CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2013

DateRun: 10/29/2013

Experimenters: Junhee Cho, Loc Nguyen

ClientType: Cleaning Equipment Mfr

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Oil, Food

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate three supplied products for all purpose cleaning

Experimental Procedure: Aluminum and Chrome coupons were weighed and then coated with vegetable oil soil using a hand held swab and then aged in the oven at 190 degree Celcius for 5 minutes. Then the soil was allowed to cool to room temperature and weighted to determine the amount of soil added. Then 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.

ChemistriesEvaluated: Toucan Cleaner (1 g salt/1.5L); Proforce Pink 100%; Dawn Ultra Apple .1%;

Results: Free Chlorine level was measured using test strips and recorded to be 50-100 ppm. The pH of the solution was between 8 and 9.
All three products worked well on the aged light oil using manual cleaning.

Cleaner	Initial wt	Final wt	% Removed	Ave % Removed	Product Ave
Toucan_Aluminum_Oil					95.84
	0.2072	0.0101	95.13		
	0.2389	0.0064	97.32		
	0.2657	0.0058	97.82	96.75	
Toucan_Chrome_Oil					
	0.2862	0.0153	94.65		
	0.1325	0.0081	93.89		
	0.2702	0.0101	96.26	94.93	
Pro-Force Pink_Aluminum_Oil					97.40
	0.2365	0.0062	97.38		
	0.2206	0.0065	97.05		
	0.3397	0.0058	98.29	97.57	
Pro-Force Pink_Chrome_Oil					
	0.2505	0.0063	97.49		
	0.2754	0.0067	97.57		
	0.1557	0.0052	96.66	97.24	
Dawn Ultra Apple_Aluminum_Oil					96.83
	0.2978	0.0062	97.92		
	0.1697	0.0056	96.70		
	0.1312	0.0061	95.35	96.66	
Dawn Ultra Apple_Chrome_Oil					
	0.1719	0.007	95.93		
	0.1988	0.0063	96.83		
	0.4420	0.0078	98.24	97.00	

Summary:

CLEANING LABORATORY EVALUATION SUMMARY

Substrates:	Aluminum				
Contaminants:	Oil, Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Toucan	Toucan Eco	100	95.84	☑	
Fisher Scientific	Absolute Ethanol	0	0.00	☐	
EcoLab	Proforce Pink	100	97.40	☑	
Procter & Gamble	Dawn Ultra Apple	1	96.83	☑	

Conclusion: All of the products were effective at removing more than 95% of the vegetable oil from the surfaces using manual wiping.