CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2020
DateRun:	09/07/2020
Experimenters:	Zoe Lawson, Nicole Kebler
ClientType:	Lab
ProjectNumber:	Project #1
Substrates:	Ceramics
PartType:	Part
Contaminants:	Greases, Oil, Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric, Performance Test
Purpose:	A non-client test evaluating the effectiveness of solid dish soap against comparative liquid dish soaps using a dish brush to remove ASTM 4009 Soil B from ceramic plates.
Experimental Procedure:	Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Initial weights of eleven clean ceramic plates per dish soap were taken before soiling with six grams of 4009 Soil B (50% All-Purpose Flour, 48% Crisco Shortening, and 2% Olive Oil) and air-dried for 24 hours at room temperature (68˚F). Dirty weights were taken the next day. The dish soaps, both solid and liquid, were placed on a flat surface before swirling a new soap dish brush per product for five seconds to pick up the soap. Four liters of tap water heated to 120°F, which was recorded when poured sequentially into the washing basin. Twenty seconds after the reservoir was prepared, the manual cleaning method began. Each plate was washed at an angle, half-submerged in the water, cleaning both the front and back sides of each plate with the brush in a circular motion for 10 seconds before a one-second rinse with cold tap water and air-dried for 24 hours. This process was repeated for each of the dish soaps. Final weights were taken the next day.

Results:

Cleaner	Initial wt	Cont. wt	Clean wt.	Initial wt of cont.	Final wt of cont.	%Cont Removed	Average % Removal
Ardent Goods Dish Soap	438.98	441.39	439.15	2.4100	0.1700	92.95	95.19
	480.75	483.10	480.83	2.3500	0.0800	96.60	
	428.11	430.87	428.22	2.7600	0.1100	96.01	
	459.92	462.51	459.97	2.5900	0.0500	98.07	
	433.87	436.78	433.90	2.9100	0.0300	98.97	
	466.05	468.80	466.09	2.7500	0.0400	98.55	
	417.47	420.12	417.60	2.6500	0.1300	95.09	
	465.12	467.55	465.18	2.4300	0.0600	97.53	
	401.54	404.13	401.80	2.5900	0.2600	89.96	
	397.48	399.79	397.58	2.3100	0.1000	95.67	
	453.77	456.29	453.83	2.5200	0.0600	97.62	
Dawn Liquid Dish Soap	429.90	432.30	430.09	2.4000	0.1900	92.08	95.98
	468.17	470.68	468.28	2.5100	0.1100	95.62	
	436.58	438.96	436.64	2.3800	0.0600	97.48	
	464.19	466.71	464.32	2.5200	0.1300	94.84	
	468.93	471.44	468.92	2.5100	-0.0100	100.40	
	425.55	428.25	425.59	2.7000	0.0400	98.52	
	421.92	424.50	422.00	2.5800	0.0800	96.90	
	410.67	413.53	410.79	2.8600	0.1200	95.80	
	446.79	449.20	446.87	2.4100	0.0800	96.68	
	449.85	452.36	449.94	2.5100	0.0900	96.41	
	469.38	471.73	469.60	2.3500	0.2200	90.64	
Joy Liquid Dish Soap	438.98	441.20	439.06	2.2200	0.0800	96.40	96.33
	480.75	482.84	480.78	2.0900	0.0300	98.56	
	428.11	430.39	428.16	2.2800	0.0500	97.81	
	459.92	461.95	460.07	2.0300	0.1500	92.61	
	433.87	436.06	433.88	2.1900	0.0100	99.54	
	466.05	468.41	466.12	2.3600	0.0700	97.03	
	417.47	419.68	417.60	2.2100	0.1300	94.12	

CLEANING LABORATORY EVALUATION SUMMARY

	465.12	466.49	465.16	1.3700	0.0400	97.08	
	401.54	403.66	401.68	2.1200	0.1400	93.40	
	397.48	399.54	397.58	2.0600	0.1000	95.15	
	453.77	456.35	453.91	2.5800	0.1400	94.57	
Mrs. Meyers Dish Soap	429.90	431.93	429.98	2.0300	0.0800	96.06	95.77
	468.17	470.40	468.28	2.2300	0.1100	95.07	
	436.58	438.32	436.67	1.7400	0.0900	94.83	
	464.19	466.51	464.25	2.3200	0.0600	97.41	
	468.93	471.12	469.02	2.1900	0.0900	95.89	
	425.55	427.28	425.59	1.7300	0.0400	97.69	
	421.92	423.92	422.07	2.0000	0.1500	92.50	
	410.67	412.91	410.70	2.2400	0.0300	98.66	
	446.79	449.04	446.97	2.2500	0.1800	92.00	
	449.85	452.22	450.03	2.3700	0.1800	92.41	
	469.38	471.76	469.50	2.3800	0.1200	94.96	

Summary:

Substrates:	Ceramics				
Contaminants:	Greases, Oil, Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Ardent Goods	Solid Dish Soap	100%	95.19	☑	
Procter & Gamble	Dawn Ultra Dishwasher Liquid Soap	100%	95.98	☑	
Procter & Gamble	Joy Dishwashing Soap	100%	96.33	☑	
Mrs Myers Clean Day	Mrs Meyers Liquid Dish Soap	100%	95.77	☑	

Conclusion: All products were considered effective at removing 4009 Soil B from ceramic plates using a dish brush.