The Toxics Release Inventory (TRI) and Pollution Prevention

TRI and the Waste Management Hierarchy

EPA encourages facilities to first eliminate the creation of chemical waste through source reduction activities. For waste that is generated, the most preferred management method is recycling, followed by combusting for energy recovery, treatment and, as a last resort, disposing of or releasing the waste into the environment.

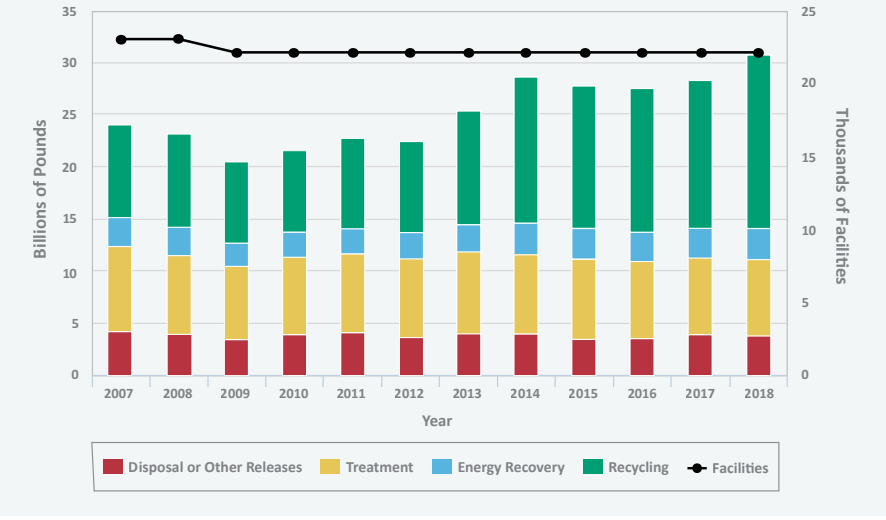
These waste management practices are illustrated in the waste management hierarchy and discussed in the Pollution Prevention Act (PPA) of 1990.

TRI's Pollution Prevention (P2) Data

The PPA requires industrial facilities to provide P2 details about each chemical they report to EPA's Toxics Release Inventory (TRI), such as:

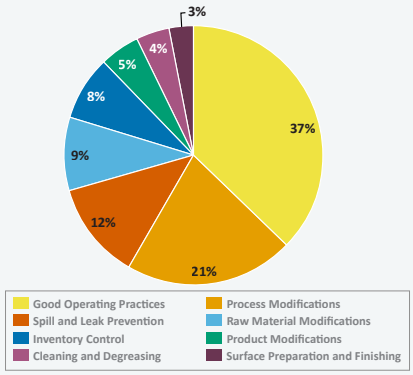
- Information about source reduction and other activities that have reduced environmental releases of the chemical
- Quantities of chemical waste managed through recycling, energy recovery, treatment or releases, referred to as production-related waste managed
- A production or activity ratio to provide context for reported chemical quantities.

Production-Related Waste Managed, 2007–2018

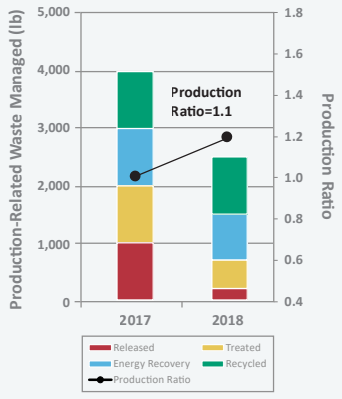


TRI P2 data helps track industry progress in reducing waste generation and moving toward preferred waste management methods. Making the information publicly available helps promote the sharing of best practices among individual facilities and companies and showcase facilities' achievements in improving environmental performance.

Newly Implemented Source Reduction Activities



Facility Production Ratio and Waste Managed Example



A production or activity ratio typically compares production in the current year to the prior year. For a chemical used to manufacture plastic pellets, for example, the production ratio may reflect annual change in the pounds produced. Using this ratio can help gauge whether reductions were the result of reported source reduction activities or if there was a shift to preferred waste management techniques.

The Toxics Release Inventory (TRI) and Pollution Prevention

Source Reduction and Other Waste Management Practices

Facilities report the source reduction activities, including any green chemistry practices, they implemented during the reporting year using predefined codes (W codes) on their TRI forms. For example, a facility may select a green chemistry code indicating that an organic solvent was reduced or eliminated in a production process as a source reduction activity. Many facilities choose to describe these activities using an optional text entry field on the TRI reporting form. Facilities may also provide details on barriers to source reduction or on other waste management methods (e.g. recycling) implemented to reduce releases of TRI chemicals to the environment.

Source Reduction Activity	Examples of TRI Text Entries (Section 8.11)
W42: Substituted raw materials	We have reduced our air emissions by substituting #6 fuel oil with B50; a product that is 50% vegetable oil.
W61: Changed to aqueous cleaners (from solvents or other materials)	Over that last 4 months, we have been converting our stains from a high solvent base to a water base. We will continue to do that during 2019. With water stain base replacing the solvent base stains, we have made the stain process safer for our employees.
W21: Instituted procedures to ensure that materials do not stay in inventory beyond shelf-life	We found customers for paint at the end of its shelf life that did not require high performance standards of paint within its shelf life. This reduced the amount in the waste stream.

Barriers to Implementing Source Reduction

EPA encourages facilities that did not implement source reduction activities to use the optional P2 text entry field to indicate what barriers may be preventing them from doing so. These may include:

- Need for additional technical information
- Concerns about product quality
- Prohibitive cost

This information provides a more complete picture of P2 activities at facilities and may facilitate exchanges between those seeking and those offering technical assistance.

Accessing and Using TRI's P2 Data

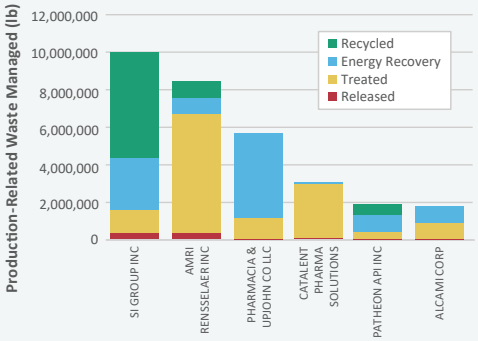
There are several resources to access and use TRI P2 to answer questions including:

- Have chemical releases at a particular industrial facility gone up or down over time?
- Was this change in releases driven by changes in production? Did P2 practices play a role?
- How are similar facilities managing the chemical? What P2 practices have been reported?
- Which P2 practices have led to the largest reductions in releases of TRI chemicals to the environment?

EPA's TRI P2 Search Tool can be used to identify P2 practices associated with particular industries, chemicals, or businesses and compare P2 performance at the facility and corporate level. You can also visually explore P2 data by sector using the Industry Profile Dashboard. P2 Spotlights highlighting select chemicals and pollution prevention approaches are also available.

Example: How are similar facilities managing the same chemical?

Methanol Managed by Pharmaceutical Manufacturing Facilities, 2018



Use the TRI P2 Search Tool to access P2 information and a conduct comparative analysis. This example shows how methanol waste is managed by different facilities in the pharmaceutical manufacturing sector. This comparison may help facilities learn from their peers to identify opportunities to move toward preferred waste management methods.