

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2007

DateRun: 11/27/2007

Experimenters: Shweta Bansal

ClientType: Lab

ProjectNumber: Project #1

Substrates: Ceramics, Fiberglass, Chrome

PartType: Coupon

Contaminants: Films, Soaps

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: Laboratory evaluations of alternative cleaning products

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Several "do-it-yourself" home formulations were evaluated for performance on several substrates and typical soils for bathroom cleaning.

Cleaning: Spray cleaner on the coupons  
10 secs Manual Wipe cleaning at 130 F  
Contaminant SSL Soil 1 - Bathroom Soil  
Substrate 2"x 4"x 0.06  
Chrome Plated Coupons  
Ceramic Coupons  
Fiberglass Coupons (3"x 4.5"x 0.125")  
Bathroom Cleaners -Tub & Tile Cleaners  
Home Formulation 22 - Baking soda, sprinkle it on the tub/tile and scrub with a damp sponge.  
Home Formulation 23 - Vinegar and baking soda will remove film buildup on the tub. Apply vinegar on a sponge and wipe tiles. Use baking soda as you would scouring powder. Rinse thoroughly.  
Home Formulation 24 - ¼ cup vinegar in gallon water to use on surfaces that have films or need more cleaning.  
Home Formulation 25 - Baking soda and water paste to clean grout. Put paste on grout with toothpaste or sponge, scrub grout and then rinse and throw rest of paste away  
Home Formulation 26 - Rub area to be cleaned with half a lemon dipped in borax. Rinse well and dry with soft cloth  
Home Formulation 27 - Baking soda and Murphy's oil. Use baking soda in place of scouring powder. Sprinkle baking soda on wet tub and rub. Then add some soap and continue scrubbing. Rinse well.

## Results:

Product	Substrate	Average (%)
Formulation 22	Chrome Plated	-135.31
	Ceramic	-114.7
	Fiberglass	-196.55
Formulation 23	Chrome Plated	-168.64
	Ceramic	-172.14
	Fiberglass	-46.52
Formulation 24	Chrome Plated	82.24
	Ceramic	46.93
	Fiberglass	99.44
Formulation 25	Chrome Plated	10.27
	Ceramic	-346.15
	Fiberglass	-250.63
Formulation 26	Chrome Plated	-20.44
	Ceramic	-261.92
	Fiberglass	-246.5

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Formulation 27	Chrome Plated	-110.2
	Ceramic	-208.47
	Fiberglass	-166.09

Summary:

<b>Substrates:</b>		Ceramics, Fiberglass, Chrome				
<b>Contaminants:</b>		Films, Soaps				
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>	
No Specific Vendor	Home Formulation 22	100	-145.85	<input type="checkbox"/>		
No Specific Vendor	Home Formulation 23	100	-129.10	<input type="checkbox"/>		
No Specific Vendor	Home Formulation 24	100	76.20	<input checked="" type="checkbox"/>		
No Specific Vendor	Home Formulation 25	100	-195.50	<input type="checkbox"/>		
No Specific Vendor	Home Formulation 26	100	-176.29	<input type="checkbox"/>		
No Specific Vendor	Home Formulation 27	100	-162.59	<input type="checkbox"/>		

Conclusion:

Many of the mixtures left behind a lot of residue when using the standard laboratory procedures for commercial cleaning products. Modification of the cleaning process may improve the effectiveness of these "do-it-yourself" formulations. Formulation 24 was the only product to remove over 75% of the bathroom soil using manual wiping.