



## Surface Tension <sup>1</sup>



The surface tension of a liquid is one indicator of the ability of the liquid to penetrate wildland fuels, such as charred wood and scorched duff, as well as weathered building materials.

The concentrate is mixed with water to prepare a liquid of the appropriate concentration, conditioned to the proper temperature, and then tested.

Water has a surface tension of about 72 dynes/centimeter. The surface tension of a foam solution should be about half of that or less. In general lower values indicate better wetting ability than higher values; although the results of the wetting test using a Drave's skein may be more sensitive to the effects of small changes in solution concentration.

Product Performance Data on next page

1

Standard Test Procedure 8.1 gives instructions for the surface tension test. Testing is performed in accordance with ASTM D1331.



## Surface Tension Foam Solutions



Product	Surface Tension <sup>1,2</sup> at Concentrations Shown			
	0.1%	0.3%	0.6%	1.0%
dynes/centimeter				
Tyco Silv-Ex <sup>3</sup>	24.6	21.9	22.4	21.9
FireFoam 103B <sup>3</sup>	24.4	24.6	24.6	26.6
Phos-Chek WD 881 <sup>4</sup>	33.8	29.6	27.9	27.3
FireFoam 104 <sup>3</sup>	26.0	25.5	24.4	25.5
Angus ForExpan S <sup>3</sup>	25.5	22.9	24.6	23.2
Pyrocap B-136 <sup>3</sup>	24.5	24.5	24.5	24.5
Phos-Chek WD 881-C <sup>4</sup>	37.0	34.8	34.2	33.8
National Foam KnockDown <sup>4</sup>	30.1	28.8	28.6	30.2
Summit FlameOut <sup>4</sup>	35.7	29.3	26.7	27.8
Angus Hi-Combat A <sup>4</sup>	31.1	30.1	31.1	31.2
Buckeye Platinum Class A <sup>4</sup>	37.1	32.6	32.7	33.3
Chemguard First Class <sup>4</sup>	37.3	30.0	31.0	31.3
Solberg Fire-Brake 3150A <sup>4</sup>	31.7	31.8	31.3	30.8
First Response <sup>4</sup>	41.4	34.6	33.2	29.3
Silv-Ex Plus <sup>4</sup>	44.2	36.4	33.0	29.2
1% Bushmaster <sup>4</sup>	33.6	31.8	31.9	33.4
Phos-Chek WD881A <sup>4</sup>	31.6	25.9	25.1	25.2
Fomtec Enviro Class A <sup>4</sup>	43.2	37.6	37.2	37.6
Bio-Ex Ecopol-F <sup>4</sup>	44.6	34.1	35.2	34.0

**Notes:**

1	Surface tension values are corrected for the diameter of the wire and the diameter of the ring used in the determinations.
2	Surface tensions are measured at 70 °F ± 5 °F.
3	Dilutions were prepared using tap water.
4	Dilutions were prepared using deionized water.