CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 09/07/2021

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ClientType:

ProjectNumber: Project #3

Substrates: Ceramics, Plastic, Painted metal

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: To test the effectiveness of Podsy in the removal of Hucker's Soil from various substrates.

Experimental Procedure: A Podsy solution was created by placing a solution pod into a spray bottle and filling it with cold water (~50^{o}F). This solution was allowed to sit for 2 minutes and then shaken to mix the solution parts together. Then, 3 coupons of each substrate (ceramic, plastic, painted metal) were collected and initial weights were taken. Hucker's Soil (Creamy Peanut Butter, Salted Butter, Wheat gluten, Egg Yolk, Evaporated milk, DI water, Printer's ink with boiled linseed oil, India Ink, Saline Solution) was applied to each coupon and allowed to air dry for 2 hours. After the 2 hour dry time, the weights of the newly contaminated coupons were measured. All coupons were placed into a Gardner-scrub Abrasion Tester machine. Wypall cleaning cloths were attached to each of the 3 cleaning blocks used for the test. Each Wypall cloth and all coupons received 2 sprays of the Podsy solution and the Gardner-scrub Abrasion Tester was run for 20 repetitions, simulating 20 manual wipes. Once cleaning concluded, the cleaned coupons were allowed to air dry for 24 hours. After 24 hours, the weights of the cleaned coupons were measured.

Results:

Cleaner	Substrate	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
Podsy	Ceramic	0.2241	0.0052	97.68	96.82	96.32
		0.3799	0.0088	97.68		
		0.4858	0.0193	96.03		
	Plastic	0.5895	0.0243	95.88	95.16	
		0.3758	0.0217	94.23		
		0.5841	0.0270	95.38		
	Painted Metal	0.4771	0.0201	95.79	96.99	
		0.6506	0.0164	97.48		
		0.7178	0.0165	97.70		
Formula 409	Ceramic	0.3331	0.0110	96.70	94.34	94.57
		0.5190	0.0387	92.54		
		0.4941	0.0470	90.49		
	Plastic	0.5873	0.0139	97.63	94.25	
		0.4561	0.0304	93.33		
		0.7000	0.0575	91.79		
	Painted Metal	0.642	0.0119	98.15	95.11	
		0.8566	0.0495	94.22		
		0.6970	0.0491	92.96		

Podsy had an average effectiveness of 97% for ceramic, 95% for plastic and 97% for painted metal. Formula 409 had an average effectiveness of 94% for ceramic, 94% for plastic and 95% for painted metal. Posdy had a higher removal effectiveness for all three substrates.

Summary:

Substrates:	Ceramics, Plastic, Painted metal				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Big 3 Packaging	Podsy Surface Cleaning System		96.00	☑	Posdy effectively removed Huckers soil from all three substrates
Clorox Company	409 (Multi-Surface Cleaner)	RTU	95.00	☑	Formula 409 was effective at removing Huckers soil from all three substrates

Conclusion:

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Podsy was more effective in the removal of Hucker's Soil from ceramic, plastic, and painted metal substrates than the comparison product Formula 409.