

2020 TRI Data: Report and Recommendations Regarding PFAS

On October 20, 2021, EPA released the final 2020 Toxics Release Inventory (“TRI”) dataset. This dataset reflects information submitted to EPA in the first TRI reporting cycle since per- and polyfluoroalkyl substances (“PFAS”) were added to the TRI by the 2020 National Defense Authorization Act. For purposes of the 2020 reporting cycle, there are 172 PFAS listed on the TRI¹; EPA is required to determine whether to add additional PFAS by the end of 2021.² Under the Emergency Planning and Community Right-to-Know Act,³ which creates the TRI program, facilities should have submitted a report for each TRI-listed PFAS that they “manufactured, processed, or otherwise used” during 2020 at a volume over 100 pounds. The volume of PFAS reported to have been manufactured, processed, used, and released in 2020 is far lower than expected.

Reporting Facilities

Only 39 facilities across the country reported that they “manufactured, processed, or otherwise used” a TRI-listed PFAS in 2020. The 39 facilities are located across a total of 20 states, with six of these facilities located in Texas—the state with the highest number of facilities reporting to the TRI for listed PFAS.

Based on the reported NAICS codes of the 39 facilities, a majority (72%) are chemical manufacturers. These facilities manufacture chemical products related to organic chemicals, paint and coating, soap and detergents, industrial gas, polish and other sanitation goods, plastics, fertilizers, and adhesives. Approximately 44 percent of reported facilities are in the waste management industry. The remaining reporting facilities all comprise a smaller proportion of the total, including 8 percent that are petroleum refineries or petroleum lubricating oil manufacturers. Nine reporting facilities reported more than one NAICS code, indicating engagement across multiple industries.

PFAS Chemicals Reported

Only 43 PFAS (of the 172 PFAS relevant to the 2020 TRI cycle) were reported to have been manufactured, processed, or otherwise used over the 100-pound threshold in 2020. The four PFAS most commonly reported to the 2020 TRI, in their respective order, are PFOA,⁴ GenX,⁵ PFOS,⁶ 2-propenoic acid.⁷

In total, the 39 reporting facilities submitted 91 individual chemical reports to the TRI in 2020. Sixteen percent of the reports indicated that a TRI-listed PFAS was being “manufactured.”⁸ Thirty-two percent of the reports indicated that a PFAS was being “processed.”⁹ Sixty percent reported that a PFAS was being “otherwise used,” which includes, but is not limited to, its use as a chemical processing aid, flame retardant, fuel, or for waste treatment. Twenty-four reports indicated more than one condition of use for a listed PFAS. Finally, 19 percent of the reports did not state the condition of use for the PFAS.

On-Site Releases

Only 20 facilities reported on-site releases of listed PFAS in 2020. The total amount of on-site releases reported nationally was 5,818 pounds, with land releases (via underground injection, surface impoundment, landfills, and other surface disposal methods) comprising the majority—87 percent, or 5,041 pounds—of total on-site releases. The percentages of releases reported to the air (fugitive and stack) and water are 6 percent and 8 percent, respectively.

On-Site Treatment and Storage

Twelve facilities reported to have “treated” a total of 413,179 pounds of PFAS on-site. “Treatment” refers to a variety of methods (e.g., biological treatment, incineration, or chemical oxidation) through which toxic chemicals in waste are, in varying degrees, destroyed.¹⁰ The most commonly reported process was incineration, with all 12 facilities reporting that they incinerated PFAS on-site. A total of 96,574 pounds of PFAS was incinerated across eight facilities that reported incineration as their *sole* method of “treatment” on-site.

For each TRI-listed PFAS manufactured, processed, or used over the 100-pound threshold, the facility must report the volume of the PFAS that was present at its site at any one time during 2020. Five PFAS (at seven facilities) were reported to have been stored at a volume of between 10,000 and 99,999 pounds. No PFAS was reported to have been stored at a volume of 100,000 pounds or more anywhere in the United States in 2020, though nine reports used the alternate reporting form that does not provide this information.

Off-Site Transfers and Treatment

According to reports submitted, the total amount of PFAS chemicals transferred for treatment or disposal at an off-site facility in 2020 is 319,481 pounds.

Three facilities sent a total of 149,858 pounds of PFAS to be recycled off-site. Eight facilities sent a total of 115,176 pounds of PFAS to be incinerated at another facility. Two facilities sent 188 pounds to be used for energy recovery, which, according to EPA, involves a chemical being “combusted in an industrial furnace . . . or boiler . . . to generate heat or energy for use at the [off-site] facility.”¹¹

Four facilities sent a total of 47,263 pounds of PFAS—with one facility sending a majority of 47,156 pounds—to a publicly owned treatment work (“POTW”). PFAS are known to pass through POTWs, remain in effluent that is discharged to surface waters, and also accumulate in biosolids or sludge that is often applied to agricultural lands.¹²

Finally, four facilities sent 4,662 pounds of PFAS to be disposed of via underground injection or landfills, and seven facilities sent 2,442 pounds of PFAS to be disposed of in other manners that either do not include the aforementioned methods or are unknown.

Some facilities that were reported to have received a waste transfer of a TRI-listed PFAS at a volume over 100 pounds did not report their “use” of the PFAS.¹³

Conclusions and Recommendations

1. The number of facilities reporting that they manufactured, processed, or otherwise used a listed PFAS over the 100-pound threshold in 2020—a mere 39 nationwide—is unexpectedly low given the volume of PFAS manufactured, imported into, and used in the U.S.
2. The number of individual PFAS chemicals that were reported as having been manufactured, processed, or otherwise used over the 100-pound threshold—43 PFAS out of the 172 listed PFAS in 2020—is also unexpectedly low.
3. The number of facilities that reported manufacture, processing, or use of PFAS, and that also reported *releasing* PFAS, was unexpectedly low—only 20 of 39. Nearly one-half of the facilities that reported having manufactured, processed, or used PFAS in 2020 reported that they did not release *any* PFAS into the environment.
4. Facilities that reported releases reported very low volumes of releases, with only 8 percent of reported releases being to water.
5. It is difficult to reconcile the low levels of reported manufacture, processing, use, and release with what is known about the number of PFAS manufactured in the United States, the number of sites where manufacture is occurring, the broad array of PFAS uses and applications, and the PFAS production volume by application—all of which is identified in EPA’s *Per- and Polyfluoroalkyl Substances (PFAS) Summary Report*.¹⁴
6. EPA should investigate potential non-compliance with TRI reporting requirements, including by (a) comparing information reported under the TRI and the 2020 Chemical Data Reporting Rule to identify potential violations, and (b) assessing whether facilities that use PFAS-based AFFF for firefighting (such as the Morris Air National Guard Base at the Tucson National Airport, the Davis-Monthan Air Force Base in Tucson, and the Suncor refinery in Commerce City, Colorado) should have reported.
7. Violators of TRI reporting requirements should be penalized.
8. EPA should significantly expand the list of PFAS on the TRI to include all PFAS approved for commerce (whether listed as active on the TSCA Inventory or approved via low-volume exemption), as low reporting levels could be attributable to PFAS-manufacturers, -processors, and -users moving away from TRI-listed PFAS.
9. EPA should revise its rules so that PFAS are not subject to the *de minimis* concentration exemption,¹⁵ as the low reporting levels could be attributable to reliance on that exemption, which was not intended by Congress.
10. EPA should revise its rules so that PFAS manufacturers, processors, and users of listed PFAS cannot use the “alternate threshold” of 1,000,000 pounds¹⁶ that allows limited reporting with less information, including no information about releases.

¹ *Addition of Certain PFAS to the TRI by the National Defense Authorization Act*, EPA, <https://www.epa.gov/toxics-release-inventory-tri-program/addition-certain-pfas-tri-national-defense-authorization-act> (last updated Jan. 12, 2021).

² Three additional PFAS were added to the TRI for the 2021 reporting cycle.

³ 42 U.S.C. § 11023.

⁴ CAS RN: 335-67-1, Full Name: Perfluorooctanoic acid

⁵ CAS RN: 13252-13-6, Full Name: Hexafluoropropylene oxide dimer acid; CAS RN: 62037-80-3, Full Name: Hexafluoropropylene oxide dimer acid ammonium salt

⁶ CAS RN: 1763-23-1, Full Name: Perfluorooctanesulfonic acid

⁷ CAS RN: 68227-96-3, Full Name: 2-Propenoic acid, butyl ester, telomer with 2-

[[[(heptadecafluorooctyl)sulfonyl]methylamino]ethyl 2-propenoate, 2-[methyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-propenoate, ?-(2-methyl-1-oxo-2-propenyl)-?-hydroxypoly(oxy-1,4-butanediyl), ?-(2-methyl-1-oxo-2-propenyl)-?-[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,4-butanediyl), 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-propenoate and 1-octanethiol

⁸ Manufacturing includes, but is not limited to, the chemical being created at the site (even unintentionally as a byproduct), being further processed after being produced or imported, or being intended to be sold or distributed.

⁹ Processing includes, but is not limited to, the chemical being used as a product ingredient, being used as a chemical reactant, being repackaged in a different form, or remaining as an impurity in the final mixture or product.

¹⁰ *Common TRI Terms*, EPA, <https://www.epa.gov/toxics-release-inventory-tri-program/common-tri-terms> (last updated Apr. 2, 2021).

¹¹ *Id.*

¹² EPA, *Preliminary Effluent Guidelines Program Plan 14*, at 3–20 (2019),

https://www.epa.gov/sites/default/files/2019-10/documents/prelim-eg-plan-14_oct-2019.pdf.

¹³ For example, the Chemours Washington Works facility in West Virginia reported transferring over 25,000 pounds of GenX (hexafluoropropylene oxide dimer acid) to Heritage Thermal Services (“Heritage”) in East Liverpool, Ohio, but Heritage did not submit a Form R for GenX, which it should have done if it “otherwise used” the GenX by incinerating it or treating it for destruction.

¹⁴ EPA Off. of Pollution Prevention and Toxics, *Per-and Polyfluoroalkyl Substances (PFAS) Summary Report* 3-1 tbl. 3-2, 4-2 tbl. 4-2, 4-3 tbl. 4-3, 4-4 tbl. 4-4, 4-5 (Sept. 5, 2018) (on file with Earthjustice pursuant to FOIA).

¹⁵ 40 C.F.R. § 372.38(a).

¹⁶ 40 C.F.R. § 372.27.

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