CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 11/24/2008

Experimenters: Jason Marshall, Junhee Cho

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Ceramics, Plastic, Steel

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate supplied product for all purpose cleaning

Experimental Procedure: The supplied cleaning product was used at the supplied concentration (20:1). A second product, selected by the lab, was diluted with DI water to vendor recommended dilution (128:1) for all purpose cleaning. Preweighed ceramic were coated with Hucker's Soil Formulation (Jif Creamy Peanut Butter 9.2%, Salted Butter 9.2%, Arrowhead Mills stone ground wheat flour 9.2%, Egg Yolk 9.2%, Evaporated milk 13.8%, Distilled water 45.8%, Printer's ink with boiled linseed oil 0.9%, Shaws saline solution 2.7%) using a handheld swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added.

Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly Clark Reinforced paper towel was attached to the cleaning sled and soaked with 5-7 sprays of cleaning solutions. Each coupon was sprayed 7-10 times with the same cleaning solution. The solution was allowed to penetrate for 30 seconds followed by cleaning in the SLW unit for 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded, and efficiencies were calculated and recorded.

Results: Both the supplied product and industry product were effective in removing the Hucker's Soil with a manual wiping action. The table lists the amount of soil initially added and the amount remaining after cleaning and the product efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
H2O2-ceramic	0.2179	0.0650	70.17
	0.4540	0.0973	78.57
	0.0278	0.0018	93.53
H2O2-steel	0.2052	0.0360	82.46
	0.3800	0.0394	89.63
	0.2654	0.0342	87.11
H2O2-plastic	0.4010	0.0095	97.63
	0.3011	0.0236	92.16
	0.3396	0.0233	93.14
Heavy Duty-ceramic	0.5248	0.0855	83.71
	0.3788	0.0348	90.81
	0.4649	0.0980	78.92
Heavy Duty-steel	0.4396	0.0558	87.31
	0.3631	0.0432	88.10
	0.1365	0.0534	60.88
Heavy Duty-plastic	0.3503	0.0117	96.66
	0.1709	0.0201	88.24
	0.3491	0.0167	95.22

Summary:

Substrates:	Ceramics, Plastic, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Cleanline Products	H2O2 Super Citrus Concentrate	4	87.16	☑	
		2	85.54	☑	

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The Clean Environment Co	Natural N-14 Heavy Duty Degreaser and Cleaner				

Conclusion: The supplied product had an overall average efficiency greater than 85% and would be considered effective based on the SSL testing methodology.