

Industrial Fire Journal - Fire & Rescue - Hemming Group Ltd: Six-year PFOA reprieve for firefighters' protective clothing



Six-year PFOA reprieve for firefighters' protective clothing

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Management of PPE that contains restricted chemicals and legal procurement obligations are just some of the issues fire services will need to consider when new PFOA restrictions come into force in Europe.

Following a Europe-wide consultation the Committee for Socio-economic Analysis (SEAC) of the European Chemicals Agency published last month its draft opinion on proposals by Germany and Norway to restrict Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances in Europe.

These substances are found in AFFF surfactants in firefighting foams, wetting agents as well as textile finishes on firefighters' protective clothing.

In October 2014 Germany and Norway proposed that PFOA and PFOA-containing substances should not be manufactured, used or placed on the market in greater concentrations than 2ppb (parts per billion).

PFOA-related substances are defined as fluorinated substances that may degrade to PFOA under environmentally relevant conditions, which is why the hazard profile for PFOA applies to them as well.

PFOA is persistent, bioaccumulative, and toxic (PBT) and may cause severe and irreversible adverse effects on the environment and human health. Based on the PBT and CMR (carcinogenic, mutagenic or toxic for reproduction) profile, PFOA and its salts have been identified as Substances of Very High Concern under REACH, the European Union regulation covering the registration, evaluation, authorisation and restriction of chemicals.

PFOA and a number of PFOA-related substances are found throughout the environment – also in remote areas including the Polar regions – since they can be transported over long distances via water and air. Moreover, PFOA is present in the blood of the general population. Human exposure takes place via the environment, i.e. consumption of drinking water and food, ingestion or inhalation of contaminated indoor dust (resulting from the use of consumer products).

In October this year DuPont lost the first in a series of personal injury lawsuits brought by individuals claiming to have

developed specific diseases after exposure to perfluorooctanoic acid (PFOA; C8). An Ohio court awarded Carla Bartlett \$1.6 million after a jury determined that the PFOA in her drinking water contributed to the kidney cancer she was diagnosed with in the late 1990s.

In 2006 the US Environmental Protection Agency put pressure on major fluorocarbon producers to join the 2010-15 PFOA Stewardship Program, aimed at eliminating PFOA and C-8 related chemicals globally by 2015.

Germany and Norway have since proposed restricting PFOA and its presence in other products to a maximum concentration of 2 parts per billion (ppb).

In its draft opinion SEAC agrees with the principle of restricting PFOA, but has set the restriction thresholds for products containing PFOA and PFOA-related substances at a more realistic level, namely 25ppb and 1,000ppb respectively. This, says SEAC, will create 'the most appropriate EU-wide measure to address the identified risks in terms of the proportionality of its socio-economic benefits to its socio-economic costs'.

However, SEAC is also proposing a six-year derogation for professional textiles used in PPE worn by firefighters, the military, policemen, medical responders and workers exposed to risks from oil and chemicals.

These textiles use C8-related chemicals (capable of producing PFOA in degradation) to provide water and oil repellency and resistance to penetration by harmful chemicals such as o-xylene, sulphuric acid, sodium hydroxide and hydrochloric acid.

During the consultation period for the proposed restrictions, some stakeholders stated that some specifications requiring very high water, oil or chemical repellency, alternatives to C8 compounds were not technically feasible. The main issue claimed was that coatings using PFOA-free C6 technology did not resist multiple high temperature washing, leading to a need for reapplication of protective coatings after each washing. This would entail less effectiveness and possibly a 10-fold higher emission of C6 chemicals compared to C8, resulting in substantial additional costs and an impact on the environment.

Short-chain (\leq C6) PFASs (perfluoroalkyl and polyfluoroalkyl substances) are alternatives that are available on the market and already used as substitutes for PFOA and PFOA-related substances in products such as firefighting foam.

According to SEAC's draft report, the net benefits of replacing emissions of C8 chemicals by much higher emissions of C6 chemicals at a substantial cost are doubtful. Even if C6 chemicals seem to have a better hazard profile, they still pose some major concerns. The goal is the replacement of C8 chemistry by less hazardous chemicals (fluorine-free alternatives were said to be available by one stakeholder), or reformulation of C6 chemicals to resist heavy-duty washing. The draft opinion also noted some evidence that C6 alternatives that can resist washing and outdoor exposure were becoming increasingly available.

In proposing the extended transitional period of 6 years after entry into force for this sector, SEAC says it is taking into account the critical human health / life protecting functions of the C8 chemicals in PPE as well as considerations of cost and effectiveness of substitution by C6 chemicals.

Fire services are nevertheless faced with a number of issues:

- Disposal of firefighting clothing that contains restricted chemicals
- Maintenance of clothing containing restricted chemicals
- Legal and financial obligations regarding procurement and service contracts
- Managing the transition to new PPE
- Higher overall general costs for maintaining PPE.

The potential effects on the fire service of the proposed restrictions on PPE will be discussed at the PPE & Duty of Care Forum on 2 February 2016. Visit www.firerescueforum.com for more information.



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