CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014

DateRun: 11/19/2014

Experimenters: George Liang, Francisco Abreau

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Waxes

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate supplied product for beeswax removal from stainless steel surfaces

Experimental Procedure: Preweighed stainless steel coupons were coated with melted Beeswax using a handheld swab and allowed to dry for 10 minutes at room temperature. The contaminated coupons were then weighed again to determine the amount of soil added. Three coupons per cleaner used 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	% Remove	%Average
10% Elevance				
	-0.0402	0.1104	374.63	
	0.1546	0.4419	-185.83	
	0.3504	0.3325	5.11	64.63
50% Elevance				
	0.5118	0.3538	30.87	
	0.3878	0.3580	7.68	
	0.1969	0.3091	-56.98	-6.14
100% Elevance				
	0.3189	0.3030	4.99	
	0.4135	0.1240	70.01	
	0.3529	0.2301	34.80	36.60

Summary:

Substrates:	Stainless Steel
Contaminants:	Waxes

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Elevance Renewable Sciences Inc	Elevance CleanTM 1200	10	64.63	☐	
Elevance Renewable Sciences Inc	Elevance CleanTM 1200	50	-6.14	☐	
Elevance Renewable Sciences Inc	Elevance CleanTM 1200	100	36.60	☐	

Conclusion: None of the cleaners supplied performed at a satisfactory level of 85% cleaning efficiency for removing beeswax. The cleaner that removed the most was surprisingly the Elevance 10% solution which removed 64.6% of all the contaminants. The next best cleaner turned out to be the Elevance 100% solution which removed only 36.6% of the beeswax. The worst cleaner was found to be the Elevance 50% solution which barely removed any of the beeswax.