

July 31, 2016

Queensland Department of Environmental and Heritage Protection's Operational Policy on the Environmental Management of Firefighting Foam¹: Tyco Fire Protection's Stewardship program for the Management of Firefighting Foam

Introduction

On July 7, 2016, the Queensland Department of Environmental & Heritage Protection published the Operational Policy on the Environmental Management of Firefighting Foam. The policy describes the requirements and expectations for the handling, transport, storage, use, release, waste treatment, disposal and environmental protection measures relevant to the use of firefighting foam. This policy specifically addresses the environmental stewardship considerations of these foams.

Key provisions of the Policy include:

- All firefighting foams pose a range of hazards to the environment when released during activities such as training, maintenance, testing, incident response, fires and waste disposal.
- Non-persistent and fully biodegradable foams can be released to the environment with a number of restrictions.
- Persistent foams must not be released to the environment, must be fully contained on site, and disposed of as regulated wastes.
- Foams containing >10 mg/kg (10 ppm) PFOS and/or >50 mg/kg (50 ppm) PFOA and PFOA precursors must be withdrawn from service as soon as possible and no longer used in any situation where they might be released to the environment, including legacy stocks and be managed and disposed of as regulated waste.
- Foams containing short-chain fluorotelomers can be used if they are found to be the only viable option, after firefighting effectiveness, short and long-term health, safety and environmental risks and property protection characteristics have all been appropriately considered.
- Foams containing short-chain fluorotelomers must be C6 purity-compliant – must not have more than 50 mg/kg (50 ppm) of total long-chain impurities (nor more than 10 mg/kg (10 ppm) PFOS).
- C6 purity-compliant foams cannot be released directly to the environment, must be fully contained on site, and must be disposed of as a regulated waste.
- Foams used for training, testing or maintenance purposes must not contain any fluorinated organic compounds with the exception that if there is a defined requirement for testing with a fluorinated foam, the foam must be fully C6 purity-compliant and contained and disposed of as a regulated waste
- Compliance must be achieved as soon as is reasonably practicable, but in no case later than 3 years from approval date of the Policy
- Testing requirements are specified that include persistence and bioaccumulation, acute toxicity, chronic toxicity, BOD and biodegradability
- Specific provisions detail the requirements for disposal of contaminated water and soil

¹ Department of Environment & Heritage Protection, www.EHP.qld.gov.au ABN 46 640 294 485

What does this mean for Tyco Fire Protection Customers?

Tyco Fire Protection Products (TFPP) 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 to make AFFF are manufactured using the telomerization process of polymerization which does not yield PFOS. Based on the telomerization process characteristics, we do not expect to find **ANY** PFOS in our AFFF products, and testing to date has confirmed this. Until more recently, TFPP used perfluorinated surfactants that contained a carbon chain length that was predominately longer than six carbons. It is known that these longer chain fluorosurfactants (longer than C6) can break down under the right conditions in the presence of oxygen and PFOA may be formed. Sometimes these conditions, if not controlled, can exist during manufacture and result in trace levels of PFOA in AFFF products.

TFPP has historically performed focused testing to quantify the levels of PFOA and PFOS in certain existing AFFF products. These data suggest average concentrations for PFOA/PFOS of less than 1 ppm and PFOA precursors less than 50 ppm, which would qualify such foams as **C6 Purity Compliant** under the Queensland Policy. The Queensland Policy states that **C6 Purity Compliant** foams may continue to be used if they are “found to be the only viable option, after firefighting effectiveness, short and long-term health, safety and environmental risks and property protection characteristics have all been appropriately considered, however, the following requirements must be met:

- The foam must be C6 purity compliant foam (see Definitions).
- No releases directly to the environment (e.g. to unsealed ground, soakage pits, waterways or uncontrolled drains).
- All releases must be fully contained on site.
- Containment measures such as bunds and ponds must be controlled, impervious and must not allow firewater, wastewater, runoff and other wastes to be released to the environment (e.g. to soils, groundwater, waterways storm water, etc.).
- All firewater, wastewater, runoff and other wastes must be disposed of as regulated waste to a facility authorized to accept such wastes.”

Tyco Fire Protection Firefighting Foam - Product Stewardship Efforts

In order to supplement existing analytical data, as well as evaluate newly developed C6 products, TFPP 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 in our products, well below 1 ppm. In addition to the testing of our finished products for PFOA and PFOS (PFOS sampling is also done for validation purposes), we require the sampling and analysis of our starting raw materials used to produce the fluorosurfactants and fluoropolymers incorporated into our firefighting foams. We also test these final fluorinated raw materials for PFOA/PFOS before they are allowed for use in our final foam products. If we purchase fluorinated raw materials, we have strict guidelines for PFOA/PFOS limits for these materials and these have been proven to meet and exceed our guidelines.

In our efforts to bring our fluorinated raw materials to market, TFPP has generated the necessary data to help our customers meet the objectives of the Queensland Department of Environmental and Heritage Protection's Operational Policy for these unique substances. These data are being provided to the Australian Government's Department of Health for evaluation by the National Industrial Chemicals Notification and Assessment Scheme. We are also generating the required data for the C6 finished foam concentrates which are also being provided to the Department of Health in support of our products for use in Australia.

The data we are generating on the fluorinated raw materials and finished foam products will allow TFPP and our customers to manage the potential environmental impacts associated with firefighting foam. Based on current and historic test results, Tyco Fire Protection Firefighting C6 foam products meet or exceed the objectives of the Queensland Department of Environmental and Heritage Protection's Operational Policy and qualifies as **C6 Purity Compliant** foams.

As always, if you need assistance please contact your local sales representative.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Gregg Ublacker', with a long horizontal flourish extending to the right.

Gregg Ublacker
Director, Product Stewardship & Regulatory Affairs