CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2024
DateRun:	02/14/2024
Experimenters:	Amelia Wagner
ClientType:	University
ProjectNumber:	Project #1
Substrates:	Aluminum
PartType:	Part
Contaminants:	Oil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate the efficacy of previously identified solvents and mixture in removing oil from aluminum panels via manual wipe
Experimental Procedure:	Three pre weighed aluminum coupons were used per cleaner for a total of 9 coupons. The coupons were then soiled with a mixture of 1 teaspoon of AATCC synthetic soil and 50 mL of mineral oil by swabbing the mixture onto the bottom third of the coupons. The dirty weights of the coupons were then recorded. The coupons were then cleaned with their respective cleaners by a singular wipe of a paper towel wet with the correct cleaner. The coupons were then left to dry for 20 mins before the clean weights were recorded.

Results:

Cleaner	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG
Dimethyl Carbonate	0.0944	0.0033	96.50	98.47
	0.0967	0.0000	100.00	
	0.0365	0.0004	98.90	
Ethyl Acetate	0.0535	0.0011	97.94	98.10
	0.0776	0.0004	99.48	
	0.0321	0.0010	96.88	
62% Ethyl Acetate + 38% Dimethyl Carbonate	0.0762	0.0007	99.08	97.92
	0.0500	0.0022	95.60	
	0.0750	0.0007	99.07	

Summary:

Conclusion: Dimethyl Carbonate, Ethyl Acetate, and the mixture of 62% Ethyl Acetate + 38% Dimethyl Carbonate all effectively removed the oil from the aluminum coupons with a singular manual wipe.