CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2025
DateRun:	08/28/2025
Experimenters:	Amelia Wagner
ClientType:	Cleaning Equipment Mfr
ProjectNumber:	Project #4
Substrates:	Ceramics, Glass/Quartz
PartType:	Coupon
Contaminants:	Food
Cleaning Methods:	Mechanical Agitation
Analytical Methods:	Black light, Visual
Purpose:	To compare the amount of filming and spotting on glass created during the wash cycle of the Force of Nature Dish Tabs and a comparative product.

Experimental Procedure:

Method Summary: Glasses are put through multiple wash cycles in a mechanical dishwasher in the presence of food soil and the levels of spotting and filming allowed by the detergents are compared visually. The testing methods follow the ASTM D3556 standard.

Experimental Procedure: 8 glasses were placed evenly in the top rack of the dishwasher with 4 on each side. 6 knives, 6 forks, and 6 spoons were placed in the silverware basket of the dishwasher. 6 dinner plates were soiled with 6.66 grams of the standard food soil each. The standard food soil consisted of 80% volume of margarine and 20% volume of powdered whole milk. The food soil was applied to the plates while the margarin was in a liquified state. The plates were then loaded evenly into the bottom rack of the dishwasher. The plates, glasses, and silverware were cleaned through a 1-hour dishwashing cycle with one tablet or detergent pod. After the first dishwashing cycle, 6.66 grams of standard food soil was reapplied to each plate. The plates were then put back into the dishwasher for another 1-hour dishwashing cycle with an additional tablet or detergent pod. This process was repeated until the dishes, glasses, and silverware had been through 5 1-hour dishwashing cycles. After the last washing cycle, the glasses were visually observed in a black box with a blacklight flashlight to identify any filming or spotting.

Visual Observation Rankings:

Rating	Cleanliness Level
1	No filming/ spotting
2	Slight filming/ spotting
3	Noticeable filming/spotting
4	Considerable filming/spotting
5	Severe filming/ spotting

Water Hardness: 63ppm

Temperature: Each Washing cycle reached a max temperature of 110F. The contents of the dishwashing machine were allowed to cool to 75F before observations were made.

Results:

Cleaner	Glass #	Film	AVG Film	Spotting	AVG Spotting
Cascade Complete Dishwashing Detergent Pod	1	1	1	2	1.75
	2	1		1	
	3	1		2	
	4	1		2	
	5	1		2	
	6	1		1	
	7	1		2	
	8	1		2	
Force of Nature ADW Tablet	1	2	1.56	2	1.8
	2	1		2	
	3	1.5		2	
	4	2		2	

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5	1	2
6	2	1
7	2	2
8	1	1.5

The glasses that were cleaned with the Cascade Complete Dishwashing Detergent Pods were consistently free of filming, but regularly showed slight spotting. The glasses cleaned with the Force of Nature ADW Tablet were less consistent in filming, where over half of the glasses showed slight filming. The spotting of the glasses cleaned with the Force of Nature ADW Tablets was relatively equivalent to the rate of spotting observed from the Cascade Detergent Pods

Summary:

Substrates:	Ceramics, Glass/Quartz				
Contaminants:	Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Procter & Gamble	Cascade Complete (Dawn)	1 pod		☑	
Healthier Cleaning Innovations	Force of Nature Dish Washing Tab	1 tab		☑	

Conclusion:

The Cascade Complete Dishwashing Detergent Pods were effective in preventing any filming of the glasses. The Force of Nature ADW Tablets were less effective in preventing filming as it prevented filming of 3 out of 8 glasses. The remaining 5 glasses showed low levels of filming. The Cascade Complete Dishwashing Detergent Pods were more effective in preventing filming of glasses than the Force of Nature ADW Tablets. Both products were observed to cause consistent spotting on glasses at a similar rate at similar levels of spotting. Because neither cleaning product produced an average filming or average spotting score greater than 2, both products were considered to be successfully effective.