CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2025
DateRun:	10/08/2025
Experimenters:	Tatyanna Moreland Junior
ClientType:	Lab
ProjectNumber:	Project #8
Substrates:	Stainless Steel
PartType:	Coupon
Contaminants:	Greases, Waxes, Oil
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To evaluate the effectiveness of the chemical mixtures SB-11 (46% Ektapro Eep 54% Benzyl Benzoate) and SB-21 (13% Benzyl Alcohol 87% Benzyl Benzoate) at removing different oils from stainless steel coupons.
Experimental Procedure:	Three stainless steel coupons were used for each of the four contaminants (25% Beeswax 75% Caster Oil, DAW 330B, Cooking Oil, and Vacuum Grease) being tested, for a total of 6 coupons per cleaner. The initial weights of each coupon were recorded. The bottom fourth of every coupon was soiled by applying the contaminant with a swab. The dirty weights of each coupon were then recorded. They were left to dry for a week, and a second set of dirty weights were taken to account for weight changes during extra drying time. The coupons were then subjected to unheated immersion in the cleaners for 10 minutes. After the coupons were cleaned, they were left to air-dry for 48 hours, and then the clean weights of each coupon were taken.

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Results:

Cleaner	Contaminant	Initial wt of cont.	Final wt of cont.	%Cont Removed	Average % Removal	Average Cleaner %
SB-11	25% Beeswax, 75% Castor Oil	0.0243	0.03	-23.46	-65.15	-65.55
		0.023	0.0356	-54.78		
		0.0151	0.0328	-117.22		
	DAW-330B	0.029	0.0401	-38.28	-65.94	
		0.0149	0.0403	-170.47		
		0.0595	0.053	10.92		
SB-21	Cooking Oil	0.0799	0.0216	72.97	69.21	31.28
		0.1256	0.0291	76.83		
		0.0818	0.0345	57.82		
	Vacuum Grease	0.1827	0.1979	-8.32	-6.64	
		0.1787	0.19	-6.32		
		0.1365	0.1437	-5.27		

Contaminant weight after a week dry time

Cleaner	Contaminant	Initial wt of cont.	Final wt of cont.
SB-11	25% Beeswax, 75% Castor Oil	0.0148	0.03
		0.0243	0.0356
		0.0159	0.0328
	DAW-330B	0.0303	0.0401
		0.0056	0.0403
		0.0159	0.053
SB-21	Cooking Oil	0.0784	0.0216
		0.1252	0.0291
		0.0803	0.0345
	Vacuum Grease	0.178	0.1979
		0.1742	0.19
		0.1355	0.1437

Summary:

Conclusion:

Overall the cleaners were not effective at removing the contaminants. The extra drying of contaminants had varying effects on weight, with some losing mass and others gaining mass. This confirms the idea that testing should be completed within the same day they are soiled to limit weight fluctuations. Visually, the only cleaner that was able to remove the contaminant was SB-21 with cooking oil, but it was gravimetrically deemed ineffective because the cleaner did not dry properly.