

# TRAINING FOAM CONCENTRATE

## Data/Specifications



### FEATURES

- Designed to be proportioned at either 3% or 6%
- Economical fire training alternative
- For use during TRAINING to SIMULATE AFFF
- Provides expanded foam blanket with air aspirating devices
- Can be used to calibrate proportioning equipment
- Biodegradable; this product is considered to be readily biodegradable. It does not contain any fluorochemicals or polymers that are used in firefighting foam agents.
- Suitable for use with fresh or salt water
- Shelf life of 10-15 years
- Temperature range of 35 – 120 °F (1.6 – 48.8 °C)
- ▶ ■ Supplied ready to use in 5 gallon pail, 55 gallon drums or 265 gallon totes

### DESCRIPTION

ANSUL® Training Foam has been carefully formulated to allow firefighters the ability to conduct training with their own foam proportioning and generating equipment, while minimizing the effects of such training on the environment. It has foam expansion and drainage characteristics very similar to conventional 3% or 6% AFFF products. This is in contrast to other training foams on the market that simulate the expansion but have drain times far quicker than real firefighting foam. Using ANSUL Training Foam allows the user to determine both how much foam will be generated and how long the foam blanket will likely remain.

The product has been formulated with surfactants and other chemicals commonly found in household products such as shampoo and dish washing detergents. It is safe to handle, is readily biodegradable and has low orders of aquatic toxicity. ANSUL Training Foam contains no fluorochemicals or fluorosurfactants. None of the components are reportable under current federal regulations. Please check with local and state regulations regarding use of this product and discharge to the environment.

#### Typical Physiochemical Properties at 77 °F (25 °C) unless otherwise noted

▶ Appearance	Light Yellow to Amber Liquid
▶ Density	1.015 g/ml ± 0.015
pH	7.0 – 8.5
Viscosity	1.40 cs
Total Dissolved Solids (TDS)	6 – 9% by weight
Refractive Index	1.3433 ± 0.0020
Surface Tension @ 6%	27 dynes/cm
Surface Tension @ 3%	28 dynes/cm

### APPLICATION

ANSUL Training Foam is not intended for live fire training or for actual firefighting operations. See your ANSUL professional if you require live fire training. It may be used with all conventional proportioning and discharge devices as well as specialized products such as Compressed Air Foam generating equipment or systems (CAFS). As stated earlier, the foam characteristics, in terms of expansion ratio and foam drainage rates, will be very similar to conventional 3% or 6% AFFF products. This allows users to conduct operational training with regard to equipment set up, application techniques, and foam containment. It also allows users to determine the foam quality and range of different types of discharge devices at different operating pressures.

**Compatibility** – ANSUL Training Foam SHOULD NOT be mixed, stored, or used with any other type of foam concentrate. Proportioning and application equipment should be flushed clean after use and before using different foam concentrate types.

**Storage/Shelf Life** – ANSUL Training Foam Concentrate should be stored and used within a temperature range of 35 °F (2 °C) to 120 °F (49 °C). Storage in the original polyethylene shipping containers or other containers approved by ANSUL that minimize evaporation should result in a shelf life of 10 or more years. Containers should be kept tightly closed until use to both prevent evaporation and to minimize any contamination that might promote natural biodegradation of the product (ANSUL Training Foam is readily biodegradable). If the product is frozen during storage or transportation, thawing will render the product completely useable. Mixing after freeze/thaw cycling is recommended. For more information on shelf life and materials of construction when using or storing training foam concentrate, ask your ANSUL supplier for Technical Bulletins Number 54 and 59.

**Safe Handling** – When handling the concentrate, ANSUL recommends the use of chemical goggles or splash proof safety glasses to prevent eye irritation. One should avoid direct contact of the concentrate with exposed skin to prevent possible mild irritation or drying of the skin. Use of rubber or plastic gloves and clean protective clothing is recommended. If exposed to the concentrate, washing and flushing with water should provide immediate relief. Exposure to the end use working solutions (either 3% or 6%) is not expected to cause any discomfort.

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## ENVIRONMENTAL INFORMATION

**Aquatic Toxicity** – ANSUL Training Foam has been formulated to minimize the impact of AFFF discharges to an aquatic ecosystem. The levels of toxicity to both fish and lower organisms on the aquatic food chain are very low. Evaluations were conducted on the concentrate on both fingerling Rainbow Trout (a very sensitive fish species) and *Daphnia magna* (a water flea low on the aquatic food chain). Results of these tests are given as LC50 values (lethal concentration to 50% of the test population over a given time frame). It is common practice to conduct fish toxicity tests over a 96 hour exposure period and to conduct *Daphnia* tests over a 48 hour exposure period. The results of the testing are given below:

96 Hour LC<sub>50</sub> Value for Fingerling Rainbow Trout 1.78 g/L (1,780 ppm)

48 Hour LC<sub>50</sub> Value for *Daphnia magna* 1.9 g/L (1,900 ppm)

The above data are for the concentrate. Since it is rare for the concentrate to be released directly to the environment, we can estimate the aquatic toxicity of the three percent or six percent working solution by using a dilution factor of 33 for 3% and 16.7 for 6%.

### 3% WORKING SOLUTION

96 Hour LC<sub>50</sub> Value for Fingerling Rainbow Trout 58.7 g/L (58,700 ppm)

48 Hour LC<sub>50</sub> Value for *Daphnia magna* 62.7 g/L (62,700 ppm)

### 6% WORKING SOLUTION

96 Hour LC<sub>50</sub> Value for Fingerling Rainbow Trout 29.7 g/L (29,700 ppm)

48 Hour LC<sub>50</sub> Value for *Daphnia magna* 31.7 g/L (31,700 ppm)

The end result is that the working solutions of ANSUL Training Foam can be considered practically non-toxic in aquatic ecosystems.

**Biodegradability** – Biodegradability of a chemical is a measure of how readily that chemical is broken down in the environment (typically by bacteria and fungi) into carbon dioxide and water or other components that are "generally regarded as safe" (GRAS). In determining the biodegradability potential of a chemical or mixture of chemicals, industries often times look at and compare two related analytical tests.

The first test, Chemical Oxygen Demand (COD), is a measure of how much oxygen would be required to convert the chemicals to their most oxidized state. The second test, Biochemical Oxygen Demand (BOD), is a measure of how much oxygen will be used up by bacteria and other microorganisms over a given time period (usually 5 to 30 days). The bacteria and other microorganisms use the chemicals as a food source, which also consumes dissolved oxygen in the water as part of their metabolic process.

The ratio of BOD to COD determines the theoretical biodegradability of a chemical or chemical mixture. If the BOD/COD ratio is greater than 0.50 (50%), the chemical or chemical mixture is considered to be readily biodegradable. ANSUL Training Foam has BOD/COD ratios well above the 50% value. BOD and COD values for the concentrate and 3% and 6% working solutions are listed below. The subscript after the BOD represents the time frame in number of days over which the test was conducted. Longer times give the bacteria and other microorganisms more time to breakdown the chemicals and result in higher uses of the dissolved oxygen.

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## ANSUL TRAINING FOAM CONCENTRATE

Test	Results	Ratio (BOD/COD)
COD	146,400 ppm	
BOD <sub>5</sub>	64,971 ppm	0.444
BOD <sub>10</sub>	108,039 ppm	0.738
BOD <sub>20</sub>	155,416 ppm	1.062

### 6% WORKING SOLUTION

Test	Results	Ratio (BOD/COD)
COD	8,300 ppm	
BOD <sub>5</sub>	4,611 ppm	0.555
BOD <sub>10</sub>	5,623 ppm	0.677
BOD <sub>20</sub>	11,756 ppm	1.416

### 3% WORKING SOLUTION

Test	Results	Ratio (BOD/COD)
COD	3,900 ppm	
BOD <sub>5</sub>	2,507 ppm	0.643
BOD <sub>10</sub>	2,632 ppm	0.675
BOD <sub>20</sub>	3,331 ppm	0.854

**Nutrient Loading** – ANSUL Training Foam contains no nitrogen or phosphorous compounds. As such, it will not contribute to nutrient loading in either an aquatic or terrestrial ecosystem.

**Disposal** – ANSUL Training Foam contains no ingredients that are reportable under federal regulations. Care should be taken to prevent discharges of foam solutions or the concentrate into waterways whenever possible. After checking with the proper authorities at the treatment plant, it is often permissible to discharge to a waste treatment works. It may be necessary to meter the discharge at a rate that is acceptable to the plant operators in order to prevent excessive foaming that could upset the normal operation of the plant.

## ORDERING INFORMATION

ANSUL Training Foam Concentrate is available in pails, drums, totes or bulk shipment.

Part No. 428704	5 gallon pail
Part No. 428706	55 gallon drum
▶ Part No. 428707	265 gallon tote container
▶ Part No. 428703	Bulk (contact ANSUL about domestic truckload delivery)

### Shipping Weight:

5 gal (19 L) pail – 45 lb (20.4 kg)
55 gal (208 L) drum – 495 lb (225 kg)
▶ 265 gal (1000 L) tote – 2453 lb (1118 kg)

### Cube:

5 gal (19 L) pail – 1.25 ft <sup>3</sup> (0.0354 m <sup>3</sup> )
55 gal (208 L) drum – 11.83 ft <sup>3</sup> (0.3350 m <sup>3</sup> )
▶ 265 gal (1000 L) tote – 50.05 ft <sup>3</sup> (1.42 m <sup>3</sup> )



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