CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2021
DateRun:	07/22/2021
Experimenters:	Nicole Kebler, Edward Judge
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #2
Substrates:	Ceramics, Plastic, Painted metal
PartType:	Coupon
Contaminants:	Hucker's Soil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric, Visual
Purpose:	To evaluate the effectiveness of all-purpose cleaners on ceramic, painted metal, and plastic.
Experimental Procedure:	One provided tablet was dissolved completely in 32 oz. of warm tap water inside a provided spray bottle to prepare the Amazon Aware All-Purpose Cleaner. Preweighed ceramic, plastic, and painted steel coupons, three of each substrate per cleaner, were coated with 0.5 grams of Hucker's soil and air-dried at room temperature (68F) for two hours before recording dirty weights. Three coupons of the same substrate were placed on the Gardner Straight Line Washability (SLW) unit and a Kimberly-Clark Wypal was attached to the cleaning sled. The Wypall and coupons were treated each with two sprays of the specified cleaner before running the SLW unit for 20 cycles (30 seconds of cleaning). Cleaned coupons were air-dried overnight and final weights were recorded the following day.
Results:	The SLW unit failed to properly clean the 3rd coupon (bolded in the table below) of all tested cleaners which resulted in a lower average percent removal for all products. An average using only the first and second coupon percent removal showed a higher percent removal that was more consistent with visual observations. Cleaners: A) Amazon Aware All-Purpose Cleaner B) Formula 409 Substrates: 1. Ceramic 2. Painted Metal 3. Plastic

Cleaner	Substrate	Initial weight	Dirty weight	% Removal	Average % Removal	Overall % Removal
A	1	0.1243	0.0057	95.41	92.82	87.09
		0.0952	0.0055	94.22		
		0.1842	0.0206	88.82		
	2	0.1283	0.0099	92.28	87.08	
		0.2013	0.0084	95.83		
		0.1441	0.0387	73.14		
	3	0.2024	0.0137	93.23	81.37	
		0.2282	0.015	93.43		
		0.2888	0.1229	57.44		
B	1	0.112	0.008	92.86	87.52	81.70
		0.1463	0.0078	94.67		
		0.1013	0.0253	75.02		
	2	0.1473	0.0059	95.99	80.04	
		0.1528	0.0059	96.14		
		0.3178	0.1653	47.99		
	3	0.232	0.0344	85.17	77.55	
		0.2797	0.0345	87.67		
		0.3191	0.1282	59.82		

Summary:

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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Sunstate Laboratory LLC	Sunstate All Purpose Cleaner Tablet	100%	95.00	☑	Sunstate All-Purpose was effective at removing Huckers soil from ceramic, painted metal, and chrome.
Clorox Company	Formula 409 All Purpose Cleaner	100%	93.00	☑	Formula 409 was effective at removing Huckers soil from ceramic and painted metal.

Conclusion: Amazon Aware All-Purpose Cleaner using one tablet was more effective than the comparative product overall at removing Hucker's soil from all three substrates.