CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2007
DateRun:	10/21/2007
Experimenters:	Jason Marshall, Shweta Bansal
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 requested products for all purpose soil removal
Experimental Procedure:	The supplied cleaning products were used at full strength. Preweighed fiberglass, ceramic and chrome coupons were coated with SSL Soil 3 (Hucker's Soil: Distilled water 45.8%, Evaporated milk 13.8%, Creamy peanut butter 9.2%, Salted butter 9.2%, Stone ground wheat flour 9.2%, Egg yolk 9.2%, Printer's ink with boiled linseed oil 0.9% and 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. Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly-Clark WypAll X60 reinforced wipe 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. Efficiencies were calculated and recorded.
Results:	The top cleaning product removed less than 70% of the all purpose Hucker's soil. The table lists the amount of soil added, the amount remaining, the efficiency for each coupon cleaned and the average removal from each substrate type.

Cleaner	Substrate	Initial wt	Final wt	% Removed	Ave %	
Clorox	Painted Steel	0.0777	0.0145	81.34		67.21
		0.0742	0.0148	80.05	67.60	
		0.0500	0.0293	41.40		
	Plastic	0.0633	0.0136	78.52		
		0.0778	0.0193	75.19	76.61	
		0.0766	0.0183	76.11		
	Ceramic	0.0799	0.0226	71.71		
		0.0536	0.0436	18.66	57.42	
		0.1083	0.0196	81.90		
Countertop	Painted Steel	0.0422	0.0022	94.79		68.85
		0.0663	0.0013	98.04	97.26	
		0.1348	0.0014	98.96		
	Plastic	0.0629	0.0236	62.48		
		0.0433	0.0149	65.59	65.70	
		0.0936	0.0290	69.02		
	Ceramic	0.0560	0.0304	45.71		
		0.0479	0.0341	28.81	43.58	
		0.0749	0.0328	56.21		
Seventh Kitchen	Painted Steel	0.0905	0.0364	59.78		57.36
		0.0809	0.0195	75.90	71.63	
		0.0881	0.0183	79.23		
	Plastic	0.0424	0.0099	76.65		
		0.0536	0.0134	75.00	72.44	
		0.0533	0.0183	65.67		
	Ceramic	0.0569	0.0431	24.25		

CLEANING LABORATORY EVALUATION SUMMARY

		0.0461	0.0299	35.14	28.01	
		0.0357	0.0269	24.65		
Soft Scrub	Painted Steel	0.0631	0.0514	18.54		53.63
		0.0876	0.0528	39.73	32.98	
		0.0880	0.0522	40.68		
	Plastic	0.1369	0.0894	34.70		
		0.0501	0.0176	64.87	47.22	
		0.1578	0.0914	42.08		
	Ceramic	0.0525	0.0124	76.38		
		0.1240	0.0203	83.63	80.69	
		0.0513	0.0092	82.07		
Formula 409	Painted Steel	0.5980	0.3905	34.70		61.52
		0.7718	0.3876	49.78	33.55	
		1.0207	0.8555	16.18		
	Plastic	0.5136	0.1533	70.15		
		0.5557	0.0468	91.58	67.51	
		0.5161	0.3056	40.79		
	Ceramic	0.1013	0.0225	77.79		
		1.0084	0.1184	88.26	83.49	
		0.2350	0.0366	84.43		
Meyer All Purpose	Painted Steel	0.6896	0.2864	58.47		53.43
		0.3672	0.1610	56.15	56.26	
		0.9362	0.4292	54.16		
	Plastic	0.6708	0.4374	34.79		
		0.4205	0.1947	53.70	41.91	
		1.0288	0.6458	37.23		
	Ceramic	0.3252	0.1231	62.15		
		0.3762	0.0788	79.05	62.11	
		0.3796	0.2083	45.13		
Seventh All Purpose	Painted Steel	0.6129	0.5633	8.09		54.35
		0.6432	0.4778	25.72	33.00	
		0.2955	0.1029	65.18		
	Plastic	0.5848	0.1451	75.19		
		0.5566	0.2561	53.99	67.93	
		0.3685	0.0935	74.63		
	Ceramic	0.1603	0.0688	57.08		
		0.2917	0.0744	74.49	62.12	
		0.1858	0.0840	54.79		
DFC General Spray	Painted Steel	0.6528	0.5213	20.14		44.39
		1.0583	0.9114	13.88	15.01	
		0.9087	0.8087	11.00		
	Plastic	0.6796	0.6770	0.38		
		0.4263	0.0996	76.64	50.20	
		0.5838	0.1543	73.57		
	Ceramic	0.2305	0.0678	70.59		
		0.1595	0.0210	86.83	67.96	
		0.4391	0.2351	46.46		
DFC Kitchen	Painted Steel	0.8085	0.7164	11.39		47.05
		0.6122	0.4466	27.05	20.05	
		0.9331	0.7306	21.70		
	Plastic	0.3471	0.0417	87.99		
		0.4372	0.0605	86.16	73.04	

CLEANING LABORATORY EVALUATION SUMMARY

		0.4118	0.2266	44.97		
	Ceramic	0.2450	0.2331	4.86		
		0.2466	0.1203	51.22	48.06	
		0.1615	0.0192	88.11		
Comet	Painted Steel	0.5219	0.4405	15.60		44.84
		0.4049	0.2195	45.79	23.66	
		1.1585	1.0474	9.59		
	Plastic	0.4987	0.2451	50.85		
		0.3944	0.1691	57.12	62.75	
		0.4181	0.0825	80.27		
	Ceramic	0.4627	0.3534	23.62		
		0.3851	0.1555	59.62	48.11	
		0.1344	0.0523	61.09		
Meyer Shower	Painted Steel	0.6836	0.4878	28.64		50.67
		0.8661	0.5147	40.57	33.32	
		0.8864	0.6138	30.75		
	Plastic	0.4872	0.4273	12.29		
		0.4589	0.0910	80.17	63.28	
		0.4891	0.0128	97.38		
	Ceramic	0.3623	0.2826	22.00		
		0.2620	0.0837	68.05	55.40	
		0.2955	0.0705	76.14		
Seventh Bathroom	Painted Steel	0.2937	0.2195	25.26		60.40
		0.3137	0.0299	90.47	64.12	
		0.5785	0.1352	76.63		
	Plastic	0.2766	0.1338	51.63		
		0.7681	0.0380	95.05	69.66	
		0.7137	0.2691	62.30		
	Ceramic	0.3974	0.2989	24.79		
		0.1891	0.1222	35.38	47.43	
		0.3001	0.0536	82.14		
DFC Polish	Painted Steel	0.5494	0.5428	1.20		16.00
		0.6986	0.6153	11.92	8.77	
		0.5838	0.5068	13.19		
	Plastic	0.6641	0.4463	32.80		
		0.6208	0.2722	56.15	30.25	
		0.8604	0.8450	1.79		
	Ceramic	0.4921	0.4322	12.17		
		0.4234	0.3754	11.34	8.98	
		1.0207	0.9856	3.44		

Summary:

Substrates:	Ceramics, Plastic, Steel
Contaminants:	Hucker's Soil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Clorox Company	Clorox Kitchen Cleaner	100	67.21	☐	
Seventh Generation	Free & Clear Kitchen Cleaner	100	57.36	☐	
Henkel Corporation	Soft Scrub with Bleach	100	53.63	☐	
Clorox Company	Formula 409 All Purpose Cleaner	100	61.52	☐	
Mrs Myers Clean Day	Mrs Meyers Lemon Multisurface Cleaner	100	53.43	☐	
Seventh Generation	Free & Clear All Purpose	100	54.35	☐	
Cogent Environmental Solutions	DFC General Spray	100	44.39	☐	
	DFC Kitchen Spray	100	47.05		

CLEANING LABORATORY EVALUATION SUMMARY

Cogent Environmental Solutions				☐	
Prestige Brands Inc	Comet Bathroom Cleaner	100	44.84	☐	
Mrs Myers Clean Day	Mrs Meyers Lavender Tub and Tile	100	50.67	☐	
Seventh Generation	Disinfecting Bathroom Cleaner	100	60.40	☐	
Cogent Environmental Solutions	DFC GPC Polish	100	16.00	☐	

Conclusion: None of the products evaluated were found to be effective. Upon review of the trial, the soil formulation was very old (over 1 year) which may have affected the cleaning performance for the conditions typically used for all purpose cleaning.