

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021
 DateRun: 06/03/2021
 Experimenters: Nicole Kebler, Anjali Bhagat
 ClientType:
 ProjectNumber: Project #1
 Substrates: Ceramics, Plastic, Stainless Steel
 PartType: Coupon
 Contaminants: Greases
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric, Visual
 Purpose: To test the effectiveness of SIM's daily kitchen cleaner in comparison to Lysol's kitchen cleaner in cleaning DCC-17 from ceramic, plastic, and stainless steel substrates.

Experimental Procedure: Two cleaning products were tested and then compared; SIMS daily kitchen cleaner and Lysol kitchen cleaner. Three ceramic, three plastic, and three stainless steel coupons were obtained and weighed for both of the products being tested. Coupons were then soiled with DCC-17 and allowed to air dry for 24 hours. After 24 hours of aging, a dirty weight was recorded. Coupons were then loaded onto a Gardner-scrub Straight Line Wash unit set to 10 cycles per minute for 20 cycles. Three pumps of cleaner were applied to each of the respective coupons and four pumps of cleaner were applied to the scrubbing blocks. The cleaner was allowed to sit for 30 seconds. Following the 30 seconds of resting, the SLW unit was run to simulate scrub cleaning. Coupons were then removed from the machine and allowed to dry in air for 24 hours. After the drying period, coupons were weighed and a final clean weight was recorded. Effectiveness of the cleaners was determined.

Results:

Cleaner	Substrate	Initial wt. of cont	Final wt. of cont	% Removal	Average
SIMs Kitchen Cleaner	Ceramic	0.1319	-0.005	103.79	70.48%
		1.08837	1.00347	7.8	
		0.1255	0.0002	99.84	
	Stainless Steel	0.1045	0.0056	94.64	97.95%
		0.1288	0.0044	96.58	
		0.1938	-0.0051	102.63	
	Plastic	0.1155	0.0048	95.84	96.25%
		0.1212	-0.0036	102.97	
		0.0975	0.0098	89.95	
Lysol Kitchen Spray Cleaner	Ceramic	0.0891	0.0052	94.16	98.92%
		0.093	0.0004	99.57	
		0.1057	-0.0032	103.03	
	Stainless Steel	0.0717	-0.0991	238.21	149.07%
		0.1756	0.0323	81.61	
		0.2261	-0.0619	127.38	
	Plastic	0.1763	0.0066	96.26	94.96%
		0.1765	0.0085	95.18	
		0.1144	0.0075	93.44	

SIMs Kitchen Cleaner was most effective to clean DCC-17 from stainless steel and plastic substrates, removing an average of 97.95% and 96.35%. The Lysol Kitchen Spray Cleaner was also effective on ceramic substrates, removing an average of 98.92%. However, for stainless steel substrates tested with Lysol Kitchen Spray Cleaner, had excess soil beyond what was added was also removed leading to inflated removal values of 149.07%, this could have been an error with the scale.

Summary:

Conclusion: SIMs Kitchen Cleaner was most effective to clean DCC-17 from stainless steel and plastic substrates, removing an average of 97.95% and 96.35%. The Lysol Kitchen Spray Cleaner was also effective on ceramic substrates, removing an average of 98.92%. However, for stainless steel substrates tested with Lysol Kitchen Spray Cleaner, had excess soil beyond what was added was also removed leading to inflated removal values of 149.07%, this could have been an error with the scale. Next steps are to send the data to the company for further evaluation.