CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2007
DateRun:	11/26/2007
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:

Substrates:	Ceramics, Fiberglass, Chrome				
Contaminants:	Films, Soaps				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
No Specific Vendor	Home Formulation 22	100	-145.85	☐	
No Specific Vendor	Home Formulation 23	100	-129.10	☐	
No Specific Vendor	Home Formulation 24	100	76.20	☑	
No Specific Vendor	Home Formulation 25	100	-195.50	☐	
No Specific Vendor	Home Formulation 26	100	-176.29	☐	
No Specific Vendor	Home Formulation 27	100	-162.59	☐	

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.