CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2021
DateRun:	05/24/2021
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 Palmolive Dish Liquid in the removal of Hucker's Soil from various substrates
Experimental Procedure:	A Palmolive dish liquid spray solution was created by mixing 1 part Palmolive Dish Liquid with 20 parts water. Then, 3 coupons of each substrate (ceramic, plastic, painted steel) 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 Palmolive Dish Liquid 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
Palmolive Dish Liquid	Ceramic	0.2295	0.0370	83.88	62.58	75.25
		0.2318	0.1400	39.60		
		0.2668	0.0754	71.74		
	Plastic	0.3014	0.1353	55.11	84.28	
		0.4247	0.0038	99.11		
		0.5574	0.0077	98.62		
	Painted Metal	0.3349	0.1629	51.36	78.90	
		0.3633	0.0262	92.79		
		0.3830	0.0285	92.56		

Summary:

Substrates:	Ceramics, Plastic, Painted metal				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Colgate-Palmolive Company	Palmolive Dish Soap	1/20	75.25	☐	Palmolive Dish Soap was not effective in the removal of Hucker's Soil from various substrates.

Conclusion: In this analysis, the effectiveness of Palmolive Dish Liquid in the removal of Hucker's Soil from ceramic, plastic, and painted steel substrates was tested. Palmolive Dish Liquid was 62.58% effective in removing Hucker's soil from ceramic, 84.28% effective in removing Hucker's soil from Plastic, and 78.9% effective in removing Hucker's soil from painted steel. Overall, Palmolive Dish Liquid was 75.25% effective in removing Hucker's soil from all substrates used.