

Intentionally Added PFAS in Illinois Firefighting Foam (2024)



Submitted by Office of the Illinois State Fire Marshal
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Purpose

Under the PFAS Reduction Act (415 ILCS 170), established by Public Act 102-0290, the Office of the State Fire Marshal (OSFM) is tasked with surveying the Illinois fire service to determine the prevalence and use of Class B firefighting foam which contains intentionally added PFAS.

Background

PFAS, the short term for perfluoroalkyl and polyfluoroalkyl substances, are a group of manmade chemicals that have been widely used in industrial and consumer products since the 1940s. Among many other sources, PFAS can be found in some Class B firefighting foams. PFAS can accumulate in the environment and in the body, potentially causing adverse health impacts.

Older Class B foam formulations typically contain long-chain PFAS (e.g. PFOS or PFOA) as ingredients or contain precursors that degrade into long-chain PFAS in the environment. Such foams, sometimes called legacy foams, are considered to contain “intentionally added PFAS”.

Under the U.S. Environmental Protection Agency’s (USEPA’s) PFOA Stewardship Program, all U.S. foam manufacturers voluntarily reformulated their foams by 2016. These modern foam formulations contain short-chain PFAS which are thought to be less bioaccumulative and less toxic. Some manufacturers have also formulated fluorine-free firefighting foams.

Method

The Office of the State Fire Marshal requested participation by all Illinois fire departments in this survey. For determination of discharge or disposal occurrences in the “prior 12 months”, the 12-month period was October 1, 2023 to September 30, 2024. This is consistent with previous surveys for which the 12-month period was October 1 to September 30. OSFM intends to continue using the October through September 12-month period for future surveys.

To ensure consistency in reporting of foam content, the Office of the State Fire Marshal requested fire departments report information about the foam in their possession and worked

with foam manufacturers to identify those foams likely containing intentionally added PFAS, containing non-intentional PFAS (modern, short-chain foams), or containing no PFAS.

As part of the survey, the Office of the State Fire Marshal asked fire departments whether they had responded to the previous (2023) survey and whether they had additional foam to report. This allowed OSFM to build off results of the previous surveys and avoid unnecessary duplication of effort by fire departments or the agency. OSFM was also able to ask whether foam disposed of by fire departments had been reported on a previous survey.

The Office of the State Fire Marshal also requested information from the Illinois Emergency Management Agency on reported discharges or releases of Class B foam containing intentionally added PFAS and has incorporated those occurring during the same October 1, 2023 through September 30, 2024 12-month period into this report.

Results

In 2024, the Office of the State Fire Marshal received survey responses from 223 fire departments, 75 of which had not participated in last year's (2023) survey.

Throughout review of provided responses and data, the Office of the State Fire Marshal identified and reconciled duplicate responses and other apparent inconsistencies. The results of the survey are below.

Amount of Class B Firefighting Foam

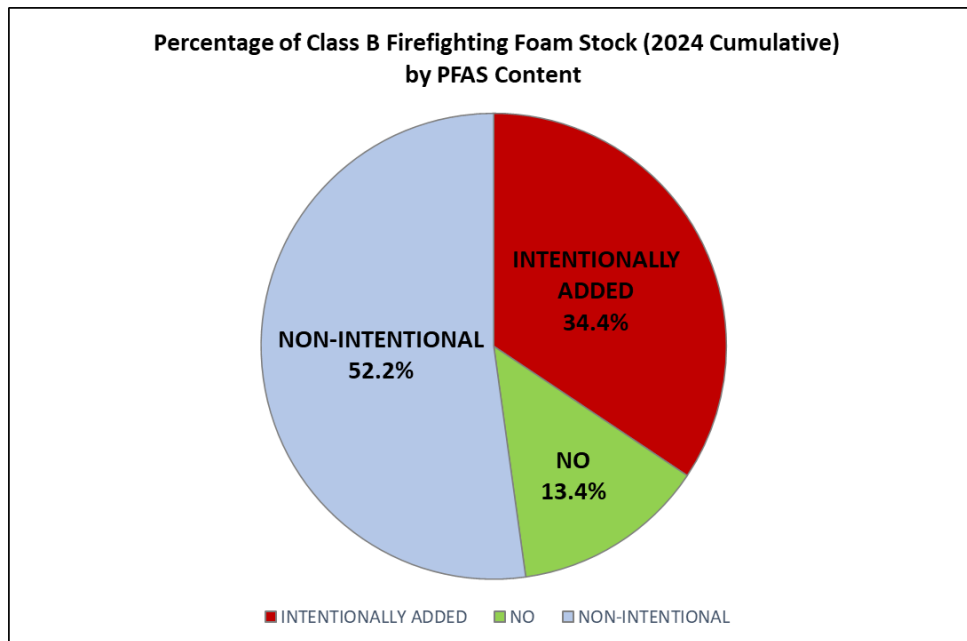
Illinois fire departments reported approximately 84,700 gallons of Class B firefighting foam in stock as of September 30, 2024. Though a significant portion of the available Class B firefighting foam stock likely contains intentionally added PFAS, a larger portion does not. Approximately 34% (29,100 gallons) of Class B firefighting foam reported likely contained intentionally added PFAS. By contrast, approximately 66% (55,600 gallons) of Class B firefighting foam stock reported did not contain intentionally added PFAS. As of this (2024) survey, foam that was previously designated "Unknown" has been reclassified as likely containing intentionally added PFAS.

See *Table 1. Reported Class B Firefighting Foam Stock of Illinois Fire Departments (2024 Cumulative)* and *Figure 1. Percentage of Class B Firefighting Foam Stock of Illinois Fire Departments (2024 Cumulative) by PFAS Content* on the following page.

Table 1. Reported Class B Firefighting Foam Stock of Illinois Fire Departments (2024 Cumulative)

Reported Class B Firefighting Foam Stock of Illinois Fire Departments (2024 Cumulative)					
Contains PFAS?	Gallons (2023 Cumulative)	Gallons (2024 Reported)	Gallons Disposed of Previously Reported Foam	Total (2024 Cumulative)	Percentage
INTENTIONALLY ADDED	30,091	854	1835	29,110	34.4%
NON-INTENTIONAL	44,795	125	710	44,210	52.2%
NO	10,925	455	0	11,380	13.4%
Total	85,811	1,434	2,545	84,700	100%

Figure 1. Percentage of Class B Firefighting Foam Stock of Illinois Fire Departments (2024 Cumulative) by PFAS Content



Discharge of Class B Foam

Illinois fire departments reported approximately 6,100 gallons of Class B firefighting foam likely containing intentionally added PFAS was discharged over the prior 12 months. It can be difficult to determine PFAS content of discharged foam, as foam product is loaded into emergency response vehicles prior to the time it is needed and records may not exist. All reported foam discharged in the prior 12-month period was presumed to contain intentionally added PFAS.

Reported discharges were approximately 1.2 times higher for the 2024 12-month period than for the 2023 12-month period. It is unclear whether increased reporting of discharge, rather than increased use, of Class B firefighting foam containing intentionally added PFAS has driven this increase. The reporting requirement for discharge of Class B firefighting foam containing intentionally added PFAS was enacted under the PFAS Reduction Act (415 ILCS 170) which became effective January 1, 2022; this is the second survey period during which the reporting requirement was in place during the entire surveyed period and the third survey period during which the reporting requirement was in place. Information on discharges was mainly sourced from data provided by the Illinois Emergency Management Agency (IEMA), the recipient of required discharge reporting, rather than the survey.

Table 2. Reported Discharges of Class B Firefighting Foam of Illinois Fire Departments (2024 Cumulative) Presumed to Contain Intentionally Added PFAS

Reported Discharges of Class B Firefighting Foam of Illinois Fire Departments (2024 Cumulative) Presumed to Contain Intentionally Added PFAS		
Gallons (2023 Cumulative)	Gallons (2024 Reported)	Total (2024 Cumulative)
5,003	6,143	11,146

Disposal of Class B Foam

Fire departments reported disposal of approximately 2,600 gallons of Class B firefighting foam likely containing intentionally added PFAS. Disposal was conducted mainly by special waste disposal companies. Added to last year’s (2023) cumulative disposed gallons, the fire service has disposed of over 4,300 gallons of Class B firefighting foam likely containing intentionally added PFAS in four years. Continuing at the average rate of 1,100 gallons per year, it would take approximately 26 additional years to dispose of remaining reported Class B firefighting foam likely containing intentionally added PFAS.

Table 3. Reported Disposals of Class B Firefighting Foam Containing Intentionally Added PFAS by Illinois Fire Departments (2024 Cumulative)

Reported Disposals of Class B Firefighting Foam Containing Intentionally Added PFAS by Illinois Fire Departments (2024 Cumulative)		
Gallons (2023 Cumulative)	Gallons (2024)	Total (2024 Cumulative)
1,761	2,590	4,351

Conclusion

More than one third of Illinois' reported Class B firefighting foam in stock likely contains intentionally added PFAS; by contrast, approximately two thirds of reported Class B firefighting foam does not contain intentionally added PFAS. Reported discharges in 2024 were higher than reported discharges in 2023, possibly attributable to increased awareness of required reporting. Reported disposals in 2024 were equivalent to a small portion of available Class B firefighting foam stock which likely contains intentionally added PFAS.

The Office of the State Fire Marshal is tasked with surveying the fire service annually on this subject matter for the next two years. Future surveys may offer additional insights.