

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021  
 DateRun: 06/09/2021  
 Experimenters: Ross Goding, Edward Judge  
 ClientType: Lab  
 ProjectNumber: Project #4  
 Substrates: Ceramics, Plastic, Painted metal  
 PartType: Coupon  
 Contaminants: Hucker's Soil  
 Cleaning Methods: Manual Wipe  
 Analytical Methods: Gravimetric, Visual  
 Purpose: To test the effectiveness of Pine Sol Multi-Surface Cleaner in the removal of Hucker's Soil from various substrates

Experimental Procedure: A Pine Sol Multi-Surface Cleaner solution was created by mixing 1 part Pine Sol with 64 parts water. Then, 3 coupons of each substrate (ceramic, plastic, painted metal) were collected and initial weights were taken. Hucker's Soil (Creamy Peanut Butter, Salted Butter, Wheat gluten, Egg Yolk, Evaporated milk, DI water, Printer's ink with boiled linseed oil, India Ink, Saline Solution) was applied to each coupon and allowed to air dry for 2 hours. After the 2 hour dry time, the weights of the newly contaminated coupons were measured. All coupons were placed into a Gardner-scrub Abrasion Tester machine. Wypall cleaning cloths were attached to each of the 3 cleaning blocks used for the test. Each Wypall cloth and all coupons received 2 sprays of the Pine Sol Multi-Surface Cleaner solution and the Gardner-scrub Abrasion Tester was run for 20 repetitions, simulating 20 manual wipes. Once cleaning concluded, the cleaned coupons were allowed to air dry for 24 hours. After 24 hours, the weights of the cleaned coupons were measured.

Results:

Cleaner	Substrate	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
Pine Sol Multi- Surface Cleaner	Ceramic	0.0688	0.0051	92.59	96.10	84.08
		0.1228	0.0044	96.42		
		0.1281	0.0055	95.71		
	Plastic	0.1221	0.0004	99.67	86.29	
		0.1286	0.0074	94.25		
		0.1298	0.0455	64.95		
	Painted Metal	0.1313	0.0034	97.41	69.87	
		0.1292	0.0105	91.87		
		0.1112	0.0886	20.32		

Summary:		<b>Substrates:</b> Ceramics, Plastic, Painted metal				
		<b>Contaminants:</b> Hucker's Soil				
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>	
Clorox Company	Pine Sol	1/64	84.08	<input checked="" type="checkbox"/>	Pine Sol was effective in the removal of Hucker's Soil from various substrates.	

Conclusion: Pine Sol Multi-Surface Cleaner was effective in the removal of Hucker's Soil from ceramic, plastic, and painted metal substrates