CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2024
DateRun:	10/09/2024
Experimenters:	Tatyanna Moreland Junior, Cindy McClaughlin, Rachael Rososky
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #2
Substrates:	Vinyl Composite Tiles, Painted metal
PartType:	Coupon
Contaminants:	DCC-17
Cleaning Methods:	Manual Wipe
Analytical Methods:	Colorimeter, Gravimetric
Purpose:	To test the effectiveness of Green Mountain Ammenities all purpose cleaner against other all purpose cleaners on the market.
Experimental Procedure:	Twenty four coupons per cleaner, three of each substrate per cleaner, were used. The initial weights of each coupon were taken. The initial L value (measure of flurorescence) was also taken with the colorimeter. The coupons were contaminated with DCC-17 Formulation using a handheld swab and dried overnight. The contaminated coupons were weighed, and the dirty L value was measured before placing three coupons per cleaner of the same substrate into a Gardner Straight Line Washability (SLW) unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled. The Wypal and each coupon were treated with three sprays and cleaned for 20 cycles (~30 seconds of cleaning). Clean coupons dried for 24 hours before final weights were taken to assess the amount of soil removed. The final L value was taken in order to assess the amount of staining left behind by the soil. The L values from the colorimeter represent the difference in lightness (higher value) and darkness (lower value). Percent detergency demonstrates the amount of restoration to the original that has occurred after the cleaning test has been performed. A higher average percent detergency indicates that the cleaner has been effective and has restored the dirty substrate and cleaned it so that it now is much closer to how it originally was measured. Data recorded from the readings can be calculated as percent detergency in the following equation to determine the cleaning efficacy of each formulation: *% DET = L(cleaned) - L(soiled) / L(unsoiled) - L(soiled) X 100*
Results:	Gravimetric:

Cleaner	Coupon Type	Initial wt of cont.	Final wt of cont.	%Cont Removed	% Average	% Overall
Ecolab Degreaser	VCT	0.3799	0.1335	64.8592	64.20	71.78
		0.4752	0.1559	67.1928		
		0.5634	0.2222	60.5609		
	Painted Metal	0.3294	0.0861	73.8616	79.35	
		0.5225	0.0802	84.6507		
		0.2856	0.0584	79.5518		
Ecolab Citrus 550	VCT	0.3545	0.2338	34.0480	57.12	65.62
		0.4431	0.1691	61.8371		
		0.4300	0.1055	75.4651		
	Painted Metal	0.4197	0.1498	64.3078	74.12	
		0.6484	0.0634	90.2221		
		0.4357	0.1402	67.8219		
GMA	VCT	0.4251	0.1214	71.4420	69.35	66.67
		0.4169	0.1967	52.8184		
		0.6146	0.0997	83.7781		
	Painted Metal	0.5120	0.2984	41.7187	63.99	
		0.5052	0.1781	64.7466		
		0.4938	0.0715	85.5205		
Zep Purple	VCT	0.5102	0.1576	69.1102	72.23	71.12
		0.5388	0.1152	78.6192		
		0.4669	0.1449	68.9655		
	Painted Metal	0.5393	0.3060	43.2598	70.01	

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		0.6159	0.1010	83.6012		
		0.5687	0.0957	83.1721		

Colorimeter:

Cleaner	Coupon Type	%DET	% Average	% Overall
Ecolab Degreaser	VCT	46.22	46.43	63.37
		37.6		
		55.46		
	Painted Metal	75.19	80.30	
		84.74		
		80.98		
Ecolab Citrus 550	VCT	19.74	30.12	51.26
		37.96		
		32.66		
	Painted Metal	26.6	72.4	
		91.32		
		99.28		
GMA	VCT	41.59	29.04	52.41
		31.75		
		13.78		
	Painted Metal	69.12	75.78	
		96.3		
		61.92		
Zep Purple	VCT	-88.57	13.37	40.05
		55.58		
		73.1		
	Painted Metal	31.22	66.73	
		86.57		
		82.41		

Summary:

Conclusion: No meaningful conclusions can be made from this data, as there are far too many outliers. A retest will need to be done