CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 02/22/2021

Experimenters: Edward Judge

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Plastic, Chrome, Painted metal

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: To analyze the efficiency of PathoSans All Purpose Cleaner (PathoClean) for the removal of Hucker's Soil from three substrates.

Experimental Procedure: Nine pre-weighed coupons were used to test each of the two cleaners. Each coupon was cover in 0.5 grams of Hucker's Soil (distilled water 44.2%, evaporated milk 13.5%, creamy peanut butter 8.8%, salted butter 8.8%, stone ground what flour 8.8%, egg yolk 8.8%, printer's ink with boiled linseed oil 0.9%, saline solution 2.7%, India ink 3.5%) using a swab. Soil was allowed to air dry for 2 hours before dirty weights were recorded. Three coupons of the same substrate were loaded into the Straight-Line Washability (SLW) machine and a KC Wypall reinforced paper towel was attached to the cleaning sled. The Wypall and coupons were treated with 2 sprays of the cleaner and run for 20 cycles (equivalent to 30 seconds of cleaning). Coupons were left to air dry for 24 hours and final weights were recorded the following day.

Results: PathoClean performed better on plastic substrate, an average of 84% while Formula 409 was about 67% effective. For the other two substrates, both cleaners performed about the same as one another. PathoClean had about 65% removal on Chrome and 67% on Painted metal. Formula 409 had about 68% removal on chrome and 72% on painted metal. The cleaners were comparable to one another.

Cleaner	Substrate	Initial wt	Final wt	% Removed	% AVG	% Overall
All Purpose PathoClean	Plastic	0.9629	0.3398	64.71	83.53	72.13
		0.9019	0.0143	98.41		
		0.9455	0.1185	87.47		
	Chrome	0.9080	0.3741	58.80	65.38	
		1.1495	0.2938	74.44		
		0.9305	0.3452	62.90		
	Painted Metal	0.7238	0.2775	61.66	67.48	
		1.1767	0.3207	72.75		
		1.2317	0.3936	68.04		
Formula 409	Plastic	1.1078	0.4333	60.89	66.51	68.92
		1.2796	0.3838	70.01		
		1.1193	0.3511	68.63		
	Chrome	1.0282	0.3340	67.52	68.30	
		1.1348	0.3323	70.72		
		0.9128	0.3044	66.65		
	Painted Metal	0.8152	0.2637	67.65	71.96	
		1.0368	0.2861	72.41		
		1.0805	0.2614	75.81		

Summary:

Substrates:	Plastic, Chrome, Painted metal				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
PathoSans	PathoClean	100	72.13	☑	
Clorox Company	Formula 409 All Purpose Cleaner	100	68.92	☐	

Conclusion: PathoClean was more effective at removing soil than Formula 409 cleaner for plastic and was comparable for chrome and painted metal.