CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2015

DateRun: 04/02/2015

Experimenters: Abigail Giarrosso, Digvijay Devkota

ClientType: Cleaner Manufacturer

ProjectNumber: Project #5

Substrates: Glass/Quartz, Chrome

PartType: Coupon

Contaminants: Films, Soaps

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate supplied products for glass cleaning using manual cleaning

Experimental Procedure: Supplied products were diluted with room temperature water to the requested dilution; 1 gram of salt was resolved into 1.5 liter of water then were electronically activated two times. PH was 8.6 and chorine level was 50 ppm. Preweighed glass, chrome, and mirror coupons were coated with SSL Soil 2 (Glass soap scum: Water 51.5%, Hair gel 25.6%, Toothpaste 10.4%, Shaving cream 5.3%, Hair spray 3.7% and Spray deodorant 3.5%) 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 Wypall X60 reinforced wipe was attached to the cleaning sled and soaked with 1 spray of cleaning solutions. Each coupon was sprayed 1 times with the same cleaning solution. The solution was allowed to penetrate for 30 seconds followed by cleaning in the SLW unit for 5 cycles (~10 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded and efficiencies recorded. Visual observations were made on the coupons for spotting and filming following the general guidelines set forth in the CSPA DCC 09A. Filming is best recognized as "haziness" or overall "milkiness", while streaking is best identified as dried droplets or "spotting", usually found strung together into thin white lines. Each coupon was evaluated separately for filming and streaking, (i.e., product residues without added soil), according to a scale of "1" to "5" with;
Filming Streaking
1 = high filming 1 = high streaking (poor performance)
5 = no visible filming 5 = no visible streaking (excellent performance)

ChemistriesEvaluated: Stepan Formula; Windex - Glass Cleaner

Results:

Cleaners	Initial wt	Final wt	% Removed
Stepan Mirror	0.0586	0.0024	95.90
Stepan Mirror	0.0613	0.0031	94.94
Stepan Mirror	0.0643	0.0055	91.45
Stepan Glass	0.0648	0.0105	83.80
Stepan Glass	0.0662	0.0095	85.65
Stepan Glass	0.0674	0.0155	77.00
Stepan Chrome	0.0707	0.0061	91.37
Stepan Chrome	0.0624	0.0035	94.39
Stepan Chrome	0.0619	0.0027	95.64
Windex Mirror	0.0663	0.0032	95.17
Windex Mirror	0.5122	0.0050	99.02
Windex Mirror	0.0644	0.0036	94.41
Windex Glass	0.0686	0.0020	97.08
Windex Glass	0.0724	0.0024	96.69
Windex Glass	0.0706	0.0036	94.90
Windex Chrome	0.0699	0.0048	93.13
Windex Chrome	0.0657	0.0022	96.65
Windex Chrome	0.0658	0.0016	97.57

Visual Rankings

Cleaners	Substrate	S1	F1	S2	F2	S3	F3	Ave S	Ave F
Stepan Formula	Glass	2	3	2	3	2	3	2	2.7
	Glass	3	2	3	2	4	3	3.3	2.7

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Stepan Formula									
Stepan Formula	Glass	3	2	3	3	3	3	3	2.7
Stepan Formula	Mirror	2	2	2	2	3	2	2.3	2.3
Stepan Formula	Mirror	2	3	2	2	4	2	2.7	3
Stepan Formula	Mirror	3	3	3	3	4	3	3.3	3.3
Stepan Formula	Chrome	2	2	2	2	2	2	2	2
Stepan Formula	Chrome	1	1	2	2	1	2	1.3	1.3
Stepan Formula	Chrome	2	3	2	3	2	2	2	2.7
Windex	Glass	4	2	4	2	3	3	3.7	2.3
Windex	Glass	5	2	3	3	4	3	4	3
Windex	Glass	2	2	3	3	1.5	3	2.2	2.2
Windex	Mirror	1	2	1	2	2	2	1.33	2
Windex	Mirror	2	2	2	2	2	2	2	2
Windex	Mirror	2	2	2	2	3	2	2.3	2.3
Windex	Chrome	2	1	2	1	1	1.5	1.7	1
Windex	Chrome	1	1	1	1	1.5	1	1.2	1.2
Windex	Chrome	1	1	1	1	1	1	1	1

Summary:

Substrates:	Glass/Quartz, Chrome				
Contaminants:	Films, Soaps				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brand Buzz	Stepan Glass Cleaning Formula	100	90.02	☑	F 2.44; S 1.89
SC Johnson & Son Inc	Windex Glass & More Cleaner (Spray)	100	96.07	☑	F 1.61; S 1.42

Conclusion:

Both products cleaned efficiently. Windex cleaned the most efficiently and left the substrates looking the cleanest in both filming and streaking. The Stepan Formula also cleaned almost as effectively as the Windex in efficiency and streaking. The Stepan Formula left more filming than Windex but was still effective.