

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 04/19/2024

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: All purpose janitorial test to determine the efficacy of the company's product in comparison to other all purpose cleaners in removing DCC-17 soil from multiple surface types.

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 chemistry). 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	90.51	88.32
		0.1306	0.0255	80.47		
		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	84.22	
		0.1106	0.027	75.59		
		0.1389	0.0232	83.30		
Formula 409	Ceramic	0.217	0.0042	98.06	91.66	93.69
		0.2318	0.0078	96.64		
		0.1065	0.021	80.28		
	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	85.94	89.64
		0.1657	0.0048	97.10		
		0.0845	0.0324	61.66		
	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	88.98	
		0.1664	0.0274	83.53		
		0.1778	0.012	93.25		

There are two outliers that are important to note:

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Bubbl + Painted Metal: The coupon that shows a 75.59% soil removal is an outlier. If retested, it is likely that the testing would show a higher overall efficacy for this product.

Meyers Everyday Probiotic Shower Spray + Ceramic: The coupon that shows a 61.66% soil removal is an outlier. If retested, it is likely that the testing would show a higher overall efficacy for this product.

Summary:

Conclusion: The Bubble product and Meyers Everyday Probiotic Shower Spray are shown to perform comparatively. The Formula 409 is shown to have a slightly higher efficacy than the other products. However, if the previously mentioned outliers are removed or retested, it is likely that all three products would be shown to perform comparatively.