

Technical Bulletin

NFTB185

Chemical Compatibility Between Legacy and C6 Firefighting Foam Concentrates

In accordance with the USEPA Stewardship Program 2010/2015, National Foam has reformulated all foam concentrates containing fluorosurfactants and fluoropolymers. These concentrates include Aqueous Film Forming Foam (AFFF), Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF) and Fluoroprotein (FP) foam concentrates. Historical or standard versions of these types of foam concentrates may have contained some percentage of fluorinated additives of C8 or higher chain lengths.

Mixing foam concentrates in long term bulk storage is never desirable. First, it is important to recognize that most foam standards, with the exception of MIL-PRF-24385, specifically prohibit mixing different manufacturer's foam concentrates in long-term storage. NFPA clearly states "do not mix different foams concentrates". Mixing foam concentrates may also void the manufacturers product warranty.

Addition of new concentrate (C6) into a tank with older concentrate (C8), producing a mixture of concentrates, should be considered as the oldest concentrate in the tank (C8) and will not be in accordance with EPA 2015 PFOA Stewardship program.

The following should be noted:

- Mixing of different types of foam concentrates (for example, AFFF with an AR-AFFF or 1% with a 3% concentrate) is never recommended.
- Mixing of different brands of the same type of formulation (with the exception of MIL-PRF-24385 approved foam concentrates), is not recommended due to possible chemical and physical differences which could adversely affect the stability and performance of a foam concentrate.
- National Foam Assurance C6 foam concentrates are chemically compatible with their legacy C8-based foam concentrate counterparts.
- National Foam Assurance C6 foam and legacy foam concentrates may have differences in some listings details. While physical properties are quite similar; end users should evaluate whether hardware adjustments are necessary when switching legacy foam concentrates over to C6 foam concentrates.
- Many local and state legislatures have enacted regulation of use, or disposal of C8-based foam concentrates. Addition of a C6 product to existing C8 would then require that the entire tank is treated as C8 foam concentrate for regulation/disposal purposes. Given the ever-changing regulatory climate, it may be more beneficial to do a complete change of the foam concentrate and totally deplete the C8 stock prior to putting C6 concentrate into use.
- Several States have recently enacted new legislation that restrict or eliminate the use of C6 foam concentrates.
- All foam concentrates should be inspected annually in accordance with NFPA 11 (EN 13565-2) or other relevant standard.