2021 TRI National Analysis Frequently Asked Questions

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Overview of the 2021 Data

Q: What are the highlights of the data analysis for 2021?

TRI chemical wastes that are generated at facilities from ongoing, routine production operations are called production-related wastes. These wastes are managed by any of several methods including: releases to the environment, recycling, treatment for destruction, or combustion for energy recovery. The total quantity of production-related waste managed by facilities during 2021 was 29.3 billion pounds, a 3% increase from 2020. Most (89%) of the 29.3 billion pounds of TRI chemical waste was managed through preferred waste management practices such as recycling and was not released to the environment.

From 2020 to 2021, the total quantity of TRI chemicals disposed of or otherwise released to the environment also increased:

- Total releases increased by 8% (233 million pounds).
- Releases into the air increased by 3%.
- Releases into surface waters increased by 1%.
- On-site disposal to land increased by 8% since 2020, due to increased land disposal by metal mining, hazardous waste management, and chemical manufacturing sectors.

Q: Is the change in disposal or other release quantities comparable to that of prior years?

Total disposal or other release quantities of TRI chemicals increased by 8% from 2020 to 2021. From 2019 to 2020, the total quantities disposed of or otherwise released decreased by 10%. Releases in 2021 were similar to those reported in 2019, indicating that the drop in releases in 2020 may have been a temporary reduction related to the Covid-19 public health emergency. Since 2012, disposal or other release quantities of TRI chemicals have decreased by 10% (364 million pounds). This long-term decrease is driven by declining releases from the electric utilities sector.

Q: What is new in this year's TRI National Analysis?

This year's National Analysis includes:

- Enhancements to the mapping tool with expanded information on the demographics of communities where TRI facilities are located
- The addition of United States Geologic Services watersheds and EPA Regions to Where You Live
- An analysis of reporting trends for per- and poly- fluoroalkyl substances (PFAS)
- A profile of the plastics products manufacturing sector

Q: Why does EPA include information about production-related waste as well as total disposal or other releases?

Production-related waste is TRI chemical waste generated from normal or routine operations at a facility and managed by the facility through recycling, combustion for energy recovery, treatment (i.e., destruction), and/or disposal or other releases to the environment. It does not include TRI chemical wastes resulting from accidents, remedial actions, catastrophic events, or other one-time events not associated with normal or routine production processes. Facilities can manage waste on site or ship it off site. The quantity of production-related waste of a TRI chemical or TRI chemicals is the sum of the quantities of the

TRI chemical (or chemicals) managed as waste on site or off site. Including information on the management of production-related waste provides a greater understanding of how TRI chemicals are managed, rather than focusing only on their final disposition through disposal or other release.

EPA encourages facilities to strive to eliminate waste at its source. In other words, facilities should avoid generating the waste in the first place whenever feasible. For waste that is generated, the preferred management methods are recycling, followed by combusting for energy recovery, treating and, as a last resort, disposing of or otherwise releasing the waste. The percent of the quantities of production-related waste managed through each of these management methods has changed over time, with a larger proportion recycled and a smaller proportion disposed of or otherwise released in recent years. The table below shows the percent of the production-related waste quantities for each waste management method in 2012, 2020 and 2021.

Percent of production-related waste recycled, combusted for energy recovery, treated or disposed of or otherwise released			
	2012	**2020**	**2021**
Quantity Recycled	37%	53%	51%
Quantity Combusted for Energy Recovery	11%	10%	10%
Quantity Treated	36%	26%	28%
Quantity Disposed of or Otherwise Released	15%	11%	11%

Q: Were any chemicals newly added to the TRI chemical list for 2021?

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) added 172 per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by TRI effective January 1, 2020. An additional 4 PFAS chemicals were added for reporting year 2021, with reports for these chemicals due to EPA by July 1, 2022. The NDAA established a framework for the automatic addition of PFAS to the TRI with a manufacture, processing, and otherwise use reporting threshold of 100 pounds for each listed PFAS.

Q: What information on PFAS was reported in 2021?

In total, facilities managed 1.3 million pounds of PFAS as waste in 2021. This is a 59% increase compared to 2020 and is largely driven by off-site recycling of perfluorooctyl iodide—a newly-listed PFAS—from one chemical manufacturing facility. In 2021, 105,146 pounds of PFAS were disposed of or otherwise released. This is about five times the releases from 2020, which is not explained by the addition of new chemicals to the TRI. One transfer, storage, and disposal facility (TSDF) accounted for 63% of PFAS releases, via disposal to a RCRA Subtitle C landfill.

The TRI Program received 89 forms from 44 facilities for 44 chemicals for RY2021. Most forms were from chemical manufacturing facilities or TSDFs. Two federal facilities submitted forms for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). The TRI program received the most forms for PFOA (9 forms), hexafluoropropylene oxide dimer acid (HPFO-DA or Gen-X, 7 forms), and PFOS (6 forms). Three forms were submitted for newly listed PFAS, all for perfluorooctyl iodide.

Q: How many facilities reported for 2021? Is it different from prior years?

A total of 21,087 facilities reported to TRI for 2021, which was a 1% decrease from the number of facilities that reported for 2020. The number of facilities reporting to TRI has decreased by 5% since 2012.

There are many reasons why a facility may report to TRI one year but not report the next year. Each of the following reasons may account for some portion of the annual changes in facilities reporting to TRI:

- Some facilities had a reduction in employees that caused them to drop below the employee threshold.
- Some facilities reduced or stopped production, either temporarily or because the facility closed, and did not exceed a TRI reporting threshold for the reporting year.
- Some facilities changed their processes so that they no longer use any chemicals on the TRI list or have reduced their use of TRI chemicals below the reporting thresholds for those chemicals.
- The TRI program sometimes adds chemicals to or changes the reporting thresholds for chemicals included on the TRI chemical list. This means that, following such Agency actions, some facilities may now meet the TRI reporting criteria if they manage such chemicals in excess of the reporting thresholds.
- Some facilities may have failed to report to TRI even though they meet the criteria. EPA will review these facilities to determine if follow-up action is appropriate.

General

Q: What factors should I consider when using TRI data?

As with any dataset, there are multiple factors to consider when using TRI data. The TRI *Factors to Consider* document describes these factors which include:

- TRI does not include information from all facilities or industry sectors that may manage TRI chemicals in waste, nor does it cover every chemical.
- Facilities that manufacture, process, or otherwise use chemicals below the applicable TRI threshold quantity or employ fewer than ten full-time employee equivalents are not required to report to TRI.
- As described in the next question, the quantity of a chemical release alone is not necessarily an indicator of exposure to the chemical, or the potential health or environmental risks posed by the chemical.
- Facilities estimate the quantities they report to TRI based on readily available data. EPA continually works to optimize the quality of the data through their data quality review process.

More information related to understanding and using TRI data is available on the TRI webpage in the *Factors to Consider* document.

Q: Should I worry about releases in my community?

Large release quantities do not necessarily mean there is need to be concerned, nor do small releases necessarily mean there is a low risk. “Disposal or other releases” represent a wide variety of management methods. These range from highly controlled disposal, such as in hazardous waste landfills, to releases due to accidental leaks or spills. Many releases reported to TRI are subject to permits and/or environmental standards that establish emissions limits under Federal or State laws such as air permits issued under the Clean Air Act. These limits on releases are intended to prevent or at least minimize exposure to the TRI-listed chemical and potential risks to human health and the environment. Factors such as the properties of the TRI chemical, extent of exposure to the TRI chemical following its release, route(s) of exposure (e.g., inhalation, dermal), bioavailability from the exposure route, and sensitivity of exposed individuals to

effects caused by the TRI-listed chemical must be considered before specific conclusions about risk can be made.

Q: What is EPA doing to help sectors decrease the quantities of TRI chemicals they release to the environment?

EPA's Pollution Prevention Program helps identify pollution prevention (P2) options for industry through a variety of assistance and information-sharing programs, such as P2 grants, the Safer Choice Program, and Green Chemistry. Learn more at EPA's P2 webpage. In addition, the TRI program makes the pollution prevention information submitted by facilities easily accessible through its TRI P2 webpage to showcase facilities' advances in environmental performance and promote the implementation of effective P2 practices.

Q: What is the schedule for the TRI National Analysis?

Each year, TRI data are due by July 1 and cover waste management activities that occurred during the previous calendar year. These data are posted online by the end of July as a preliminary dataset. The data then undergo extensive data quality analyses by the TRI Program, and the dataset is refreshed throughout the fall to incorporate any revisions or late submissions received by EPA. The dataset used to create the TRI National Analysis is locked down in mid-October, and the National Analysis report is typically published by early March.

Q: Does TRI include information on releases not related to production, such as from remedial actions or natural disasters?

Yes. Releases of TRI-listed chemicals not related to production at facilities, such as those that might occur from remedial actions or natural disasters, are reported to TRI as "non-production-related waste," meaning that the TRI chemical waste was not associated with normal or routine production processes. These are wastes resulting from remedial actions, catastrophic events (e.g., natural disasters such as hurricanes), or one-time events not associated with production processes. Note that this information is only reported to TRI if the facility met all three of the TRI reporting criteria of 1) exceeding the chemical activity threshold; 2) exceeding the employment threshold; and 3) operating within a TRI-covered sector.

Q: Does TRI cover greenhouse gases?

TRI covers a wide range of chemicals, and some of these chemicals, such as some fluorinated chemicals, are also reported to EPA's Greenhouse Gas Reporting Program.

Q: Was the 2021 TRI National Analysis affected by the COVID-19 public health emergency?

The 2021 National Analysis reflects data on the TRI chemical waste managed by facilities in calendar year 2021 and often compares these values to 2020, when disruptions due to COVID-19 were affecting some facilities in the U.S. Facilities may submit text comments with their TRI reporting forms, and some facilities noted that apparent increases in waste management from 2020-2021 were because 2020 activity levels were low, and 2021 represented a more typical situation.

Q: Does TRI include information on pollution prevention at facilities?

Yes. The Pollution Prevention Act of 1990 requires facilities to submit information on source reduction (also called pollution prevention) activities they initiated during the reporting year. Facilities report this

information by selecting one or more of 24 codes sorted into five categories: Material Substitutions and Modifications, Product Modifications, Process and Equipment Modifications, Inventory and Material Management, and Operating Practices and Training. Along with the code describing their source reduction activity, facilities report how they identified the opportunity for pollution prevention.

Facilities are also encouraged to provide optional comments about their most effective source reduction activities, with details such as what processes are affected, what chemical or material substitutions they made, and information on new techniques or technologies.

Facilities also have the option to report barriers to implementing source reduction. This information helps EPA identify areas where innovation and information exchange are most needed.