CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	07/27/2014
Experimenters:	Loc Nguyen
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #3
Substrates:	Ceramics
PartType:	Coupon
Contaminants:	Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Visual
Purpose:	To measure the foam stability of light-duty hand dishwashing detergent products in the presence of artificially soiled plates.

Experimental Procedure:

Soiled dinner plates are washed by hand in solutions of hand dishwashing detergents under standardized conditions until an end point of near disappearance of the foam is reached, after which the number of plates washed is compared to the number of plates washed using a standard product. The guide, as now constituted, is not suitable for ranking of hand dishwashing products, since no basis is available at this time for correlation of the foam stability of these products using any particular food soil or combination of soils with consumers' ranking of performance. Materials used included, plain white glazed dinner plates in sound condition 8 to 9 in. in diameter, with 6 1⁄4 to 6 1⁄2 in.) indented bottom; plastic dishpan (conventional) with bottom diameter = 11 in., top diameter = 14 1⁄2 in., depth = 5 1⁄2 in; sponge (any conventional brand); a reservoir of 4-L capacity, that can be readily loaded with test water and that can deliver its contents through a 3⁄8-in. (inside diameter) drainage tip with an open-shut style to permit full flow immediately upon opening.

The soil mixture used was based on the ASTM soil B: Flour - 50 %; Shortening - 48 %; Olive oil - 2 %. The shortening and the olive oil were warmed to 100°F. Then the flour was slowly added while mixing with a spatula and warming to 120°F. The temperature was held at 120+/-3°F) while soiling dishes. In order to prevent soil from melting off plates, the wash temperature was not allowed to exceed 117°F. Prewashed plates were coated with 2 grams of soil using a spatula and then spread over the surface of the plate using gloved finger. Soiled plates were then stacked in convenient sized piles (20 to 25 plates). The top plate of each pile was inverted to prevent drying out of soil. After soiling the last plate of each stack, the residual soil on the finger is removed by wiping on the sides of the stacked, soiled plates. Soiled plates were washed the same day as soiling.

Four liters of test water at desired temperature was placed in the reservoir. The standard temperature is at 40 degrees Celsius. The sponge was placed in the wash water and two squirts of the product were applied. The first dish was washed beginning at 30 seconds after the soap addition was completed. One dish was washed at a time, both front and back, using a rotating motion with the sponge while keeping the dish half submerged in an angular position with the bottom of the dishpan. A soiled dish was washed every 30 s and the process was continued until the sponge is observed to have no white soap foam left after a squeeze.

Chemistries Evaluated: Dawn Platinum dishwashing cleaner, Dawn Gentle Clean dish washing cleaner, Palmolive Original dishwashing cleaner, Palmolive Oxy washing cleaner, Ajax Triple Action dishwashing cleaner, Brand Buzz Moisturizing Shea & Aloe dish washing cleaner, Brand Buzz Basic Citrus Sage dishwashing cleaner, Brand Buzz Oxy dish washing cleaner, Brand Buzz Basic Pink Grapefruit dishwashing cleaner, Brand Buzz Heavy Duty 409 Lavender dish washing cleaner

Results:

Product	Start Temp	End Temp	# of Plates	Tester
Dawn Platinum	40.1	38.7	2	1
Dawn Platinum	40.8	39	1	1
Dawn Platinum	41	38.8	2	1
Dawn Platinum	41.2	38	3	2
Dawn Platinum	40	37.8	2	2
Dawn Platinum	40.1	38.2	3	2
Average	40.5	38.4	2.2	
Product	Start Temp	End Temp	# of Plates	Tester
Dawn Gentle Clean 39.9	38		2	1
Dawn Gentle Clean 40.5	37		3	1
	38.2		2	1

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Dawn Gentle Clean 40.3				
Dawn Gentle Clean 39.7	37		2	2
Dawn Gentle Clean 40.3	37.5		3	2
Dawn Gentle Clean 39.9	37.2		2	2
Average	40.1		37.5	2.33
Product	Start Temp	End Temp	# of Plates	Tester
Palmolive Original 40.2	37.7		2	1
Palmolive Original 40.6	38.6		2	1
Palmolive Original 40.1	38		3	1
Palmolive Original 40.9	38.8		2	2
Palmolive Original 40.8	38		3	2
Palmolive Original 40.3	38.2		2	2
Average	40.5		38.2	2.33
Product	Start Temp	End Temp	# of Plates	Tester
Palmolive Oxy	40.5	38	1	1
Palmolive Oxy	40.5	38.7	1	1
Palmolive Oxy	40	38	1	1
Palmolive Oxy	40.3	38.2	1	2
Palmolive Oxy	40.5	38.2	1	2
Palmolive Oxy	40.7	38.1	1	2
Average	40.4	38.2	1	
Product	Start Temp	End Temp	# of Plates	Tester
Ajax Triple Act	39.7	37	3	1
Ajax Triple Act	40.5	38	2	1
Ajax Triple Act	40	38	2	1
Ajax Triple Act	40.7	38.1	2	2
Ajax Triple Act	40.7	38.2	2	2
Ajax Triple Act	40.3	38.1	2	2
Average	40.3	37.9	2.2	
Product		Start Temp	End Temp	# of Plates
Brand Buzz Moisturizing Shea & Aloe	41	39	1	1
Brand Buzz Moisturizing Shea & Aloe	40.2	39	1	1
Brand Buzz Moisturizing Shea & Aloe	40.9	38.6	1	1
Brand Buzz Moisturizing Shea & Aloe	40.1	37.9	1	2
Brand Buzz Moisturizing Shea & Aloe	40.2	38	1	2
Brand Buzz Moisturizing Shea & Aloe	40.3	38	1	2

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Average		40.5	38.4	1
Product		Start Temp	End Temp	# of Plates
Brand Buzz Basic Citrus Sage	40	37.9	1	1
Brand Buzz Basic Citrus Sage	40.6	39	1	1
Brand Buzz Basic Citrus Sage	41.2	39.2	1	1
Brand Buzz Basic Citrus Sage	40.3	38	1	2
Brand Buzz Basic Citrus Sage	40.2	38.1	1	2
Brand Buzz Basic Citrus Sage	40.1	38.1	1	2
Average		40.4	38.4	1
Product	Start Temp	End Temp	# of Plates	Tester
Brand Buzz Oxy	39	36	1	1
Brand Buzz Oxy	41.2	39.2	1	1
Brand Buzz Oxy	40.6	39.3	1	1
Brand Buzz Oxy	40.1	37.7	1	2
Brand Buzz Oxy	40	37.9	1	2
Brand Buzz Oxy	39.8	37.2	1	2
Average	49.1	37.9	1	
Product		Start Temp	End Temp	# of Plates
Brand Buzz Basic Pink Grapefruit	40.7	38	1	1
Brand Buzz Basic Pink Grapefruit	39.9	37.1	1	1
Brand Buzz Basic Pink Grapefruit	40.6	38.1	1	1
Brand Buzz Basic Pink Grapefruit	40.1	38.9	1	2
Brand Buzz Basic Pink Grapefruit	40.1	37.9	1	2
Brand Buzz Basic Pink Grapefruit	40.1	38.1	1	2
Average		40.3	38	1
Product	Start Temp	End Temp	# of Plates	Tester
Brand Buzz Heavy Duty 409 Lavender	40.2	37.2	1	1
Brand Buzz Heavy Duty 409 Lavender	39.7	38	1	1
Brand Buzz Heavy Duty 409 Lavender	39.9	37.1	1	1
Brand Buzz Heavy Duty 409 Lavender	40.1	38.1	1	2
Brand Buzz Heavy Duty 409 Lavender	39.8	37.1	1	2
Brand Buzz Heavy Duty 409 Lavender	39.9	38	1	2
Average		39.9	37.6	1

Summary

Dawn Platinum	2.17 plates

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Dawn Gentle Clean	2.33 plates
Palmolive Original	2.33 plates
Palmolive Oxy	1.00 plates
Ajax Triple Action	2.17 plates
Brand Buzz Moisturizing Shea & Aloe	1.00 plates
Brand Buzz Basic Citrus Sage	1.00 plates
Brand Buzz Oxy	1.00 plates
Brand Buzz Basic Pink Grapefruit	1.00 plates
Brand Buzz Heavy Duty 409 Lavender	1.00 plates

Summary:

Substrates:	Ceramics
Contaminants:	Food

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Fisher Scientific	Absolute Ethanol	0	0.00	☐	
Procter & Gamble	Dawn Platinum	0.1	0.00	☐	2.17 plates
Procter & Gamble	Dawn Gentle Clean	0.1	0.00	☑	2.33 plates
Colgate-Palmolive Company	Oxy Power Degreaser	0.1	0.00	☐	1 plate
Colgate-Palmolive Company	Palmolive Dish Soap	0.1	0.00	☑	2.33 plates
Procter & Gamble	Ajax Triple Action Orange Dish & Hand Soap	0.1	0.00	☐	2.17 plates
Brand Buzz	Moisturizing Shea & Aloe	0.1	0.00	☐	1 plate
Brand Buzz	Basic Citrus Sage Dishwash	0.1	0.00	☐	1 plate
Brand Buzz	Brand Buzz Oxy Dishwashing	0.1	0.00	☐	1 plate
Brand Buzz	Brand Buzz Basic Pink Grapefruit Dishwash	0.1	0.00	☐	1 plate
Brand Buzz	Brand Buzz Heavy Duty 409 Lavender	0.1	0.00	☐	1 plate

Conclusion:

The foam stability of Dawn Platinum, Dawn Gentle Clean, Palmolive Original and Ajax Triple Action had double the number of dishes being cleaned on average than that of any Brand Buzz dish cleaning products. After squeezing the sponge, it was clear that the white foam in the soap was gone when it was observed that the soap itself only secreted orange soil scum.