

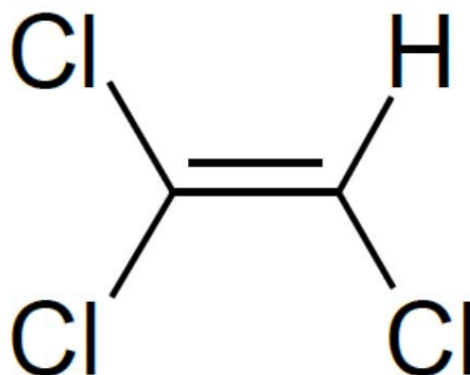


United States
Environmental Protection Agency

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Office of Chemical Safety and
Pollution Prevention

Nontechnical Summary of the Risk Evaluation for Trichloroethylene

CASRN: 79-01-6



November 2020

ACTION

- EPA is releasing the final risk evaluation on trichloroethylene (TCE). After evaluating 54 conditions of use of TCE, EPA has determined that TCE presents an unreasonable risk under 52 conditions of use. This includes an unreasonable risk to workers and occupational non-users (ONUs) when manufacturing the chemical; processing the chemical for a variety of uses; when used in a variety of industrial and commercial applications; and disposal. This also includes an unreasonable risk to consumers and bystanders from most consumer uses. TCE does not pose an unreasonable risk under distribution in commerce or in consumer use in pepper spray. EPA also determined that TCE does not present an unreasonable risk to the environment under all conditions of use.
- This final risk evaluation is conducted pursuant to the Toxic Substances Control Act (TSCA), as amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, which requires EPA to prioritize and evaluate the safety of existing chemicals to determine whether a chemical presents an unreasonable risk of injury to health or the environment under the conditions of use. If a chemical is determined to present an unreasonable risk, EPA must regulate the substance to address the unreasonable risk.
- TCE was selected in 2016 as one of the first 10 chemicals for risk evaluation under section 6 of TSCA.
- Public comments and external scientific peer review informed the development of the TCE final risk evaluation. EPA published the TCE draft risk evaluation in February 2020, the TCE problem formulation document in June 2018, and the scope document in June 2017.

KEY POINTS

- After evaluating 54 conditions of use of TCE, EPA determined that TCE presents an unreasonable risk under 52 conditions of use. This includes unreasonable risks to health of workers and ONUs during occupational exposures, and to consumers and bystanders during exposures to consumer uses.
- These unreasonable risks include potential immunosuppression from acute exposures, and autoimmunity and cancer from chronic exposures.
- The conditions of use with unreasonable risks include manufacturing; processing as a reactant/intermediate, processing into a formulation, processing into articles, repackaging and recycling; use in various industrial and commercial uses including as a solvent for cleaning or degreasing; industrial and commercial use in adhesives and sealants, lubricants and greases, functional fluids, paints and coatings, and in a variety of cleaning products; commercial use in several products; several consumer uses; and disposal.
- The conditions of use that EPA determined do not present an unreasonable risk include distribution in commerce and consumer use in pepper spray.
- EPA released the draft risk evaluation for TCE in February 2020 for a 60-day public comment period. Additionally, EPA held a peer review meeting of the Science Advisory Committee on Chemicals on the draft risk evaluation of TCE on March 24-27, 2020. The report is in the docket (EPA-HQ-OPPT-2019-0500). Along with the final risk evaluation, EPA is releasing a document that provides a response to public and peer review comments.

BACKGROUND

- TCE has a wide range of uses in consumer and commercial products and in industry. An estimated 84% of TCE's annual production volume is used as an intermediate in the

manufacturing of refrigerants. Another 15% of TCE production volume is used as a degreasing solvent, leaving approximately 1% for other uses.

- The total aggregate production volume decreased from 220.5 to 171.9 million pounds between 2012 and 2015.

NEXT STEPS

- EPA has issued the final risk evaluation for TCE, meeting the requirements set forth in TSCA section 6(b). EPA is now initiating the process to address the unreasonable risks identified. EPA has two years following the issuance of the final risk evaluation to address, by rule, the unreasonable risks identified.

SUMMARY OF UNREASONABLE RISK DETERMINATIONS

EPA has determined that the following conditions of use of TCE do not present an unreasonable risk of injury to health or the environment. These determinations are considered final agency action and are being issued by order pursuant to TSCA section 6(i)(1).

Conditions of Use that Do Not Present an Unreasonable Risk
<ul style="list-style-type: none">• Distribution in commerce• Consumer use in pepper spray

EPA has determined that the following conditions of use of TCE present an unreasonable risk of injury. EPA will initiate TSCA section 6(a) risk management actions on these conditions of use as required under TSCA section 6(c)(1). Pursuant to TSCA section 6(i)(2), the unreasonable risk determinations for these conditions of use are not considered final agency action.

Manufacturing that Presents an Unreasonable Risk
<ul style="list-style-type: none">• Manufacturing: domestic manufacture• Manufacturing: import

Processing that Presents an Unreasonable Risk
<ul style="list-style-type: none">• 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 Uses that Present an Unreasonable Risk

- 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
- 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 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 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
- 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

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 Uses that Present an Unreasonable Risk

- 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 adhesives and sealants
- 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

Disposal that Presents an Unreasonable Risk

- Disposal