CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2019
DateRun:	04/04/2019
Experimenters:	Sabrina Apel, Justin Rainaud, Lily Green, Ted Kearney, Aaron Wilson
ClientType:	
ProjectNumber:	Project #1
Substrates:	Plastic, Stainless Steel, Wood, Porcelain, Granite
PartType:	Coupon
Contaminants:	Greases, Oil, Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	Evaluate the ability of the three cleaners (E-Mop, Lysol Power Bath Cleaner, Scrubbing Bubbles) on air dried DCC 17 soil on five different substrates (stainless steel, plastic, porcelain, granite, wood) using SLW.
Experimental Procedure:	Three cleaners were compared, E-Mop, Lysol Power Bath Cleaner and Scrubbing Bubbles. The three substrates cleaned were stainless steel, plastic, and porcelain. The contaminant used was DCC 17 soil. The DCC 17 soil was made using 33 wt.% vegetable shortening, 33 wt.% lard, 33 wt.% vegetable oil, and 1 wt. % carbon lampblack. The soil was kept heated between 50-55 °C. The coupons' initial weights were taken and then about 0.5000 g of DCC 17 soil was applied to each coupon. The coupons were sat to dry at room temperature for at least 24 hours. Once dried, the contaminated weights were taken, three coupons of each substrate were placed in the SLW unit, and a KC Wypal reinforced paper towel was attached to the cleaning sled and treated with two sprays of cleaning solution. Each coupon was sprayed twice with the same cleaning solution. The cleaning unit was run for 20 cycles (equivalent of 30 seconds of cleaning). At the end of the cleaning cycle, the coupons were wiped once with a dry paper towel. Coupons dried overnight and final weights were recorded. Efficiencies were calculated and recorded.
Results:	E-Mop

Substrate	Initial wt of cont.	Final wt of cont.	%Cont Removed	% Average
Stainless Steel				
	0.5003	0.0569	88.62	89.59
	0.5123	0.0583	88.61	
	0.5055	0.0428	91.53	
Plastic				
	0.5047	0.0131	97.40	97.10
	0.5088	0.0223	95.62	
	0.5554	0.0096	98.27	
Porcelain				
	0.4914	0.0236	95.20	95.95
	0.5645	0.0228	95.96	
	0.5365	0.0177	96.70	
Granite				
	0.5726	0.0012	99.79	98.72
	0.5809	0.0138	97.62	
	0.5630	0.0071	98.74	
Wood				
	0.5249	0.1303	75.18	65.02
	0.5064	0.3015	40.46	
	0.6517	0.1342	79.41	

Lysol Power Bath Cleaner

Substrate	Initial wt of cont.	Final wt of cont.	%Cont Removed	% Average
Stainless Steel				
	0.5479	0.0533	90.27	94.73

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	0.6386	0.0162	97.46	
	0.5751	0.0204	96.45	
Plastic				
	0.5738	0.0155	97.30	94.66
	0.5814	0.0523	91.00	
	0.4986	0.0215	95.69	
Porcelain				
	0.5103	0.0316	93.81	92.24
	0.5069	0.0362	92.86	
	0.4873	0.0484	90.07	
Granite				
	0.5262	0.0186	96.47	97.20
	0.4924	0.0144	97.08	
	0.6097	0.0118	98.06	
Wood				
	0.5846	0.1514	74.10	73.96
	0.6909	0.1689	75.55	
	0.6681	0.1855	72.23	

Scrubbing Bubbles

Substrate	Initial wt of cont.	Final wt of cont.	%Cont Removed	% Average
Stainless Steel				
	0.5640	0.0480	91.49	90.18
	0.5331	0.0573	89.25	
	0.5850	0.0596	89.81	
Plastic				
	0.6284	0.0497	92.09	90.89
	0.5403	0.0610	88.71	
	0.5033	0.0409	91.87	
Porcelain				
	0.4860	0.0286	94.12	93.32
	0.5319	0.0299	94.38	
	0.5301	0.0453	91.45	
Granite				
	0.5376	0.0360	93.30	93.32
	0.5391	0.0247	95.42	
	0.5402	0.0473	91.24	
Wood				
	0.5769	0.1055	81.71	77.92
	0.6051	0.1520	74.88	
	0.6089	0.1390	77.17	

Summary:

Substrates:	Plastic, Stainless Steel, Wood, Porcelain, Granite
Contaminants:	Greases, Oil, Food

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Thane Direct Inc	E Mop	100	89.28	☑	
Reckitt Benckiser	Lysol Power Bathroom Cleaner	100	90.56	☑	
SC Johnson & Son Inc	Scrubbing Bubbles	100	89.13	☑	

Conclusion:

Lysol Power Bath Cleaner had the highest overall removal percentage for every substrate with a 90.56%, followed by the E-mop cleaner having the second highest overall removal percentage for every substrate with an 89.28% overall removal of contaminant. The least effective cleaner for overall removal of contaminant was Scrubbing Bubbles with an overall removal percentage of 89.13%.