



# Background on Risk Evaluation Under the Toxic Substances Control Act (TSCA): Trichloroethylene

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In 2016, the Frank R. Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act (LCSA; [P.L. 114-182](#)) amended Title I of the Toxic Substances Control Act (TSCA; [15 U.S.C. §2601 et seq.](#)) to direct the U.S. Environmental Protection Agency (EPA) to systematically prioritize chemicals for risk evaluation. (For more information, see CRS Report R45149, [Title I of the Toxic Substances Control Act \(TSCA\): A Summary of the Statute.](#)) The purpose of the risk evaluations is to determine whether particular chemicals warrant regulation in terms of the risks associated with their manufacture, processing, distribution, use, or disposal. If EPA identifies “unreasonable” risk to human health or the environment associated with one or more of the elements of a chemical’s lifecycle, TSCA Section 6 directs EPA to promulgate a rule to mitigate those risks. TSCA Section 9 limits EPA’s authority to regulate a chemical under TSCA if another law may be used to regulate a chemical for the unreasonable risk identified by the agency.

As amended, TSCA Section 6 directed EPA to select 10 chemicals for risk evaluation from [a list of 90 chemicals that the agency identified in 2014](#) as warranting risk assessment. EPA based this list on a screening of 345 chemicals for potential hazard and exposure, and persistence and bioaccumulation characteristics. With more than 86,000 chemicals on the [TSCA Inventory](#), EPA’s screening approach was intended to focus the agency’s resources and attention on a select group of chemicals for which sufficient scientific and technical information is available to suggest greater concern to human health or the environment. Pursuant to TSCA Section 6, EPA selected the initial 10 chemicals for risk evaluation, including trichloroethylene (TCE), in 2016 ([81 Federal Register 91927-91929, December 19, 2016](#)).

Each chemical substance that EPA evaluates has unique properties, uses, and risks, which may warrant different risk management approaches. The process of conducting risk evaluations and assessing risk management options involves judgments about the reliability of available scientific and technical information. Aspects of this process and what information EPA identifies as the basis for justifying certain regulatory action can generate disagreement between the agency and stakeholders (e.g., industry, environmental and public health organizations). As EPA continues to implement TSCA, the agency’s risk evaluations and related actions are likely to receive scrutiny among stakeholders. Congress may consider assessing EPA’s implementation of TSCA, as amended by the LCSA, and the resulting outcomes from the

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agency's actions and decisions. The next section discusses EPA's risk evaluation for TCE and potential next steps toward addressing the unreasonable risks that the agency identified.

## Trichloroethylene (TCE)

In 2016, EPA selected TCE (CAS Number 79-01-6) as one of the initial 10 chemicals for a risk evaluation. According to EPA, approximately 170 million pounds of TCE are manufactured in, or imported to, the United States annually, and the predominant use of TCE is to manufacture the hydrofluorocarbon refrigerant, HFC-134a. TCE is also used as a solvent for metal degreasing. The TSCA risk evaluation builds upon existing scientific understanding of the risks associated with TCE to determine whether there may be unreasonable risks associated with current uses of TCE that may warrant control.

In November 2020, EPA finalized its [risk evaluation for TCE](#), identifying unreasonable risks to the health of workers, occupational non-users, consumers, and bystanders from 52 out of 54 conditions of use that the agency evaluated. EPA did not identify unreasonable risks to the environment for any of the evaluated conditions of use. EPA based its human health risk determinations on comparisons among the predicted exposure to TCE from various exposure scenarios (e.g., workers involved in handling the chemical with or without the use of a respirator), the estimated level of exposure expected not to result in the development of adverse noncarcinogenic health effects while taking into account a *margin of exposure*, and the estimated level of exposure expected not to increase the risk of developing particular cancers above certain guideline ranges (i.e., 1-in-10,000 to 1-in-a-million above background risk). EPA's risk determinations regarding potential environmental effects are based on the predicted exposure to TCE for various species compared to the estimated level of exposure expected not to result in the development of adverse effects in species at the population level.

In June 2021, EPA announced its intention to approach the TSCA unreasonable risk determinations by making one determination for a chemical substance rather than multiple determinations for each condition of use. In July 2022, EPA released [a draft revised risk determination for TCE](#), which indicates that the chemical presents unreasonable risks to human health. This revised risk determination would supersede the November 2020 risk determinations in the risk evaluation.

Given that EPA identified unreasonable risks associated with TCE, EPA is developing a rule under TSCA Section 6 to address such risks and [anticipates proposing this rule in October 2022](#). Section 6(a) identifies seven risk management options that EPA may use alone or in combination to address the risks of TCE, including prohibiting the manufacture of the chemical and requiring manufacturers of the chemical to communicate the chemical's risks to allow downstream processors, users, and distributors the opportunity to take applicable protective measures. In developing the rule, EPA is required pursuant to Section 6 to identify various risk management options that would adequately address the identified unreasonable risk and determine the associated costs for each proposed risk management option. In its risk evaluation, EPA acknowledged multiple existing regulations (e.g., occupational standards, stationary source air emissions standards, and drinking water standards) that apply to TCE, which were promulgated under various statutes that EPA and other agencies administer. A TSCA risk management rule could supplement these existing regulations.

Since TCE is manufactured at relatively high volumes, those who manufacture and use TCE are likely to scrutinize the forthcoming risk management rule and underlying risk evaluation. Congress may conduct oversight or consider legislation with regard to EPA's efforts to manage the risks associated with TCE and whether such efforts are aligned with the intent of the TSCA amendments.

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