CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2015
DateRun:	04/08/2015
Experimenters:	Nicholas Landberg
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #5
Substrates:	Wood
PartType:	Coupon
Contaminants:	Greases, Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate supplied cleaning equipment for stainless steel polish as compared to conventional products

Experimental Procedure:

Precleaned coupons were measured using a analytical balance and Spectro Guide Gloss-Color meter from BYK Gardner to evaluate weights and L-values. Baseline color-gloss readings of the surface were taken in five locations on the coated wood coupons. Coupons were then contaminated with a grease mix from three lab staff members. Weights and L-Value readings were taken a second time. Cleaning products were then sprayed onto the surface, wiped off with a micro fiber cloth attached to a Garnder Straight-line washability unit and cleaned for 5 cycles. Coupons were then dried with a single pass using a fresh micro fiber cloth. Gloss readings were taken again in the same five locations. The difference in weights gloss-color was then compared to determine effectiveness.

Cleaning data from the L-values can be calculated as percent detergency in the following equation:

$$\% \text{ DET} = \frac{L(\text{cleaned}) - L(\text{soiled})}{L(\text{unsoiled}) - L(\text{soiled})} \times 100$$

ChemistriesEvaluated: Product 1; Comparative Stainless Steel Polish; Water;

Results:

The Pledge product resulted in marginally better soil removal rate based on gravimetric results as compared to Endust, Behold and PLZ. With the variance in the soil removal rates, there was no significant difference in the four products evaluated. Results for gravimetric results are listed in the table.

Table of Soil Removal Rates			
Cleaner	Initial wt	Final wt	% Removed
Pledge Furniture			
	0.3005	0.094	68.72
	0.361	0.0921	74.49
	0.3422	0.0824	75.92
PLZ Furniture			
	0.4165	0.1591	61.8
	0.3866	0.1029	73.38
	0.23	0.1169	49.17
Endust			
	0.2696	0.0603	77.63
	0.367	0.1475	59.81
	0.4376	0.1353	69.08
Behold			
	0.5072	0.1552	69.4
	0.3327	0.151	54.61
	0.6145	0.1283	79.12

%DET

Cleaner	Initial L	Dirty L	Final L	% DET	% AVG	Std Dev
Pledge Furniture						
	59.60	36.18	50.90	62.85	71.00	18.97
	61.40	35.49	50.38	57.47		
	61.76	31.24	59.53	92.69		

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PLZ Furniture						
	58.33	35.52	55.22	86.37	91.75	4.71
	61.55	32.68	59.74	93.73		
	63.29	34.25	61.88	95.14		
Endust						
	63.85	32.27	61.84	93.64	89.72	4.75
	65.73	32.76	60.60	84.44		
	61.70	33.85	59.22	91.10		
Behold						
	63.32	30.97	46.47	47.91	65.82	29.68
	65.21	36.77	50.84	49.47		
	55.82	31.02	55.84	100.08		

Summary:

Substrates:	Wood				
Contaminants:	Greases, Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
SC Johnson & Son Inc	Pledge Floor care Clean & Shine Multisurface	100	71.00	☐	
Brand Buzz	PLZ Furniture	100	91.75	☑	
EcoLab	Endust Dust & Clean	100	89.72	☑	
EcoLab	Behold Furniture pulish	100	65.82	☐	

Conclusion: The PLZ product performed comparably with the three supplied products.