

Fire Fighting Foam Coalition

By Tom Cortina

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In May 2001, AFFF and fluorosurfactant manufacturers met in Washington DC with representatives of the US Environmental Protection Agency (EPA), the US military and major foam users to discuss the fallout from 3M's decision to stop production in 2002 of PFOS-based AFFF due to environmental concerns.

It quickly became clear that users and agency staff did not fully understand the differences in chemistry between PFOS-based and telomer-based foam agents. It was also evident that speculation about the future regulation of AFFF was causing problems for the industry. As a result of this meeting, the Fire Fighting Foam Coalition Inc. (FFFC) was formed to ensure that accurate information about telomer-based foams is disseminated to appropriate audiences.

FFFC is a non-profit corporation that represents the AFFF industry's interests on all issues related to the environmental acceptability of firefighting foams. The Coalition provides a focal point for industry technical reviews, development of industry positions, and interactions with relevant organizations, such as environment agencies, militaries, approval agencies, and standards bodies. Members are AFFF manufacturers, fluorosurfactant manufacturers, and distributors.

Key messages

In order to clarify the differences between PFOS-based and telomer-based foams, FFFC has developed the following key messages:

- Fluorosurfactant-containing foams such as AFFF are the most effective agents currently available to fight flammable liquid fires in military, industrial, aviation, and municipal applications. They provide rapid extinguishment, burn-back resistance, and protection against vapour release.
- Telomer-based fluorosurfactant foams such as AFFF, FP, and FFFP are not banned from use. We are aware of no pending legislation to regulate telomer-based fluorosurfactant foams in Europe, Canada, Japan, or the United States.
- Telomer-based AFFF agents do not contain or breakdown into PFOS (perfluorooctane sulfonate), are not made with PFOA (perfluorooctanoic acid), and contain between 30 percent and 60 percent less fluorine than PFOS-based AFFF.
- The C6-based fluorosurfactants that have been the predominant fluorochemicals used in telomer-based AFFF for the last 25 years are low in toxicity and not considered to be bioaccumulative or biopersistent.
- New products based on C6 telomer chemistry are currently being developed and introduced around the world because they are considered to be safer for the environment than C8 and above. Fluorochemical manufacturers are voluntarily working to eliminate C8 and higher homologue chemicals from products and plant emissions by 2015 under the EPA PFOA Global Stewardship Program.

- Telomer-based AFFF agents that contain greater than 95 percent C6 fluorosurfactants and meet the world's most challenging foam standards have been on the market for decades, so manufacturers are confident that the new products will retain all of the same fire suppression capabilities as existing AFFF agents.

Key activities

One of the important roles performed by FFFC is to respond to inquiries from organisations around the world as they evaluate the impact of the PFOS phase-out on foam use in their countries. FFFC has a philosophy of open and honest communication as it relates to the products that our industry manufactures. We have provided extensive information on firefighting foams to environmental agencies and armed services in the United States, Europe, Canada, China, and Australia that includes the following:

- Amount of fluorosurfactant actives used in the manufacture of AFFF in the US.
- Chemical structure of the fluorosurfactants used in major fluorotelomer-based AFFF formulations.
- Mechanics of film formation.
- Groundwater monitoring data from US military fire training areas.
- US inventory of PFOS-based and telomer-based AFFF.
- Overview of the different types of foams, the market channel for their distribution, and the environmental fate once they are used.
- Aquatic toxicity of fire fighting foams.
- Toxicity, bioaccumulation, and biopersistence potential of AFFF-type fluorosurfactants and their likely breakdown products.

FFFC has also published an AFFF environmental fact sheet, eight newsletters, and numerous journal articles on foam-related issues that are available on the web at www.fffcc.org.

Moving forward

The PFOS issue had the potential to deprive firefighters of their best resource for preventing loss of life and destruction of property from flammable liquid fires – fluorosurfactant-based AFFF foams. Fortunately, telomer-based AFFF continues to be the agent of choice to protect against this threat, and manufacturers have developed enhanced foam formulations with reduced environmental impacts that can be used well into the future. One of the main reasons for this positive outcome is the work of FFFC and its member companies.

Tom Cortina is Executive Director of the Fire Fighting Foam Coalition www.fffcc.org



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- Have minimal environmental impact.
- Have a low toxicity and biopersistence profile.
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