CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	09/03/2014
Experimenters:	Jason Marshall, Loc Nguyen, George Liang
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 three supplied products for all purpose cleaning following GS 37 requirements
Experimental Procedure:	Preweighed ceramic, plastic G-10 and painted steel coupons were coated with Hucker's Soil Formulation (Jif Creamy Peanut Butter,Salted Butter, Arrowhead Mills stone ground wheat flour, Egg Yolk, Evaporated milk, distilled water, Printer's ink with boiled linseed oil, Shaws saline solution) 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 Wypal reinforced paper towel was attached to the cleaning sled and soaked with 1 spray of cleaning solution. Each coupon was sprayed once 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, efficiencies were calculated and recorded. ChemistriesEvaluated: All Purpose Gel; All Purpose Regular; Heavy Duty Degreaser
Results:	

Painted steel	Initial wt	Final wt	% Removed	Average % Removed	Overall Ave
All Purpose Regular	0.5951	0.1337	77.53		
All Purpose Regular	0.5753	0.0797	86.15		
All Purpose Regular	0.7506	0.0760	89.87	84.52	
Plastic					
All Purpose Regular	0.6250	0.0393	93.71		
All Purpose Regular	0.6893	0.0310	95.50		
All Purpose Regular	0.7236	0.0477	93.41	94.21	
Ceramic					
All Purpose Regular	0.5682	0.1088	80.85		
All Purpose Regular	0.6591	0.1106	83.22		
All Purpose Regular	0.6947	0.0775	88.84	84.31	87.68
Painted steel					
All Purpose Gel	0.6334	0.0902	85.76		

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All Purpose Gel	0.4531	0.1447	68.06		
All Purpose Gel	0.6042	0.1705	71.78	75.2	
Plastic					
All Purpose Gel	0.6550	0.0519	92.08		
All Purpose Gel	0.6997	0.0563	91.95		
All Purpose Gel	0.6802	0.0703	89.66	91.23	
Ceramic					
All Purpose Gel	0.6411	0.1478	76.95		
All Purpose Gel	0.5242	0.1407	73.16		
All Purpose Gel	0.5899	0.0801	86.42	78.84	81.76
Painted steel					
Heavy Duty Degreaser	0.7011	0.0470	93.30		
Heavy Duty Degreaser	0.7252	0.0587	91.91		
Heavy Duty Degreaser	0.6777	0.0993	85.35	90.18	
Plastic					
Heavy Duty Degreaser	0.8732	0.0691	92.09		
Heavy Duty Degreaser	0.7772	0.0079	98.98		
Heavy Duty Degreaser	0.7656	0.0582	92.40	94.49	
Ceramic					
Heavy Duty Degreaser	0.7584	0.1277	83.16		
Heavy Duty Degreaser	0.8062	0.0984	87.79		
Heavy Duty Degreaser	0.7630	0.1035	86.44	85.80	90.16
Painted steel					
hydrolysis orange	0.2800	0.097	65.36		
hydrolysis orange	0.2803	0.035	87.51		
hydrolysis orange	0.2731	0.0651	76.16	76.34	
Plastic					
	0.2752	0.0276	89.97		

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hydrolysis orange					
hydrolysis orange	0.2798	0.0193	93.10		
hydrolysis orange	0.2791	0.0614	78.00	87.02	
Ceramic					
hydrolysis orange	0.2776	0.1211	56.38		
hydrolysis orange	0.2740	0.0230	91.61		
hydrolysis orange	0.2833	0.042	85.17	77.72	80.36

Summary:

Substrates:	Ceramics, Plastic, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
A & C Green Cleaner LLC	A & C All Purpose Regular	100	87.68	☑	
EcoLab	Hydris Orange	100	80.36	☐	
A & C Green Cleaner LLC	A & C All Purpose Gel	100	81.76	☐	
A & C Green Cleaner LLC	A & C Eco Green Heavy Duty Degreaser	100	90.16	☑	

Conclusion:

All Purpose Regular and Heavy-Duty Degreaser were both effective at removing Hucker’s Soil. A cleaner is effective with a cleaning efficiency rating of 85% or higher. Heavy Duty Degreaser was the most effective at removing Painted Steel, Plastic and Ceramic coupons. However, All Purpose Gel overall may not be effective at cleaning all sorts of coupons; it is nonetheless effective at removing Plastic coupons.