



BULLETIN #1020-1

TECHNICAL BULLETIN

Foam Compatibility — ARCTIC 3x6% ATC & ANSULITE 3x6% AR-AFFF


Introduction

This study was undertaken to determine if SOLBERG® ARCTIC™ 3x6% ATC™ Foam Concentrate is compatible in admixture with TYCO® ANSULITE® 3x6% AR-AFFF Foam Concentrate. Since neither Underwriters Laboratories Inc. (UL) nor Factory Mutual (FM) possess any 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 mix ratios. These admixtures are tested for foam quality immediately after being prepared and then 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

Admixtures of the SOLBERG and TYCO foam concentrates were prepared as follows:

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



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Analytical Data (TY= TYCO ANSULITE and SO= SOLBERG ARCTIC)

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 = 5.0 50% Drain = 10:12 Viscosity = 2000	EXP = 5.2 50% Drain = 12:12 Viscosity = 2100	EXP = 5.0 50% Drain = 13:17 Viscosity = 2260	EXP = 5.2 50% Drain = 13:16 Viscosity = 2400	EXP = 5.5 50% Drain = 13:30 Viscosity = 2760

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 = 5.1 50% Drain = 12:21 Viscosity = 1940	EXP = 5.0 50% Drain = 13:00 Viscosity = 2200	EXP = 5.1 50% Drain = 13:29 Viscosity = 2680	EXP = 5.2 50% Drain = 13:57 Viscosity = 2480	EXP = 5.4 50% Drain = 14:15 Viscosity = 2500

Note: viscosity units (cP) measured utilizing Brookfield Viscometer, Spindle #4 at 30 rpm

Discussion of Results

Both before and after temperature conditioning, all of samples were opaque and slightly yellow 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.

Conclusion

SOLBERG ARCTIC 3X6% ATC AR-AFFF Class B foam concentrate and TYCO ANSULITE 3X6% AR-AFFF Class B foam concentrate are completely compatible in all admixture ratios.



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