CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	11/12/2014
Experimenters:	Loc Nguyen, George Liang
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Stainless Steel
PartType:	Coupon
Contaminants:	Hucker's Soil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate three supplied products for all purpose cleaning following GS 37 requirements

Experimental Procedure:

Two of three supplied cleaning products were diluted with DI water at room temperature to vendor recommended concentration for all purpose cleaning (32:1 and 128:1). The third product was prepared following the specified procedure - oxygenating cold tap water for about 10 minutes.

Preweighed ceramic, plastic G-10 and painted steel coupons were coated with Hucker's Soil Formulation (Jif Creamy Peanut Butter,Salted Butter, Arrowhead Mills stone ground wheat flour, Egg Yolk, Evaporated milk, Distilled water, Printer's ink with boiled linseed oil, Shaws saline solution) using a hand held swab and allowed to dry for 24 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 solution. 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, coupons were wiped once with a dry paper towel. Final weights were recorded, efficiencies were calculated and recorded.

Chemistries Evaluated: Elevance 10%, Elevance 50%, Elevance 100%

Results:

Cleaner	Initial wt	Final wt	% Removed
ElevanceCleaner_10%_HuckerSoil_StainlessSteel			
	0.6828	0.1750	74.37
	0.6329	0.0605	90.44
	0.4695	0.0147	96.87
ElevanceCleaner_50%_HuckerSoil_StainlessSteel			
	0.5505	0.0614	88.85
	0.6014	0.0352	94.15
	0.6153	0.0447	92.74
ElevanceCleaner_100%_HuckerSoil_StainlessSteel			
	0.6527	0.0669	89.75
	0.6230	0.0558	91.04
	0.7770	0.0656	91.56

Summary:

Substrates:	Stainless Steel
Contaminants:	Hucker's Soil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Elevance Renewable Sciences Inc	Elevance CleanTM 1200	10	87.23	☑	
Elevance Renewable Sciences Inc	Elevance CleanTM 1200	50	91.91	☑	
Elevance Renewable Sciences Inc	Elevance CleanTM 1200	100	90.78	☑	

Conclusion:

Each of the concentrations proved effective at cleaning the substrate. The 50% and 100% dilutions showed similar levels of cleaning, while the 10% dilution performed the worst.