CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 04/25/2024

Experimenters: Tatyanna Moreland Junior, Amelia Wagner

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Ceramics, Plastic, Painted metal

PartType: Coupon

Contaminants: DCC-17

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: Redo of All-purpose DCC17 test to investigate previously found outliers.

Experimental Procedure: Three coupons of each substrate were used per cleaning product, for a total of 24 coupons. Each coupon was weighed using a gravimetric balance and had their weights recorded. Each coupon was then soiled with about 0.5 grams of DCC-17 soil by using a swab to administer the contaminant down the center of the coupons. The contaminated coupons were then left to dry for 24 hours to allow the DCC-17 soil to adhere to the coupons. After the 24 hour drying period, each coupon was weighed again, and had their 'dirty weights' recorded. The coupons were then cleaned with their respective cleaning product using the Straight Line Washability Unit (or SLW) to ensure a standard pressure is applied to each coupon while being manually wiped. Two sprays of the correct cleaner was applied to a wypall that is attached to the cleaning sled of the SLW to wipe the soil away and two sprays were applied directly to each coupon (meaning each coupon was cleaned with about 2.5 ml of cleaning chemisty). The SLW unit was run for 20 cycles (20 back and forth motions) for each coupon. Once cleaned, the coupons were allowed to air dry before having their final weights recorded.

Results:

Cleaner	Substrate	Initial wt of cont.	Final wt of cont.	%Cont Removed	Average % Removal	Average Cleaner Removal
Bubbl	Ceramic	0.3793	0.0118	96.89	94.31	92.05
		0.1306	0.0106	91.88		
		0.4271	0.0249	94.17		
	Plastic	0.2111	0.0268	87.30	90.22	
		0.2811	0.0303	89.22		
		0.5462	0.032	94.14		
	Painted Metal	0.259	0.0161	93.78	91.60	
		0.1106	0.0104	90.60		
		0.1389	0.0133	90.42		
Formula 409	Ceramic	0.217	0.0042	98.06	94.82	94.74
		0.2318	0.0078	96.64		
		0.1065	0.0109	89.77		
	Plastic	0.2726	0.0119	95.63	95.64	
		0.2586	0.0041	98.41		
		0.2347	0.0167	92.88		
	Painted Metal	0.1863	0.003	98.39	93.76	
		0.1445	0.0159	89.00		
		0.2576	0.0157	93.91		
Meyers Everyday Probiotic Shower Spray	Ceramic	0.2748	0.0026	99.05	95.84	93.59
		0.1657	0.0048	97.10		
		0.0845	0.0073	91.36		
	Plastic	0.2156	0.0155	92.81	94.02	
		0.3567	0.0139	96.10		
		0.2129	0.0146	93.14		
	Painted Metal	0.137	0.0135	90.15	90.90	
		0.1664	0.0178	89.30		
		0.1778	0.012	93.25		

Summary:

Conclusion:

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Although all products, struggled more to remove the DCC17 soil than the Hucker's soil, all products tested are effective in removing DCC17 soil from Ceramic, Plastic, and Painted Metal. The Bubl product performed comparatively to the two comparative products.