

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2013
 DateRun: 11/15/2013
 Experimenters: Loc Nguyen, Jonathan Oljey, George Liang
 ClientType: Cleaning Equipment Mfr
 ProjectNumber: Project #1
 Substrates: Ceramics, Plastic, Steel
 PartType: Coupon
 Contaminants: Hucker's Soil
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric
 Purpose: To evaluate three products for all purpose cleaning

Experimental Procedure: Plastic, Ceramic, and painted metal coupons were weighed and then coated with Hucker's soil using a hand held swab and allowed to dry for 2 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added.

Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and soaked with 1 spray of cleaning solutions. Each coupon was sprayed once with the same cleaning solution. The cleaning unit was run for 20 cycles (~33 seconds). At the end of the cleaning, final weights were recorded and efficiencies were calculated.

The Toucan Eco product was run through two cycles using 1 gram of salt and 1.5 liters of water at 120 F. Resulting free chlorine level and pH were recorded. The supplied NaOH was used at room temperature and 120 F.

ChemistriesEvaluated: Toucan Cleaner (1 g salt/1.5 L - pH 8-9; Free Chlorine 100 ppm); NaOH at room temp and 120F;

Results: The heated NaOH solution provided removed more than 80% of the Hucker's soil from the surfaces using manual wiping. At room temperature, it removed 77% of the soil. The Toucan Eco heated removed just under 70% of the soil. The table lists the amount of soil added, the amount remaining after cleaning and the calculated efficiency for each coupons cleaned. Photographs of cleaned coupons are included.

Cleaner	Initial wt	Final wt	% Removed
Toucan NaOH RT - ceramic			
	1.0665	0.2017	81.09
	0.4295	0.1510	64.84
	0.2535	0.0211	91.68
Toucan NaOH RT - plastic			
	0.4464	0.0987	77.89
	0.2737	0.0873	68.10
	0.3603	0.0321	91.09
Toucan NaOH RT - painted metal			
	0.1508	0.0176	88.33
	0.1948	0.0252	87.06
	0.2323	0.1195	48.56
Toucan NaOH 120 - ceramic			
	1.1937	0.1619	86.44
	1.4842	0.1549	89.56
	1.2016	0.1672	86.09
Toucan NaOH 120 - plastic			
	0.4427	0.0724	83.65
	0.3740	0.0636	82.99
	0.6448	0.3282	49.10
Toucan NaOH 120 - painted metal			

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	0.2524	0.0360	85.74
	0.3864	0.0337	91.28
	0.2967	0.0323	89.11
Toucan Eco 120 - ceramic			
	0.5580	0.2960	46.95
	0.6318	0.3693	41.55
	0.3813	0.1199	68.55
Toucan Eco 120 - plastic			
	0.3432	0.0593	82.72
	0.3887	0.0723	81.40
	0.5682	0.1012	82.19
Toucan Eco 120 - painted metal			
	0.3014	0.1388	53.95
	0.3861	0.0358	90.73
	0.3300	0.0734	77.76
Water - ceramic			
	1.1275	0.2871	74.54
	0.4635	0.1552	66.52
	0.5174	0.3024	41.55
Water - painted metal			
	0.7020	0.2501	64.37
	0.7048	0.2015	71.41
	0.9047	0.3218	64.43
Water - plastic			
	0.7941	0.2571	67.62
	0.8842	0.3573	59.59
	1.0230	0.4273	58.23

Summary:

Substrates:		Ceramics, Plastic, Steel			
Contaminants:		Hucker's Soil			
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Toucan	Toucan Eco	100	69.63	<input type="checkbox"/>	
Toucan	Toucan NaOH	100	77.63	<input type="checkbox"/>	
Toucan	Toucan NaOH	100	82.66	<input checked="" type="checkbox"/>	
Water	Water	100	63.14	<input type="checkbox"/>	

Conclusion:

Using manual wipe, the three products were more effective in removing Hucker's Soil than water.