

DATA SHEET #NFC960

Sampling and Testing Procedures for Foam Concentrates

Kidde Fire Fighting's National Foam Technical Service Laboratory has offered a premier foam analysis service for many decades.

Why Take Foam Samples

Under normal circumstances and under satisfactory storage conditions, foam concentrates manufactured by reputable companies should maintain their quality for years. However, no matter how good the foam concentrate, deterioration can take place in a number of ways and it is therefore recommended to monitor the quality. Summarized below are some of the causes of degradation of the foam concentrate:

- dilution or evaporation.
- topping off with inferior or incompatible products.
- excessively high or low storage temperatures.
- unsuitable storage conditions.

Regular Sampling and Evaluation Can Detect:

1. Deterioration of the foam concentrate.
2. Accumulation of sediment in low areas which could possibly cause proportioning problems when the system is activated.

NFPA-11 recommends that all foam systems shall be thoroughly inspected and checked for proper operation annually. The inspection shall include performance evaluation of the foam concentrate or premix solution quality.

Laboratory Analysis

An unbiased analysis of the foam samples is provided for the user's consideration. The recommended method

for evaluating the condition of foam concentrate is to complete the tests listed below. These are part of the Lab Analysis:

1. Specific Gravity
2. pH Value
3. Sediment
4. Expansion Ratio
5. Quarter Drainage

Fire Tests (Additional)

The fire tests are based on UL-162 standard tests and are performed using specially designed fire modeling laboratory test equipment to provide information on a foam concentrate's ability to perform its designated function.

Procedures for Taking Samples

Samples taken from the installation should be representative of the foam concentrates stored so that an accurate evaluation can be made.

1. If possible, circulate the system back to the storage tank for the appropriate time to ensure a uniform sample.

If circulation is not possible for any reason, then take samples from the following:

- a) Top of the tank
- b) Middle of the tank
- c) Bottom of the tank

If it is not possible to take three samples, due to the construction of the vessel or other reason, then take one sample from the top of the tank and a second sample from the bottom.

NOTE: SUBMIT ONE COMPOSITE SAMPLE ONLY, made by mixing together the samples taken from the tank.

If it is only possible to take one sample from a storage vessel which has not been circulated, it should be understood that this may not be truly representative of the complete contents of the storage tank.

Note: When using drain-off points, ensure that sufficient fluid is allowed to flush through the pipework to clear any accumulation of sludge, and provide a representative sample.

2. The sample must be at least 500 ml (approximately 1 pint) in volume and shipped in a clean, tightly sealed container made of polyethylene.
3. Sample containers must be packaged to avoid damage during shipment. The container label (do not use gummed labels) or container must be marked with a waterproof pen showing the following information:
 - Name of Company.
 - Type of Concentrate; AFFF 3%, etc. (samples which are not identified with the type of foam and % will not be tested).
 - Source of Sample (B5 Foam Room - Tank #1).
4. Complete all information on the Request for Analysis Form. Indicate the type of foam and lot number, if known.
5. Note any special conditions or problems.
6. Be specific in storage container identification. For example: 1500 gallon tank located in B5 Foam Room - Tank #1.

