

**Simon Wood**  
Environment, Health & Safety  
Specialist

Direct telephone: 020 7269 7607  
UKPIA switchboard: 020 7269 7600  
Email: [simon.wood@ukpia.com](mailto:simon.wood@ukpia.com)  
Web address: <https://www.ukpia.com/>

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Department for Environment Food and Rural Affairs  
Seacole Building  
2 Marsham Street  
London  
SW1P 4DF

## **UKPIA response to the DEFRA review of statutory exemptions for permitted uses of persistent organic pollutants (POPs)**

UK Petroleum Industry Association (UKPIA) represents the eight main oil refining and marketing companies and a number of the smaller standalone operators and oil storage terminals operating in the UK. Together these companies are responsible for the sourcing and supply of petroleum products meeting over 85% of UK inland demand, accounting for a third of total primary UK energy.

### **Response to the review:**

UKPIA and our members are keen to help the UK Government to meet the commitment to phase out the use of PFOAs.

Aqueous Film Forming Foams (AFFFs) are the predominant firefighting foams used in the UK Refineries and Terminals. Perfluorooctanoic acid (PFOA) and related substances have been used in the formulation of many of these foams.

Many if not all Major Accident Hazard sites have significant stocks of AFFF as part of their inventories for emergency planning measures as this is required under Seveso III and implemented as Control of Major Accident Hazards [COMAH]. Alternatives to AFFF containing PFOA are AFFF foams that are based on shorter chain (C6 PFAS) chemistry or fluorine free foams that do not have similar film forming properties.

As refineries and terminals store large volumes of hydrocarbon fuels and solvents, emergency plans include responding to a large, deep pool liquid hydrocarbon fires (e.g. storage tank fire). AFFF provides effective response in these situations and use of AFFF is particularly important when fighting alcohol/ethanol fires or fires in which these are present.

UKPIA believes that fluorine-free foam can be a suitable alternative to AFFF for some fire scenarios. We are aware that large scale testing of the efficiency of

fluorine free foams to respond to the specific fire scenarios described above is still ongoing (e.g. [LASTFIRE](#) project described below). Since the physical properties of fluorine-free fire-fighting foams and the technical specifications required for foam delivery equipment differ significantly between foam types, UKPIA believes that when making the change to fluorine-free fire-fighting foams detailed planning and optimisation of dispersal systems is required. This will enable the downstream oil sector site operators to demonstrate, with confidence, that measures are in place to support their obligations under COMAH.

## **Regulatory Requirements and Compliance Deadline**

[Regulation \(EU\) 2019/1021 \(as amended\)](#) implements a number of commitments under the Stockholm Convention on Persistent Organic Pollutants (POPs).

These include measures restricting or prohibiting the manufacturing, placing on the market and use of PFOA, its salts and PFOA-related compounds used in fire-fighting foam for liquid fuel vapour suppression and Class B fires.

Annex 1 of the Regulation states:

*By way of derogation, the use of PFOA, its salts and PFOA-related compounds shall be allowed in fire-fighting foam for liquid fuel vapour suppression and liquid fuel fire (Class B fires) already installed in systems, including both mobile and fixed systems, until 4 July 2025, subject to the following conditions:*

- a) fire-fighting foam that contains or may contain PFOA, its salts and/or PFOA-related compounds shall not be used for training;*
- b) fire-fighting foam that contains or may contain PFOA, its salts and/or PFOA-related compounds shall not be used for testing unless all releases are contained;*
- c) as from 1 January 2023, uses of fire-fighting foam that contains or may contain PFOA, its salts and/or PFOA-related compounds shall only be allowed in sites where all releases can be contained;*
- d) fire-fighting foam stockpiles that contain or may contain PFOA, its salts and/or PFOA-related compounds shall be managed in accordance with Article 5.*

This regulation was taken into UK law by the [European Union \(Withdrawal\) Act 2018/European Union \(Withdrawal Agreement\) Act 2020](#).

The UK's Competent Authority expects UKPIA member companies to meet the July 2025 compliance deadline. UKPIA is working with our members to ensure that all measures necessary are in place to comply with the deadline.

## **UKPIA Concerns**

UKPIA is deeply concerned with the potential implication of clause (C) of the regulation. In particular, the requirement that “*all releases*” when using fire-fighting foam “*will be contained*”. UKPIA believes that further consideration is required given to the potential implications of the terms. The reason for the request for consideration is that it may be difficult for some site operators to demonstrate that

“all releases can be contained” as there is the potential for foam containing PFOA to be blown off site, if used. This would effectively bring forward the compliance date to 1<sup>st</sup> January 2023, impacting a significant number of site operators.

Sites hold stocks of PFOA-containing AFFFs as part of their inventories for emergency planning measures, as this is required under Seveso III and COMAH. Under COMAH, demonstration that all measures necessary are being taken to ensure that the risk of a fire is limited to the point that it should not occur with the risk further mitigated by holding stocks of PFOA-containing AFFFs as a last resort.

UKPIA believes that, if the potential for fire is shown to be very low then the potential need to use firefighting foams is also very low. However, there is always a potential risk of fire occurring, even if it is a very low risk. Research indicates that the risk of not being able to adequately contain a fire using fluorine-free alternatives is increased without properly planned and optimised deployment systems in place. This risk will be increased for a significant number of site operators if they are rigidly expected to comply with the January 2023 deadline. UKPIA requests that serious consideration is given to the implications of the sub clauses of the regulation and their impact on safety.

It is UKPIA’s understanding that if a significant number of site operators have to meet the January 2023 deadline the following additional issues may occur:

- Industry will need to source new firefighting foam equipment which may cause a supply and demand issue. Changing existing equipment to accommodate new foam proportioning valves will take time to implement across sites and will be challenging to do so before the 2023 deadline.
- The EA have advised that “not all fluorinated foams will contain PFOA, and these foams can continue to be used after the 2023 and 2025 deadlines” appears to extend a lifeline to sites that cannot guarantee containment of releases after 1st January 2023. However, this penalises site operators financially as they will have to invest twice. Firstly, in non PFOA foam and its ancillary requirements. Then again in the Fluorine Free Alternatives and their distribution systems once they have been proved to be effective on all types and classes of fire. This not only has a financial penalty, but also a penalty on the environment too. Disposal mechanism for the waste material derived from the removal of the prohibited substances is very high temperature incineration. This has the impact of releasing Green House Gases (GHGs) and residues that need to be disposed.
- UK capacity to dispose of existing PFOA-containing foam stocks covered by the Regulation is limited. Disposal can only be achieved through high temperature hazardous waste incineration. There are only 4 High Temperature Incinerators focused on disposal of Hazardous Waste substances in the UK. This has further potential to impact Environmental Waste Contractors who may have limitations on the volumes that they are permitted to receive and handle of this type of waste.
- Testing has shown fluorine-free foam requires larger volumes of foam to extinguish fires than existing PFOA- containing foam (potentially 8% foam

instead of 3%); this means larger amounts of foam stocks will need to be stored on facilities and new tanks required.

- Purchasing fluorine-free foam to meet the deadline may be problematic as supply may not be able to meet demand.
- Until completion of large-scale testing demonstrates the efficiency of fluorine free foam to fight large hydrocarbon storage tank fires and large fires where alcohols are present, some of our members believe that to continue to be able to ensure an effective fire response in such scenarios and meet their obligations under COMAH they would need to switch to C6 PFAS foam.

Response to large hydrocarbon fires usually require liaison between refinery / distribution sites and local council emergency services; roll-out and implementation of fluorine-free foams needs to be universal for all users otherwise compliance with Annex 1 to Regulation (EU) 2019/1021 and COMAH regulatory requirements may become an issue. For example, utilisation of fluorine-free foams and fluorine-containing foams in the event of a large hydrocarbon fire. More information is required on the concurrent use and compatibility of different fire-fighting foams as one product could affect the efficiency of another.

### **The LASTFIRE Project**

[LASTFIRE](#) is a project initiated by a consortium of 16 oil companies to review the risks associated with large diameter (greater than 40m) open top floating roof storage tanks. The project was initiated due to the oil and petrochemical industries recognition that the fire hazards associated with large diameter, open top floating roof tanks were insufficiently understood to be able to develop fully justified site-specific fire response and risk reduction policies. LASTFIRE's testing of foams are conducted at a very large scale, not simply lab testing or small-scale demonstrations. Working to the 2025 deadline enables time for further development of fluorine free foam and this large-scale test work to continue. This will maximise the possibility for a direct switch to fluorine free foam for more fire scenarios without impacting safety.

LASTFIRE holds and has published information on existing PFOA systems and substances in use in the downstream oil sector and which replacement substances would be the best alternative. However, research has not yet concluded and dispersal systems optimisation has been identified for further focus to ensure refinery operators get the best results.

UKPIA would be happy to facilitate a meeting between the Competent Authority and LASTFIRE to discuss the ongoing large-scale testing of alternative firefighting foams.

### **Further information**

For additional background Concawe published a report jointly with NICOLE in 2016 entitled "Environmental fate and effects of poly- and perfluoroalkyl substances (PFAS)". The "Network for Industrially Contaminated Land in Europe" (NICOLE) is a leading forum on contaminated land management in Europe, promoting co-

operation between industry, academia and service providers on the development and application of sustainable technologies.

The report was prepared by Arcadis under supervision of the Concawe Special Taskforce on Soil and Groundwater and reviews the published literature at that time on the environmental fate and effects of Poly- and Perfluorinated alkyl substances (PFAS), of which perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) are the most well-known. It describes the main types of PFAS, their use, fate and transport properties, toxicity data, regulation, and gives an overview of chemical analysis and remedial techniques and was produced to help Concawe and NICOLE members understand and manage environmental and human health risks associated with current and legacy formulations of PFAS- based class B fire-fighting foams. These include Aqueous Film Forming Foam (AFFF), Fluoroprotein (FP) and Film Forming Fluoroprotein Foam (FFFP). A copy of the report can be found at the following web address:

- [https://www.concawe.eu/wp-content/uploads/2016/06/Rpt\\_16-8.pdf](https://www.concawe.eu/wp-content/uploads/2016/06/Rpt_16-8.pdf)

Thank you for the opportunity to respond to the review of statutory exemptions for permitted uses of persistent organic pollutants.

Yours sincerely,

Simon Wood  
**Environment, Health and Safety Specialist**