



PRODUCT TECHNICAL BULLETIN

CLASS A FOAM COMPATIBILITY PHOS-CHEK WD-881 & TYCO SILV-EX PLUS

BACKGROUND

Class A foam users are hesitant to mix different Class A foam concentrates in the foam tank on their apparatus due to the possibility of incompatibility between the two products. Incompatibility may cause the formation of gel-like globules that would have adverse effects to firefighting equipment or foam pump injection systems. It is known that Class A foam and Class B foams are incompatible forming this gel-like substance due to the inclusion of fluorinated materials in Class B foams. However, most Class A foams do not contain this raw material.

During extended out of area assignments, it is possible that engines with one brand of Class A foam may be resupplied with a different brand. It is also possible that customers may choose to purchase a different brand based on availability, performance and/or cost differences from their current brand.

This work describes the effects of mixing PHOS-CHEK WD-881 and Tyco SILV-EX PLUS Class A foam concentrates.

SUMMARY

Three samples consisting of a mixture between WD-881 and SILV-EX PLUS were prepared. The mix ratios were as follows: 50:50 WD-881/ SILV-EX PLUS, 90:10 WD-881/ SILV-EX PLUS, and 10:90 WD-881/ SILV-EX PLUS. All three samples were mixed and checked for clarity and precipitation formation. A small sample of each mixture was stored at 32 °F (0 °C), 70 °F (21 °C), and 120 °F (49 °C) for 24 hours and rechecked for clarity and the presence of any precipitation after returning to room temperature 70 °F (21 °C). The foaming capability of the mixtures was then evaluated to determine if mixing of the two concentrates negatively impacted their ability to provide a quality foam.

CONCLUSIONS AND TECHNICAL DATA

Mixtures of SILV-EX PLUS Foam and WD-881 ranging from 10% to 90% WD-881 does not cause any changes in the physical appearance of the foam concentrate, see Table 1. Table 2 illustrates the differences in foam development and stability between the two products. Expansion ratio (ER) refers to the volume of foam obtained per volume of solution and the 25% drain time (DT) is the time in minutes for 25% of the foam's contained water to be released for absorption into the fuel. Higher expansion ratios and longer drain times are indicative of an improved product. The data suggests that when used at

lower concentrations (0.3%) the quality of foam decreases with the amount of SILV-EX PLUS present. However, when higher concentrated solutions are prepared (0.6%), minimal difference in foaming characteristics are seen with up to 50/50 mixtures of the two concentrates.

TABLE 1
Storage Temperature (°F) and Sample Observations

Sample	Storage Temperature	Observation
90:10 WD-881/ SILV-EX PLUS	32 °F (0 °C) 70 °F (21 °C) 120 °F (49 °C)	Clear and Homogeneous
50:50 WD-881/ SILV-EX PLUS	32 °F (0 °C) 70 °F (21 °C) 120 °F (49 °C)	Clear and Homogeneous
10:90 WD-881/ SILV-EX PLUS	32 °F (0 °C) 70 °F (21 °C) 120 °F (49 °C)	Clear and Homogeneous

TABLE 2
Foam Development of WD-881/SILV-EX PLUS Mixtures

Product	0.3% Solution ER	0.3% Solution 25% DT	0.6% Solution ER	0.6% Solution 25% DT
WD-881	3.5	6.8	4.0	9.0
SILV-EX PLUS	1.9	1.9	3.0	4.2
Mixture 90:10 WD-881: SILV-EX PLUS	3.2	5.5	4.0	9.0
Mixture 50:50	2.6	3.5	3.8	9.0
Mixture 10:90 WD-881: SILV-EX PLUS	2.0	2.0	3.4	6.3

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