CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2007
DateRun:	11/12/2007
Experimenters:	Shweta Bansal
ClientType:	Lab
ProjectNumber:	Project #1
Substrates:	Ceramics, Plastic, Steel
PartType:	Coupon
Contaminants:	Hucker's Soil
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 all purpose cleaning. All Purpose Cleaner Formulations:

Home Formulation 1 - Dissolve 4 tbls baking soda in 1 qt warm water for a general cleaner

Home Formulation 2 - Vinegar and salt, mix together into a paste for a good surface cleaner (another version is mix salt and water together with a little vinegar)

Home Formulation 3 - Liquid castile soap (small amount) and baking soda/borax with lots of water for floors walls or counters

Home Formulation 4 - Liquid castile soap (medium amount) and baking soda/borax for tubs, sinks, cat boxes or anything that can be well rinsed.

Home Formulation 5 - Baking soda and water, make a paste for all purpose cleaner

Home Formulation 6 - 3 tbsp vinegar, ½ tsp washing soda, ½ tsp vegetable based liquid soap (Murphy's), 2 cups hot 2cups hot water and put in spray bottle or bucket. Apply and wipe clean. General cleaner

Home Formulation 7 - 2 tbsp borax, ¼ cup lemon juice, 2 cups hot water. Combine in spray bottle and use as all purpose

Home Formulation 8 -Fill a spray bottle with ½ part vinegar and ½ part water. Add some lemon juice for scent

Home Formulation 9 - Mix liquid soap with 1 tbs of baking soda. Add lemon juice and water.

Cleaning: Spray cleaner on the coupons
30 secs Manual Wipe
Cleaning at 68 F
Contaminant: Huckers Soil
Substrate: 2"x 4"x 0.06"
Ceramic Coupons
Painted Steel Coupons
Plastic Coupons

Results:

Product	Average (%)
Home Formulation 1	
Ceramic	26.91
Painted Steel	137.41
Plastic	48.58
Home Formulation 2	
Ceramic	-27.84
Painted Steel	-109.96
Plastic	-349.84
Home Formulation 3	
Ceramic	-33.81
Painted Steel	-24.61
Plastic	-22.16
Home Formulation 4	

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Ceramic	-58.05
Painted Steel	-192.68
Plastic	-330.51
Home Formulation 5	
Ceramic	-34.23
Painted Steel	-423.13
Plastic	
Home Formulation 6	
Ceramic	20.99
Painted Steel	29.37
Plastic	-7.52
Home Formulation 7	
Ceramic	34.97
Painted Steel	75.05
Plastic	368.76
Home Formulation 8	
Ceramic	18.86
Painted Stee	45.73
Plastic	-8.29
Home Formulation 9	
Ceramic	40.58
Painted Steel	55.35
Plastic	92.13

Summary:

Substrates:	Ceramics, Plastic, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
No Specific Vendor	Home Formulation 1	100	70.97	☑	
No Specific Vendor	Home Formulation 2	100	-162.55	☐	
No Specific Vendor	Home Formulation 3	100	-26.86	☐	
No Specific Vendor	Home Formulation 4	100	-193.75	☐	
No Specific Vendor	Home Formulation 5	100	-278.68	☐	
No Specific Vendor	Home Formulation 6	100	14.28	☐	
No Specific Vendor	Home Formulation 7	100	159.59	☐	
No Specific Vendor	Home Formulation 8	100	18.77	☐	
No Specific Vendor	Home Formulation 9	100	62.69	☑	

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.

Home formulation 1 and 9 showed some signs of effectiveness, removing over 60% of the all-purpose soil.