CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2003

DateRun: 02/23/2003

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: State Agency

ProjectNumber: Project #2

Substrates: Steel

PartType: Coupon

Contaminants: Dirt, Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Photography

Purpose: To evaluate supplied products on third soil type on painted steel coupons.

Experimental Procedure: Four supplied cleaning products were diluted with DI water to vendor recommended concentrations for all purpose cleaning. Twelve preweighed painted steel coupons 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 hand held swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added. Photographs were taken.

Three coupons were placed into a Gardner Straight Line Washability unit. A Professional Painter's Rag 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 cleaning unit was run 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 a second set of photographs were taken. Efficiencies were calculated and recorded.

Results: All four products were successful in removing SSL Soil 3 from painted steel coupons. The table below lists the amount of soil added and removed.

Table 1. Soil Application and Removal

Cleaner	Initial wt	Final wt	% Removed
H2Orange2	0.0344	0.0003	99.13
	0.0684	0.0009	98.68
	0.0330	0.0027	91.82
Super H2O2	0.0495	0.0041	91.72
	0.0875	0.0042	95.20
	0.1052	0.0029	97.24
Free Fall	0.0689	0.0022	96.81
	0.0402	0.0028	93.03
	0.0628	0.0013	97.93
Ecogent	0.0319	-0.0003	100.94
	0.0402	0.0022	94.53
	0.1229	0.0002	99.84

Summary:

Substrates:	Steel
Contaminants:	Dirt, Hucker's Soil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
EnvirOx LLC	H2Orange2	4	96.54	☑	
Cleanline Products	H2O2 Super Citrus Concentrate	3	94.72	☑	
Ramsey Company	Free Fall	6	95.92	☑	
Cogent Environmental Solutions	Ecogent General All Purpose Cleaner	3	98.44	☑	

Conclusion: The overall cleaning performance of the four products tested on SSL Soil 3 are as follows:

SSL Soil 3	Ceramic	Plastic	Painted Steel	Overall Efficiency
H2Orange2	87.38	91.18	96.54	91.70
	85.99	85.51	94.72	88.74

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Super H2O2				
Free Fall	97.10	85.12	95.92	92.72
Ecogent	85.09	74.94	98.44	86.16