CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2009

DateRun: 05/05/2009

Experimenters: Junhee Cho

ClientType: Lab

ProjectNumber: Project #1

Substrates: Ceramics, Plastic, Stainless Steel, Steel

PartType: Part

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: DIY test for all purpose cleaning with water rinsing

Experimental Procedure:

Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning.

A “Do-it-yourself" home formulation was evaluated for performance on several substrates and a soil for all purpose cleaning. Rinsing was added to improve residue removal.

Cleaning: Spray cleaner on the coupons
30 seconds of manual wiping using a Garnder Straight-line washability unit at room temperature. After cleaning, coupons were sprayed with water and wiped dry. Parts were analyzed using visual and gravimetric techniques.
Contaminant SSL Soil 3 – Hucker’s Soil
Substrate 2"x 4"x 0.06" for ceramic, painted steel, plastic and stainless steel.

All Purpose Formulations
Home Formulation 7 - 2 tbsp borax, ¼ cup lemon juice, 2 cups hot water - combine in spray bottle

Results:

Cleaner	Substrate	Initial Wt.	Final Wt.	% Removed
All Purpose DIY Formulation	Ceramic - 20 cycles	0.2026	0.0426	78.97
		0.2532	0.0498	80.33
		0.1901	0.0513	73.01
All Purpose DIY Formulation	Painted steel - 60 cycles	0.1851	0.0037	98
		0.2104	0.0096	95.44
		0.2569	0.0072	97.2
All Purpose DIY Formulation	Plastic - 20 cycles	0.098	0.0063	93.57
		0.1022	0.0021	97.95
		0.1142	0.0025	97.81
All Purpose DIY Formulation	Stainless steel - 20 cycles	0.1235	0.0122	90.12
		0.1104	0.0029	97.37
		0.1787	0.0063	96.47
All Purpose DIY Formulation	Ceramic - rinse	0.2026	0.0279	86.23
		0.2532	0.0412	83.73
		0.1901	0.028	85.27
All Purpose DIY Formulation	Painted steel - rinse	0.1851	-0.0043	102.32
		0.2104	0.0039	98.15
		0.2569	-0.0034	101.32

Summary:

Substrates:	Ceramics, Plastic, Stainless Steel, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
No Specific Vendor	Home Formulation 7	100	91.35	☑	

Conclusion:

The DIY formulation #7 was previously ineffective on the Hucker’s soil when used without a rinse. Each of the substrates cleaned and rinsed during this trial were cleaned above 85% with only one surface needing longer cleaning time. The plastic surface required 60 cycles of cleaning as compared to 20 cycles for the other surfaces. In addition, the plastic coupon was improved with a longer rinse process. The ceramic surfaces also needed additional rinsing time to achieve the 85% effective level.