  - Any experience with PCE
  - Any experience with regulation of PCE
  - Any risk management experience with specific conditions of use of PCE
- Please provide specific comments:
  - Do you have any concerns related to environmental justice about these conditions of use for PCE?
  - How do you anticipate this rulemaking would have an environmental justice impact?
  - Other thoughts on the rulemaking?

Additional Information

- General TSCA: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/frank-r-lautenberg-chemical-safety-21st-century-act
- Current Chemical Risk Management Activities: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/current-chemical-risk-management-activities
- PCE Risk Management: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-perchloroethylene
- PCE: Kelly Summers (summers.kelly@epa.gov, 202-564-2201)
- General risk management outreach: Douglas Parsons (parsons.douglas@epa.gov, 202-564-0341)

Next Steps

- Please send written comments by August 20, 2021, to Amanda Hauff at Hauff.Amanda@epa.gov with a cc: to McNamara.Katelan@epa.gov for TCE or Summers.Kelly@epa.gov for PCE