fomtec
Fire Fighting Foams & Equipment

Fomtec Technical Advice
FTA No. 125

Legislation relating to Perfluoroctanoic Acid (PFOA) and the impact to clients using firefighting foam

Introduction

Although all the major firefighting foam manufacturers (including Fomtec) voluntarily stopped manufacturing PFOA (C8) containing firefighting foam concentrates by 2016 regulatory bodies around the world have seen fit to enact legislation restricting and ultimately banning the production and use of these firefighting foam concentrates.

EU Legislation

There are three pertinent European Commission documents:

EU 2017/1000 is the initial legal document that restricts the production, use and emission of PFOA. Under this legislation document maximum levels of PFOA are set at 25 ppb, and it's salts' and/or PFOA relating compounds are set at 1000 ppb.

Commission Delegated Regulation **2020/784** confirmed that as PFOA was now defined as a Persistent Organic Pollutant (POP) that specific rules will apply for PFOA (C8) containing foam concentrates as follows:

1. These foams shall not be used for training
2. These foams shall not be used for testing unless all releases can be contained
3. These foams may be used for firefighting with the following time limits:

    a. Up until 31st December 2022 when containment is not possible, and
    b. Up until 3rd July 2025 when containment is possible

The third document **EU 2019/1021** stipulates an additional requirement under it's Article 5 – "Stockpiles" that any facility holding 50 kg or more of PFOA to declare this to the appropriate authorities (Usually the Environmental Agency).

Global Position on PFOA

In May 2019 the 9th Meeting of the Stockholm Convention amended Annex A to add PFOA to its' list of POP's (SC-9/12 refers) and includes a new Part X in Annex A which includes specific reference to PFOA (C8) containing firefighting concentrates which mirrors the Commission Delegated Regulation 2020/784.

Accordingly countries that are not part of the EU but are signatories to the Stockholm Convention should follow SC-9/12 which restricts the use, and ultimately places a time limit on the use of PFOA (C8) containing foam concentrates.

Dafo Fomtec AB
P.O. Box 683, SE-135 26 Tyresö, Sweden
Telephone +46 8 506 405 66
Fax +46 8 506 405 29
E-mail info@fomtec.com

Firefighting Foam Concentrates that are affected by this legislation

Fomtec completed the transition away from PFOA (C8) containing foam concentrates by Q4 of 2015 so if your Fomtec foam concentrate was produced from 2016 onwards it will have been manufactured with chemicals that meet the requirements of the 2017/1000 regulation.

Prior to this transition in fluorinated chemistry the PFOA (C8) containing foam concentrates would have been:

- AFFF
- ARC (AR-AFFF)
- FP
- FFFP
- FFFP-ARC

Protein, Class A, Medium/High Expansion Foams, Training foam generally were not produced with the same chemistry as the foam concentrates listed above but pre-2016 versions of these foams may still be tested to ensure that if any contamination occurred through blending, transfer or packaging that the levels of PFOA are below the regulated levels as per EU 2017/1000.

Fluorinated firefighting foam concentrates produced by Fomtec from 2016 onwards

Since 2016 all of the fluorinated firefighting foam concentrates produced by Fomtec have been formulated with shorter-chain fluorinated chemicals, sometimes known as "C6". These foam concentrates may contain trace impurity levels of PFOA (C8) but they will be below the levels regulated by EU 2017/1000.

If these foam concentrates are in their original packaging or stored in tanks that had previously not held older foam concentrates then this foam concentrate will not be affected by the PFOA (C8) legislation. If the foam concentrate supplied post 2015 has been mixed with older foam concentrate or perhaps placed into a tank that has previously held older foam concentrates then the likelihood is that the foam concentrate is now "contaminated". The responsibility for meeting legislation lies with the end user so sampling and testing to prove compliance with the legislation should be carried out.

If you still have the original packaging then there will be a "batch" number and this will allow Fomtec to trace the product and production date if you have questions on a product.

Note: Although fluorinated foams produced post 2015 comply with the PFOA (C8) legislation, within the EU ,legislation is expected in 2022 that will restrict the production and use of another PFAS chemical – PFHxA, and specific legislation restricting the production and use of ALL PFAS containing firefighting foam concentrate. These two pieces of legislation are not currently published.

Confirming that the firefighting foam concentrate complies with current legislation

The end user should prove that the foam concentrate in their tanks / stores comply with the legislation. If the end user knows that the foam was supplied prior to 2016, or if the foam was supplied post 2105 and there is a possibility of contamination then samples should be taken from the tank / stores and sent to an appropriately qualified and approved laboratory for analysis.

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The analysis techniques that meet the requirements of showing that the foam concentrate sample contains less than 25 ppb of PFOA and it's salts and 1,000 ppb for one or a combination of PFOA-related substances vary between locations and the end user will need to seek guidance from their local authority (usually the Environmental Agency) of local accredited laboratories and the acceptable testing methodology that the local authority accepts.

Examples of methodology that we are currently aware of include:

- U.S.A. EPA 533 and EPA 537
- EU & UK DIN 38407 / 42
- Australia EP 231 and EP 23X (TOP)

Fomtec does not have the necessary laboratory equipment to carry out these tests in house. Fomtec is aware that the following companies do offer this analysis and have the necessary equipment and qualifications to carry out the testing:

- Eurofins www.eurofins.com
- ALS www.alsglobal.com

Assistance with decontamination of storage tanks and foam systems

The legislation sets the limits for PFOA in the foam concentrate or any solution (foam solution or waste water) dispersed to the environment from the foam system. Removal of the PFOA containing foam concentrate from the tank alone is unlikely to solve the contamination issue as residual levels of PFOA may be found in any remaining foam concentrate that is left in the tank or on any surfaces that have been in contact with the foam concentrate. Similarly if the system has been run (in the case of mobile firefighting equipment this could include hoses, discharge nozzles etc.) and not been flushed thoroughly then contamination downstream of the proportioning device may also exist. Collection and testing of water from the discharge devices may be required to again prove that PFOA levels do not exceed the regulated limit.

A number of different cleaning / decontamination concepts are available that involve cleaning with water alone, cleaning with water that is mixed with additives, and cleaning with water and using activated carbon to absorb the PFAS chemicals. In all cases the waste products from the cleaning would require disposal in accordance with the local authorities regulations.

Please note that current science indicates that the PFAS chemicals can only be destroyed through incineration at temperatures exceeding 1,100 °C.

Fomtec is aware of a number of organisations that are offering cleaning / decontamination services for mobile equipment and foam systems and will share contact details upon request.

Appendices

The following links relate to the legislation referenced in this FTA

EU 2017/1000
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1000&from=EN

Commission Delegated Regulation 2020/784
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0784&from=EN

EU 2019/1021
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02019R1021-20210315&from=EN

SC-9/12
https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjkmZrb3tz2AhVRSsAKHeDFDjsQFnoECAoQAQ&url=http%3A%2F%2Fchm.pops.int%2FConvention%2FConferenceoftheParties COP%2FCOPDecisions%2Ftabid%2F208%2FDefault.aspx&usg=AOvVaw1HI4j3EbbiS7gUsXwridhm

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