Tyco Fire Protection Products
One Stanton Street
Marinette, WI 54143-2542 USA

+ 1 715 735-7411
www.ansul.com

June 23, 2016

New York State Rule Regulating PFOS and PFOA: Implications for Tyco Fire Protection/ANSUL Customers

New York State Department of Environmental Conservation Emergency Adoption and Proposed Rule: 6 NYCRR Part 597 Hazardous Substances Identification, Release Prohibition, and Release Reporting[1]

Introduction

On April 25, 2016, the New York State Department of Environmental Conservation (DEC) completed an emergency rulemaking and concurrently proposed a formal rulemaking to list four new chemicals that may be found in Aqueous Film Forming Foam (AFFF) in the DEC list of hazardous substances. DEC's emergency rule modifies the list of hazardous substances in Part 597 to include: perfluorooctanoic acid (PFOA-acid, Chemical Abstracts Service (CAS) No. 335-67-1), ammonium perfluorooctanoate (PFOA-salt, CAS No. 3825-26-1), perfluorooctane sulfonic acid (PFOS-acid, CAS No. 1763-23-1), and perfluorooctane sulfonate (PFOS-salt, CAS No. 2795-39-3). These substances have been and, in some cases, may still be, components in AFFF.

DEC regulates the handling and storage of listed hazardous substances and has the authority to remediate sites contaminated with them. There are three major impacts of the rulemaking on the storage and use of AFFF ***that contains 1% or more by volume of the newly listed PFOA or PFOS***:

- If you are storing AFFF, you may be subject to the registration and storage requirements of the Chemical Bulk Storage (CBS) regulations (6NYCRR Parts 596 – 599). These requirements include standards for the storage and handling of hazardous substances in tanks or other bulk containers (details below).

- The release of one pound or more of PFOA or PFOS to the environment is prohibited. Note that this one pound limit applies to the individual chemical constituents, and ***NOT*** to the AFFF mixture as a whole. Part 597 will allow the use and environmental release of AFFF containing PFOS or PFOA for fighting fires (not for training) for one year until April 25, 2017.
- Where there has been a release of one of these hazardous substances causing environmental contamination, cleanup may be required under one of the DEC's remedial programs (i.e., State Superfund or a Brownfields Program)

A company is subject to the storage and handling requirements of the CBS regulations if the AFFF on site meets the following conditions:

- The ***AFFF contains 1% or more by volume of one or more of the hazardous substances*** listed in Part 597; ***and***

- The AFFF is stored in
  - an above ground storage tank (stationary device) of 185 gallons or greater
  - any size underground tank, or
  - in a container (non-stationary device) that is used to store 1,000 kilograms (2200 pounds) or more for a period of 90 consecutive days or more.

What does this mean for Tyco Fire Protection/ANSUL Customers?
Tyco Fire Protection Products (TFPP) and ANSUL have never intentionally added PFOA or PFOS to any AFFF products, and only trace amounts of these substances have ever been detected in laboratory analyses of these products. The perfluorinated surfactants used by TFPP and ANSUL to make AFFF are manufactured using the telomerization process of polymerization which does not yield PFOS. Until more recently, TFPP and ANSUL used perfluorinated surfactants that contained a carbon

[1] **[New York State Department of Environmental Conservation, Fact Sheet Storage and Use of Fire Fighting Foams Under New Hazardous Substance Regulations, www.dec.ny.gov , May 4, 2016]**

chain length that was predominately longer than six carbons. It is known that when these longer chain fluorosurfactants (longer than C-6) break down under the right conditions in the presence of oxygen, PFOA may be formed. Sometimes these conditions, if not controlled, can exist during manufacture and result in trace levels of PFOA in AFFF products. Based on the telomerization process characteristics, we do not expect to find ***ANY*** PFOS in our AFFF products.

TFPP/ANSUL have historically performed focused testing to quantify the levels of PFOA and PFOS in certain AFFF products. This data suggests average concentrations for PFOA/PFOS of less than 1 ppm.

In order to supplement existing analytical data, as well as evaluate newly developed C-6 products, TFPP/ANSUL has begun testing of our newer AFFF products for PFOS and PFOA levels. As we gather these data we will make them available to our customers upon request,. Our most recent testing continues to suggest only trace levels (if detectable at all) of PFOA or PFOS in our products, well below 1 ppm.

For those customers who have had AFFF in storage for two years or more, or AFFF that has been comingled with other product either from the same supplier or different suppliers, we recommend that you have PFOS/PFOA analyses performed on your existing product to determine the potential impacts of the new NYDEC regulations. As your AFFF supplier, we can assist you in this process.

Regulatory Threshold Calculations

Below are some calculations to help illustrate the potential impact of the new NYDEC regulations if you have product on site that contains 1 ppm PFOA/PFOS.

A container of AFFF with 1 ppm PFOA/PFOS would have well less than 1% by volume of these listed hazardous substances, and would therefore ***not*** be subject to the storage and handling requirements of the new NYDEC regulations. (A concentration of approximately 10,000 ppm would be in the range of 1% by volume; actual densities of the individual foam constituents would be required to determine this precisely.)

A concentration of 1 ppm PFOA/PFOS would suggest that the 1 pound regulatory threshold for environmental releases of PFOA (hazardous chemical) would be contained in 1 million pounds of AFFF concentrate. Here's the calculation:

((1 lb. PFOA/PFOS) / million lb. AFFF) X 1 million lb. AFFF = 1 lb. PFOA/PFOS

These 1 million pounds of AFFF would equate to approximately 454 metric tons or 120,000 gallons of AFFF concentrate. Therefore, ***120,000 gallons of foam concentrate with 1 ppm PFOS/PFOA would need to be released into the environment before reaching the 1 pound reportable quantity limit. This would equate to approximately 4,000,000 gallons of foam solution at a nominal 3% proportioning rate.***

This calculation illustrates the volume of foam concentrate that would need to be released to the environment to reach the 1 pound regulatory threshold, based on 1 ppm PFOA in AFFF concentrate. This calculation is representative of that scenario only, and will not necessarily apply to individual situations with more or less PFOA/PFOS.

Again, if you have AFFF stored on site for more than 2 years, we recommend that it be sampled for PFOA/PFOS to determine the presence and concentration of these chemicals in your stored AFFF. As always, if you need assistance please contact your local sales representative.

Respectfully,

Gregg Ublacker
Director, Product Stewardship & Regulatory Affairs