



Density, pH, Viscosity ¹



All three of these characteristics can be used as part of a quality assurance program to find products that may be different from those originally evaluated or that have been incorrectly mixed with water.

The density of a fluid is the weight of the fluid in a specified volume. It can be used as an indicator of the salt content of a retardant. It is also used to calculate safe loading of an aircraft used to apply wildland fire chemicals to the fire.

The pH is used primarily used as part of the assessment of product stability over time. Changes in pH may indicate changes in skin or eye irritation potential or changes in the corrosive character of the product.

The viscosity, or flowability, of the mixed product is of interest for long-term retardants and water enhancers where changes in the viscosity can affect the accuracy of delivery of the product to the fire and the ability of the product to cling to the target fuels.

Product Performance Data on next page

1

Standard Test Procedures 4.3, 4.4, and 4.5 give instructions for the density, pH, and viscosity tests, respectively. STP 4.3 is available at http://www.fs.fed.us/rm/fire/wfcs/tests/stp04_3.htm. STP 4.4 and 4.5 are available by substituting the appropriate test number into the web address



Physical Properties Class A Foam Concentrates



Product	Density ¹	Viscosity ²	pH ³
	(g/ml ³)	(centipoise)	
Tyco Silv-Ex	1.010	25	7.9
FireFoam 103B	1.028	48	8.9
Phos-Chek WD 881	1.027	14	8.4
FireFoam 104	1.010	32	6.6
Angus ForExpan S	1.042	30	7.3
Pyrocap B-136	1.037	145	8.1
Phos-Chek WD 881-C	1.021	33	7.8
National Foam KnockDown	1.051	23	8.6
Summit FlameOut	1.012	20	7.2
Angus Hi-Combat A	1.050	18	9.3
Buckeye Platinum Class A	1.017	18	7.6
Chemguard First Class	1.009	15	8.1
Solberg Fire-Brake 3150A	1.013	6	7.5
First Response	1.011	8	7.6
Silv-Ex Plus	1.010	100	8.8
1% Bushmaster	1.025	20	6.8
Phos-Chek WD881A	1.024	45	7.8
Fomtec Enviro Class A	1.031	25	8.2
Bio-Ex Ecopol-F	1.030	20	8.0

Notes:

1	Density measurements were made in accordance with Standard Test Procedure 4.3.
2	Viscosity measurements were made in accordance with Standard Test Procedure 4.5.
3	pH measurements were made in accordance with Standard Test procedure 4.4.