

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2013
 DateRun: 05/22/2013
 Experimenters: Digvijay Devkota
 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 the efficiency of Simple green and Super green cleaners in hucker soil from ceramics, plastics and painted steel coupons.

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 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 in a Gardner Straight Line Washability unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and soaked with 4-6 sprays of cleaning solutions. Each coupon was sprayed 3-5 times with the same cleaning solution. The cleaning unit was run for 20 cycles (~33seconds). At the end of the cleaning; bottom part of the coupons were wiped once with a dry paper towel. Final weights were measured, efficiencies were calculated and recorded.

Results: Both products were effective at removing the Hucker's soil from the three surfaces using manual wiping. There were no statistical difference in the removal rates for both products, each removing more than 92% of the Hucker's soil. The table lists the amount of soil added, the amount remaining after cleaning and the calculated efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
SimpleGreen_Ceramics_HuckerSoil_05_28_13			
	0.1485	0.0013	99.12
	0.1141	0.0177	84.49
	0.0981	0.0078	92.05
SimpleGreen_Plastics_HuckerSoil_05_28_13			
	0.0833	0.0122	85.35
	0.1321	0.0056	95.76
	0.1067	0.0112	89.50
SimpleGreen_PaintedSteel_HuckerSoil_05_28_13			
	0.0483	0.0026	94.62
	0.0720	0.0026	96.39
	0.0491	0.0031	93.69
SuperGreen_Ceramics_Huckersoil_05_28_13			
	0.0789	0.0055	93.03
	0.0821	0.0046	94.40
	0.0705	0.0056	92.06
SuperGreen_Plastics_Huckersoil_05_28_13			
	0.0639	0.0052	91.86
	0.0755	0.0027	96.42
	0.0784	0.0041	94.77
SuperGreen_PaintedSteel_Huckersoil_05_28_13			
	0.0516	0.0039	92.44
	0.0663	0.0035	94.72
	0.0363	0.0078	78.51

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

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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Simple Green	Crystal Simple Green Industrial Cleaner & Degreaser	9.1	92.33	<input checked="" type="checkbox"/>	
NuGeneration Technologies, LLC	Super Green Multipurpose Cleaner & Degreaser	9.1	92.02	<input checked="" type="checkbox"/>	

Conclusion: The supplied cleaning products were success on removing the soils from the surface of Ceramics, Plastics and Painted Steel.