CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2005
DateRun:	08/05/2005
Experimenters:	Jason Marshall
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 on three substrates for Hucker's Soil removal.
Experimental Procedure:	The three supplied cleaning product were diluted with DI water to vendor recommended concentration for all purpose cleaning. Nine preweighed ceramic, nine plastic G-10 and nine 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, efficiencies were calculated and recorded.
Results:	All three products were successful in removing SSL Soil 3 - Hucker's Soil from ceramic, plastic and painted steel coupons. Table 1 lists the amount of soil applied and removed for each substrate and coupon.

Table 1. Soil Application and Removal

Substrate	Cleaner	Initial wt	Final wt	% Removed
Steel	GP RTU	0.5026	0.0084	98.33
		0.6240	0.0088	98.59
		0.6378	0.0107	98.32
	GP/Na	0.8401	0.0179	97.87
	Citrate	0.4770	0.0148	96.90
		0.4896	0.0141	97.12
	DFC 23	0.4050	0.0322	92.05
		0.5415	0.0314	94.20
		0.2837	0.0378	86.68
Plastic	GP RTU	0.5826	0.0137	97.65
		0.3137	0.0185	94.10
		0.2974	0.0137	95.39
	GP/Na	0.3319	0.0040	98.79
	citrate	0.3335	0.0062	98.14
		0.3309	0.0023	99.30
	DFC 23	0.5017	0.0323	93.56
		0.4249	0.0265	93.76
		0.6356	0.0282	95.56
Ceramic	GP RTU	0.5050	0.0592	88.28
		0.4624	0.0715	84.54
		1.0148	0.1063	89.53
	GP/Na	0.5274	0.0917	82.61
	citrate	1.0158	0.1057	89.59
		0.4105	0.1156	71.84
	DFC 23	0.3111	0.0577	81.45

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		0.3663	0.0359	90.20
		0.3546	0.0514	85.50

Summary:

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

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Cogent Environmental Solutions	Ecogent General Purpose RTU	100	93.86	☑	
Cogent Environmental Solutions	Ecogent General Purpose with Sodium Citrate	10	92.41	☑	
Cogent Environmental Solutions	DFC 23	0.4	90.33	☑	

Conclusion: All three products were successful in removing at least 85% of the applied soil.