CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 07/20/2021

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 Murphy Oil Soap in the removal of Hucker's Soil from various substrates.

Experimental Procedure: A Murphy Oil Soap solution was created by mixing 3mL of Murphy Oil Soap with 192 mL of 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 Murphy Oil Soap 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
Murphy Oil Soap	Ceramic	0.1769	0.0134	92.43	89.37	79.00
		0.1620	0.0125	92.28		
		0.2691	0.0682	74.66		
	Plastic	0.4885	0.0092	98.12	74.41	
		0.5012	0.0098	98.04		
		0.3852	0.2809	27.08		
	Painted Metal	0.2305	0.0103	95.53	73.22	
		0.2448	0.0121	95.06		
		0.1287	0.0913	29.06		

Summary:

Substrates:	Ceramics, Plastic, Painted metal				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Colgate-Palmolive Company	Murphy Oil Soap	1:64	79.00	☐	Murphy Oil Soap was not effective in the removal of Hucker's Soil from various substrates.

Conclusion: Murphy Oil Soap showed little success in the removal of Hucker's Soil from ceramic, plastic, and painted metal substrates.