CL:AIRE

PFAS SP 13
(July 2026)

PFAS Site Profile

PFAS Site Profiles were developed as part of the Environment Agency PFAS Risk Screening Project and represent an understanding of PFAS uses and occurrences from specific industry sectors at the time of writing in March 2024. This profile focuses on Civil and Military Airfields and Airports.

Fire Suppression Systems

1. INTRODUCTION

1.1 Overview

Per- and poly-fluoroalkyl substances (PFAS) are a broad group of more than 12,000 synthetic fluorinated organic chemicals. PFAS have been used in a wide variety of consumer products and industrial applications since the 1940s because of their unique chemical and physical properties, including oil, water and stain repellence, temperature and chemical resistance, and surfactant properties. These properties mean they are also extremely persistent in the environment. Some PFAS are bio-accumulative and toxic, and/or highly mobile.

Increasing awareness of the widespread presence of PFAS has heightened regulatory concerns about their potential risks to human health and the environment. To ensure effective actions are implemented the Environment Agency needs to better understand the potential sources of PFAS, the mechanisms of transport (pathways) and the relative significance of these substances in the environment.

As part of the Environment Agency PFAS risk screening project (Phases 1 to 4 carried out between 2020 to 2025) Jacobs developed individual site profiles for several potential high risk site types. They focus on specific industry sectors, representing potentially important sources of PFAS, whether from use or manufacture, with the potential for release into the environment.

The primary aim of these profiles is to help those parties involved in the regulation, investigation and remediation of sites where these problem chemicals present a risk to health and the wider environment. These are not definitive studies, but they introduce some of the technical considerations that need to be borne in mind when assessing a particular type of facility. Representing an understanding of PFAS at the time of writing (March 2024) and with published literature notably increasing continuously as practitioners and regulators seek to improve their understanding of PFAS, users must make their own appropriate assessments with current knowledge and specific to their site.

The reader is referred to Ross and Hurst (2019) and ITRC (2023) for more detailed information on PFAS chemistry, properties, fate and transport, risk assessment and remediation, to Glüge et al. (2020) for a review of the diversity of uses of PFAS, and to Ross (2023) for an overview of the uses of PFAS to assist with identification of sites of concern.

1.2 Site Profile Selection and Preparation

The site types for which site profiles have been developed in this project have been selected to represent potentially important users and sources of PFAS release to the environment in terms of quantity, frequency and historical records available.

Technical and scientific publications, fact-sheets, regulations, product websites, articles and online newspaper reporting interviews on the PFAS discussions were researched and reviewed to obtain information on the use of PFAS, with particular reference to the United Kingdom.

Each site profile includes site background information focused on PFAS use and identification of specific zones (where applicable), description of the processes involving PFAS, types of PFAS likely to be present, and an indication of the impact to water and soil. Brief examples and case studies from the literature are also provided.

For each site type a number of zones or activities have been identified where PFAS may be used. It should be recognised that not every site of this type will have all the activities identified. For example, a fire station site may be anything from a building where fire tenders containing Aqueous Film-Forming Foam (AFFF) are based (but filling, maintenance and training happen elsewhere) to a hub with a wide range of activities such as fire practice training, concentrate storage etc. in addition to vehicle storage.

Site profiles have been created for the following site types identified as potentially important potential sources of PFAS release to the environment:

- Civil and Military Airfields and Airports;
- Control of Major Accident Hazards (COMAH) Regulated Sites;
- Fire-fighting Grounds and Fire Stations;
- Landfills;
- Metal Manufacturing and Finishing;
- Military Bases (other than Air Transport Sites);
- Oil and Gas Industry (onshore exploration and extraction operations);
- Paper and Cardboard Manufacturing;
- Refineries and Fuel Sites;
- Textiles, Upholstery, Leather, Apparel and Carpets (TULAC) Manufacturing; and
- Waste Water Treatment Works.

PFAS Site Profile

Additional site profiles which do not relate directly to a particular site type have been developed for the following subject areas, which have potential applications within many different site types:

- Aqueous Film-Forming Foam (AFFF); and
- Fire Suppression Systems.

2. BACKGROUND TO FIRE SUPPRESSION SYSTEMS

Fire suppression systems do not directly relate to a particular site type. This site profile has been developed to cover fire suppression systems which have the potential to be in use on many sites.

Foam suppression systems are fixed sprinkler systems commonly used in large areas where there are a lot of flammable or combustible liquids, including flammable liquid storage, processing areas, warehouses, hangars and marine applications. Fire-fighting foam including AFFF is commonly used in fire suppression systems, (refer to the site profile overview for AFFF (CL:AIRE, 2026l)). This can include fluorinated foams containing PFAS, and fluorine-free foams. Not all fixed fire suppression systems use foam, with gas systems and water systems also used for specific applications. Not all foam systems contain PFAS.

2.1 Fire Suppression System Design and Operation

Foam suppression systems are designed to combine water and foam and discharge it rapidly for large scale fire extinguishment, for example with high expansion foam a large warehouse or hangar can be filled with foam in seconds. The foam suppresses and smothers fire and vapours and prevents re-ignition. The foaming agent is stored separately from the water supply and the two are mixed within the piping system prior to discharge. The design of the foam suppression system will depend on many factors including, but not limited to, the size of the facility, the hazard area and the assets being protected. All systems require a water supply, a foam concentrate tank, and a means of transferring the water and foam mixture to the required discharge point under pressure to achieve the high volumes required for rapid extinguishment. The pipework may be above or below ground. In smaller systems the foam concentrate may be added close to the point of discharge, but on large sites the foam mix may be distributed around the site under pressure. As detailed below, this results in the potential for rapid release of a significant volume of foam in the case of system failure or accidental discharge.

Foam suppressions systems should be designed to include the containment and suitable disposal of discharged fluids, including discharges during maintenance and testing as well as emergency response, in accordance with the British Standard BS 5306 (BSI, 1998) or other relevant standards. Contained fluids may then be discharged to the site waste-water treatment system, or the foul sewer. It is understood that PFAS are currently not generally considered within discharge consents, and site water treatment systems are not designed for, and are generally ineffective at, removing PFAS. It is therefore likely that PFAS are being discharged to the foul water network from these sites without currently needing to be regulated.

Fire suppression systems are designed for emergency use, therefore the majority of the PFAS in use in such systems is expected to remain unused. The systems do however require regular inspection, testing and maintenance, which may or may not require discharge of foam. Full scale demonstrations may also be required as part of emergency practice required under COMAH (refer to the site profile for COMAH sites (CL:AIRE, 2026b)). According to the European Chemicals Agency (ECHA, 2015), any foam that is consumed in such exercises should be restored to the required minimum storage volume using fresh foam concentrate. Foams have a typical shelf life of around 20 years, therefore there is no need to remove and replace foams on a regular basis. This may result in fixed foam systems continuing to hold foam types which have been withdrawn from general use, and also containing mixtures of old and new foam stocks. For example, while restrictions are now in place to prevent the selling of foams containing PFOA, there are derogations in place to permit the continuing use of existing stocks for 20 years after the restriction comes into place. It should be noted also that PFAS adsorb onto surfaces and are particularly difficult to remove. There is therefore potential for cross-over and some PFAS to remain in systems where fluorinated foams had been used in the past, even if they are no longer used in the system. Testing is therefore required to verify the composition of foam that may be discharged from a system, even if the operator can provide information on the foam concentrate that is currently being used to top-up the system.

2.2 Fire Suppression System Applications

It is understood that the use of fixed foam fire suppression systems is not specifically mandated in regulations, however they may be required for insurance purposes, for compliance with fire prevention requirements under COMAH (refer to the site profile for COMAH sites (CL:AIRE, 2026b)), or with Environmental Permitting Regulations (as part of the fire prevention plan). It is expected that they are in widespread use in the UK, not only at COMAH sites, but also at other industrial and commercial sites. Online marketing information for foam fire suppression systems indicates their use in the following sectors:

- Refineries;
- Aircraft hangars;
- Jet engine testing facilities;
- Warehouses;
- Marine applications;
- Processing areas;
- Flammable liquid storage;
- Petro-chemical tank farms;
- Liquefied natural gas storage;
- Loading docks;
- Conveyors; and
- Tunnels.

2.3 Use of Fluorinated AFFF in Fire Suppression Systems

There is evidence for widespread use of fluorinated AFFF in fire suppression systems, and also that this use represents a large proportion of the total stock of AFFF held in Europe and the UK. A report for the Irish EPA (SWECO, 2020) reviewed the use of AFFF in the Republic of Ireland, surveying site operators and users to obtain information on current and past use. While uptake of the survey was somewhat limited, the report provides a picture of AFFF use in industry in Ireland in 2020. They found that automated fire suppression systems accounted for around 70% of the total stock of PFAS-containing foams identified in the survey. This was associated with fuel and solvent storage facilities at power plants, fuel terminals and other storage facilities and pharmaceutical facilities.

System failure can be a common cause of incidents involving releases to the ground/drainage system associated with foam fire suppression systems.

2.4 Examples of Accidental Releases

Aircraft hangar systems appear particularly prone to accidental discharge, with the potential for very large volumes of foam being discharged rapidly. A study was undertaken by the University of Maryland (UMD) in 2019 (UMD, 2019) after concerns were raised over the tendency for these systems to inadvertently discharge causing significant life safety issues, property damage, major financial and environmental impacts. UMD surveyed insurance companies, operators, and the national air transportation association. One hundred and seventy-four incident reports of foam discharges over the last 16 years, both in response to fires and accidental discharge, were received from 11 sources, mostly reported by insurance companies. The majority (85%) of reports received were from the USA. The remaining 15% of reports originated from 8 other (unnamed) countries. Of the 174 incidents of foam discharge from such systems during the period 2004 – 2019, 37 incidents were where the foam system had discharged in response to a fire and 137 incidents were where there was an accidental foam discharge. Accidental discharge of foam from hangars can result in substantial environmental damage as the foam is likely to be discharged to surface water drainage systems or to soft ground where infiltration to groundwater may occur. Documented examples of environmental damage associated with accidental hangar foam discharge include Schiphol Airport and Toronto Airport.

The 2019 survey in the Republic of Ireland (SWECO, 2020) also gathered data on accidental discharge of foam including from fire suppression systems. They gathered data from eight respondents citing 10 incidents over the period 2006 to 2020, mostly referencing accidental losses from fixed systems. These include accidental discharge during system commissioning, testing and maintenance, activations during project work and false activation at a tank farm. The releases were generally captured in dedicated onsite retention facilities, or discharged to the site waste water treatment plant or foul sewer. The quantities of foam released were reported to be fewer than 20 litres of concentrate in each case.

Two examples of incidents of the release of AFFF from fire suppression systems in England have been identified from Environment Agency records. These incidents were not identified by systematic review and it is not known how common such incidents are in the UK. These are detailed further below.

One incident was reported by a chemicals manufacturer at a site which is both a COMAH site and a regulated installation under EPR. The operator noted a leakage of the 'underground foam ring main system' which occurred during routine testing of the fire protection system. Some of the foam leaked into the surface water discharge system which discharges to the local estuary. Although the leakage to the drainage system was spotted quickly and stopped within 30 minutes, it was estimated that up to 2 tonnes of foam and water had been released to the surface water drainage system and the estuary. The foam in question was identified as a 'C6' AFFF that does not contain the regulated PFOS or PFOA, however is likely to have contained 6:2 FTS and a precursor of PFHxA and other short-chain PFAS.

The other incident was identified on the Environment Agency National Incident Reporting System, and described accidental damage to a sprinkler system as a result of a collision with a vehicle, and the loss of about 400 litres of AFFF foam mixed with water (50/50), some of which entered drains. The business in question appears to be a relatively small printer ink factory, and not a COMAH site or regulated installation under EPR. This example illustrates the potential for widespread use of foam concentrates in fire suppression systems and potential for accidental loss. It also highlights the potential for foam use by relatively small industrial users which might not have been picked up in the reported national surveys.

3. CASE STUDIES

Three sites were reviewed as case studies with the findings listed in Table 1.

4. PROCESS

Fire suppression systems may result in the release into the environment from the following:

- Commissioning, routine testing and maintenance;
- Use in training exercises including practice emergency response;
- Incident and emergency response;
- Large volume accidental loss through systems failure;
- Low volume accidental release during storage, transfer and maintenance;
- Discharge of contained fluids via waste water treatment systems or direct to foul sewer, drain, surface water or ground;
- Controlled or uncontrolled waste disposal; and
- Slow release of AFFF previously adsorbed to concrete or other porous surfaces during prior release.

Table 1. Case studies.

1. Schiphol Airport, Netherlands
In July 2008, an error in the sprinkler-system at a hangar at Schiphol-Oost released 10,000 litres of AFFF, containing 143 kg of PFOS, into the surrounding environment (Nordic Council of Ministers, 2019). The release spread into waste water reservoirs, which then leaked and caused substantial contamination of soil and surface water. Contaminated soil from this incident also resulted in delays of over a year to a project to build a new bus lane in Schiphol-Oost in 2017. Over 50,000 m^3 of the soil dug up was found to be contaminated and thus difficult to dispose. Nordic Council of Ministers (2019) reported the cost of remediation was estimated as €30–40 million.
2. Toronto International Airport, Canada
According to Awad et al. (2011), in June 2000, a fire alarm at an airline hangar at Toronto International Airport malfunctioned, releasing 22,000 litres of PFOS-containing AFFF and 450,000 litres of water from the sprinkler system into the storm sewers. The AFFF passed through catch basins and storm sewers before being discharged into a nearby creek. The total quantity of perfluorinated compounds released was estimated at 330–1650 kg.
3. Tank farm at a former industrial complex, UK
This case study is based on a conference presentation (Ogden, 2022). A former industrial complex located in a rural setting of the UK was being redeveloped. The site consisted of a hydrocarbon processing plant including a tank farm with a fire suppression system including foam pourers. AFFFs were used on site but the formulations of AFFFs were not known. The fire systems were tested regularly, and foams were released to the site drainage network via sumps into bunds. The site was decommissioned and at the time of the study consisted of stockpiles of demolished bund walls, plinths and lumps of concrete of varying size from large slabs to powder. Base slabs remained in place. PFAS were identified in soil and groundwater from initial tests and therefore an investigation was carried out to establish whether the demolished concrete and base slab were contaminated with PFAS. Stockpile arisings and base slabs were sampled and tested for PFAS. Unmilled samples contained leachable amounts of PFAS but a risk assessment concluded that the concentrations were not so high as to cause unacceptable pollution to the environment. Base slab core samples were found to be contaminated with PFAS at the top and the bottom of the core but not in the middle which suggested potential secondary contamination of the base of slab from rising groundwater contaminated with PFAS. The case study demonstrates that activities associated with testing and maintenance of a fire suppression system can result in PFAS contamination including concrete used in bunds.

Land uses with the potential for foam fire suppression systems include (but are not limited to):

- Fuel storage sites;
- Airports and airfields (military and civilian) including hangars and fuel stores;
- Large industrial sites including COMAH sites, refineries, steelworks;
- Small industrial sites with fire suppression systems;
- Ports and docks; and
- Warehouses, conveyors, tunnels.

Waste water and sewerage systems receiving discharge and runoff from such facilities may also be impacted.

5. KEY PFAS CONTAMINANTS OF CONCERN

A wide spectrum of PFAS precursors and arrowhead products may be present associated with AFFF used in foam fire suppression systems (refer to the site profile for AFFF (CL:AIRE, 2026l)).

The actual PFAS present at any one site will vary dependent on the AFFF formulations used. Since the expectation is that the foam suppression system will not be used, and AFFF has a typical shelf life of 20 years, fire suppression systems may contain stocks of AFFF types which have since been withdrawn from the market due to environmental concerns. Systems do require regular top-up to replace concentrate consumed in testing and maintenance and may therefore contain mixtures of formulations. Also, the tendency of PFAS to adsorb to surfaces means that it is difficult to remove all PFAS from pipework and even if the system is drained with the intention of removing old foams, some cross-over may occur. This all means that testing is required to demonstrate the composition of the foam within a system, and while the operator may know the composition of the foam currently being used to top-up the system, this may not be representative of the composition that may be discharged.

ACKNOWLEDGEMENTS AND SUGGESTED CITATION

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IMPORTANT NOTES FOR READERS OF THE PFAS SITE PROFILES

The PFAS Site Profiles are based on available online literature and review of readily available technical publications at the time of writing (2020-2024). The authors recognise that additional information may be available that has not been used in this study.

The published literature on PFAS occurrence and distribution is vast and continually expanding. For example, the Interstate Technology and Regulatory Council web resource cited in the PFAS Site Profiles as “ITRC (2023)” was substantially updated in January 2026.

The purpose of the PFAS Site Profiles is to provide regulators and other interested parties with researched advice on how to assess problem sites that may be impacted by legacy use or release of PFAS. The profiles do not seek to address the specific circumstances of each site as these will be unique. As such, the PFAS Site Profiles should be read with the following reservations in mind:

- Practices can vary between different sites and therefore individual sites may not have been exposed to the typical PFAS contaminants of concern as detailed in each site profile;
- Site exposure to PFAS contaminants of concern may vary based on practices and equipment used on site; and
- Given the longevity of PFAS in the environment, site profiles may refer to practices which are no longer followed, and subsequently may omit current practices which avoid contamination.

DISCLAIMER

The information, views and conclusions drawn concerning the PFAS Site Profiles are based, in part, on information supplied to Jacobs by third parties; and from publicly available information. Jacobs has proceeded in good faith on the assumption that this information is accurate and complete. Jacobs accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to Jacobs by third parties or available from public sources.

All users must make their own appropriate assessments specific to their site (or group of sites).

For the avoidance of doubt none of CL:AIRE, Jacobs or the Environment Agency accept liabilities resulting from the use or interpretation of the contents of the PFAS Site Profiles.

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ACRONYMS AND ABBREVIATIONS

Note: this list of acronyms and abbreviations includes those used across all the site profiles and therefore may include some acronyms and abbreviations not used within this profile.

General Acronym / Abbreviation	Definition	General Acronym / Abbreviation	Definition
AFFF	Aqueous Film-Forming Foam	HSE	Health and Safety Executive
ALARP	As Low As Reasonably Practicable	ITRC	Interstate Technology and Regulatory Council
AR-FFFP	Alcohol resistant film-forming fluoroprotein foam	LCMS	Liquid Chromatography Mass Spectrometry
BOW	Bilge and oily waste water	LPG	Liquified Petroleum Gas
CA	Competent Authority	MAPP	Major accident prevention policy
CAS	Chemical Abstracts Service	MILSPEC	Military Specification
CAFS	Compressed Air Foam System	MSDS	Material Safety Data Sheets
CDOIF	Chemical and Downstream Oil Industries Forum	NAPL	Non Aqueous Phase Liquid
CIMAH	Control of Industrial Major Accident Hazards	NCM	Nordic Council of Ministers
CIP	Chemicals Investigations Programme	NIHHS	Notification of Installations Handling Hazardous Substances Regulations
CLP	Classification Labelling and Packaging	NORM	Naturally occurring radioactive material
CO_2	Carbon dioxide	OECD	Organization for Economic Cooperation and Development
COMAH	Control Of Major Accident Hazards	ONR	Office for Nuclear Regulation
CPI	Confederation of Paper Industries	PCM	Paper and Cardboard Manufacturing
DoD	Department of Defence (Australia)/Defense (USA)	PNEC	Predicted No-Effect Concentrations
DoE	Department of Environment	PPB	Parts Per Billion
DWS	Drinking Water Standards	PPE	Personal protective equipment
ECF	Electrochemical fluorination	RAAF	Royal Australian Air Force
EOF	Extractable Organic Fluorine	REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
EPA	Environmental Protection Agency (for Denmark)	STM	Surface treatment of metals
EPR	Environmental Permitting Regulations	TOP	Total Oxidisable Precursor
EQS	Environmental Quality Standard	TULAC	Textiles, Upholstery, Leather, Apparel and Carpets
EU	European Union	UBA	Umwelt Bundesamt (German Environment Agency)
FCM	Food Contact Material	UK WIR	United Kingdom Water Industry Research
FFF	Fire-Fighting Foam	UMD	University of Maryland
FFFP	Film-Forming Fluoroprotein	US EPA	United States Environmental Protection Agency
FP	Fluoroprotein	WWTP	Waste Water Treatment Plant
FPP	Fire Prevention Plans	WWTW	Waste Water Treatment Works
FRS	Fire and Rescue Service		

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PFAS Acronym / Abbreviation	PFAS Definition	PFAS Acronym / Abbreviation	PFAS Definition
10:2 FTOH	10:2 Fluorotelomer alcohol	HFPO-DA	Hexafluoropropylene oxide-dimer acid
10:2 FTS	10:2 Fluorotelomer sulfonate or sulfonic acid	HFPO-TA	Hexafluoropropylene oxide-trimer acid
10:2 FTUCA	10:2 Fluorotelomer unsaturated carboxylic acids	MeFOSAA	Methylperfluorooctanesulfonamidoacetic acid
11Cl-PF3OUdS	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	PAP	Polyfluorinated alkyl phosphates
12:2 FTS	12:2 Fluorotelomer sulfonate or sulfonic acid	PASF	Perfluoroalkane sulfonyl fluoride substances
14:2 FTS	14:2 Fluorotelomer sulfonate or sulfonic acid	PFA	Perfluoralkoxy polymer
12:2 FTAB	12:2 Fluorotelomer sulfonamido betaine	PFAA	Perfluoroalkyl acid
4:2 FTS	4:2 Fluorotelomer sulfonate or sulfonic acid	PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
5:3 FTCA	5:3 Fluorotelomer carboxylic acid	PFBA	Perfluorobutanoate or Perfluorobutanoic acid
6:2 FTAB	6:2 Fluorotelomer sulfonamidoalkyl betaine (see also CMDFPAH)	PFBS	Perfluorobutyl sulfonate or Perfluorobutyl sulfonic acid
6:2 FTCA	6:2 Fluorotelomer carboxylic acid	PFC	Perfluorinated Compound
6:2 FTOH	6:2 Fluorotelomer alcohol	PFCA	Perfluoroalkyl carboxylic acid
6:2 FTS	6:2 Fluorotelomer sulfonate or sulfonic acid (see also TDFOSA)	PFDA	Perfluorodecanoate or Perfluorodecanoic acid
6:2 FTUCA	6:2 Fluorotelomer unsaturated carboxylic acids	PFDoA	Perfluorododecanoate or Perfluorododecanoic acid
6:2 diPAP	6:2 Fluorotelomer phosphate diester	PFECA	Perfluoroalkyl ether carboxylic acid
8:2 Cl-PFESA	8:2 Chlorinated perfluoroalkyl ether sulfonic acid	PFECHS	Perfluoroethylcyclohexane sulfonate
8:2 FTOH	8:2 Fluorotelomer alcohol	PFESA	Perfluoroalkyl ether sulfonic acid
8:2 FTS	8:2 Fluorotelomer sulfonate or sulfonic acid	PFHpA	Perfluoroheptanoate or Perfluoroheptanoic acid
8:2 FTUCA	8:2 Fluorotelomer unsaturated carboxylic acids	PFHpS	Perfluoroheptane sulfonate or Perfluoroheptane sulfonic acid
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)	PFHxA	Perfluorohexanoate or Perfluorohexanoic acid
ADONA	4,8-Dioxa-3H-perfluorononanoic acid	PFHxS	Perfluorohexane sulfonate or Perfluorohexane sulfonic acid
CMDFPAH	Carboxymethyldimethyl-3-[[(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)sulphonyl]amino]propylammonium hydroxide; a synonym of 6:2 FTAB used in UKWIR reports	PFNA	Perfluorononanoate or Perfluorononanoic acid
EtFOSA	N-ethyl-perfluorooctane sulfonamide	PFOA	Perfluorooctanoate or Perfluorooctanoic acid
EtFOSAA	N-ethyl-perfluorooctane sulfonamido acetic acid	PFOS	Perfluorooctane sulfonate or Perfluorooctane sulfonic acid
EtFOSE	N-ethyl-N-(2-hydroxyethyl) perfluorooctane sulfonamide	PFOSA	Perfluorooctane sulfonamide (FOSA)
F-53B	Trade name for chlorinated polyfluoroalkyl ether sulfonic acids (9Cl-PF3ONS and 11Cl-PF3OUdS)	PFOSE	Perfluorooctane sulfonamido ethanol
FASA	Perfluoroalkane sulfonamide	PFPA	Perfluoropentanoate or Perfluoropentanoic acid
FBSA	Perfluorobutane sulfonamide	PFPE	Phosphate ester salts
FOSA	Perfluorooctane sulfonamide	PFPeA	Perfluoropentanoic acid
FOSAA	Perfluorooctane sulfonamidoacetic acid	PFPeS	Perfluoropentane sulfonate or Perfluoropentane sulfonic acid
FOSE	Fluorooctane sulfonamido ethanol	PFPS	Perfluoropentane sulfonate
FTCA	Fluorotelomer carboxylic acid	PFSA	Perfluoralkane sulfonic acid
FTMAC	Fluorotelomer methacrylate	PFUnDA	Perfluoroundecanoate or Perfluoroundecanoic acid
FTOH	Fluorotelomer alcohol	POSF	Perfluorooctane sulfonyl fluoride
FTS	Fluorotelomer sulfonate	PTFE	Polytetrafluoroethylene
FTSA	Fluorotelomer sulfonic acid	TDFOSA	3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctane-1-sulfonic acid; a synonym for 6:2 FTS used in UKWIR reports
Gen-X	Trade name for HFPO-DA		