



BULLETIN #1022-1

TECHNICAL BULLETIN

Foam Compatibility — ARCTIC 3% AFFF & ANSULITE AFC-3A AFFF


Introduction

This study was undertaken to determine if SOLBERG® ARCTIC™ 3% AFFF Foam Concentrate is compatible when mixed with TYCO/ANSUL ANSULITE AFC-3A AFFF. Since neither Underwriters Laboratories, Inc. (UL) nor Factory Mutual (FM) possess any type of compatibility testing protocol, the compatibility test protocol for the U.S. Military specification for AFFF, Mil-F-24385F, was followed. In this specification, admixtures of the two concentrates are prepared at various ratios. These mixtures are tested for foam quality immediately after being prepared and again after being subjected to storage at 50 °C in tightly closed containers for a period of 10 days. In addition to the foam quality testing, the samples are visually inspected for any signs of incompatibility such as precipitation, haziness, gelling, layering, etc.

Sample Preparation

Production lot number J1600102 of the ARCTIC foam concentrate and production lot number 2601 of the ANSULITE foam concentrate were used in the study. Mixtures of the Solberg and Tyco/Ansul foam concentrates were prepared as follows:

SOLBERG % BY WEIGHT	TYCO/ANSUL % BY WEIGHT
0	100
25	75
50	50
75	25
100	0



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Analytic Data (TY = TYCO / SO = SOLBERG)

Foam quality before temperature conditioning:
(EXP = Expansion value & 50% Drain = Drain time Min:Sec)

100% TY / 0% SO	75% TY / 25% SO	50% TY / 50% SO	25% TY / 75% SO	0% TY / 100% SO
EXP = 5.4 50% Drain = 7:01	EXP = 5.5 50% Drain = 7:31	EXP = 5.8 50% Drain = 8:01	EXP = 6.3 50% Drain = 8:16	EXP = 5.0 50% Drain = 8:22

Foam quality after temperature conditioning:
(EXP = Expansion value & 50% Drain = Drain time Min:Sec)

100% TY / 0% SO	75% TY / 25% SO	50% TY / 50% SO	25% TY / 75% SO	0% TY / 100% SO
EXP = 5.5 50% Drain = 7:16	EXP = 6.0 50% Drain = 7:35	EXP = 5.9 50% Drain = 7:45	EXP = 6.6 50% Drain = 8:18	EXP = 5.3 50% Drain = 8:36

Discussion of Results

Both before and after temperature conditioning, all of the samples were clear liquids, water white to light straw colored with no signs of precipitation, gelling, layering or any other notable condition. The foam quality values showed no signs of deterioration after the temperature conditioning. In fact, many values actually increased slightly over the values obtained before the temperature conditioning.

Conclusion

SOLBERG ARCTIC 3% AFFF foam concentrate and TYCO/ANSUL ANSULITE AFC-3A AFFF foam concentrate are completely compatible when mixed at all ratios.



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TECHNICAL BULLETIN TB-1022-1 | JUNE 2016

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