CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2010
DateRun:	06/03/2010
Experimenters:	Jason Marshall, Timothy Weil
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Glass/Quartz, Chrome
PartType:	Coupon
Contaminants:	Films, Soaps
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric, Visual
Purpose:	To evaluate possible reformulation products for glass cleaning.

Experimental Procedure:

The proposed formulation products were diluted using room temperature water to a concentration (96:1). A conventional product was used at full strength for glass cleaning. In addition, the supplied current formulation was used as a control to determine relative effectiveness of the proposed formulations.

Preweighed chrome, mirror and glass 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 handheld 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 5-7 sprays of cleaning solutions. Each coupon was sprayed 7-10 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 "7", where:

Filming Streaking
7 = high filming 7 = high streaking poor (performance)
1 = no visible filming 1 = no visible streaking (excellent performance)

Results:

The two formulations using Colonial Chemical products removed over 85% of the glass soap scum at the 96-1 dilution which were comparable to the conventional product at 88% removal. The Calsoft L40 and Calsoft AOS 40 removed the same amount as the current formulation product at 84%. The Mirataine H2CA removed less than 80% of the soil. There was no significant difference in the level of streaking and filming. The table lists the amount of soil added, the amount remaining after cleaning and the calculated efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed	Streaking	Filming	Ave S	Ave F
Nutrisol w/ Calsoft L40 Glass							
	0.0984	0.0192	80.49	4	2	2.2	2.2
	0.1072	0.0089	91.70	2	2		
	0.1050	0.0136	87.05	1	1		
Nutrisol w/ Calsoft L40 Chrome							
	0.1194	0.0080	93.30				
	0.0950	0.0123	87.05				
	0.0807	0.0144	82.16				
Nutrisol w/ Calsoft L40 Mirror							

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	0.0922	0.0208	77.44	2	3		
	0.0957	0.0160	83.28	2	2		
	0.1337	0.0291	78.23	2	3		
Nutrisol w/ Calsoft AOS40 Glass							
	1.0931	0.0165	98.49	1	2	1.8	2.8
	0.1468	0.0204	86.10	1	2		
	0.1577	0.0135	91.44	2	3		
Nutrisol w/ Calsoft AOS40 Chrome							
	0.1406	0.0152	89.19				
	0.1362	0.0137	89.94				
	1.1235	0.0192	98.29				
Nutrisol w/ Calsoft AOS40 Mirror							
	0.1228	0.0399	67.51	3	4		
	0.1382	0.0433	68.67	2	3		
	0.1111	0.0380	65.80	2	3		
Nutrisol w/ Mirataine H2CA Glass							
	0.1000	0.0080	92.00	2	3	1.7	2.8
	0.1127	0.0121	89.26	2	3		
	0.1388	0.0265	80.91	3	3		
Nutrisol w/ Mirataine H2CA Chrome							
	0.1117	0.0142	87.29				
	0.1063	0.0207	80.53				
	0.1587	0.0265	83.30				
Nutrisol w/ Mirataine H2CA Mirror							
	0.1340	0.0376	71.94	1	3		
	0.1443	0.0025	98.27	1	2		
	0.0810	0.0642	20.74	1	3		
Nutrisol w/ SugaFax D10 Glass							
	0.0569	0.0076	86.64	1	2	1.7	2.5
	0.0966	0.0007	99.28	1	2		
	0.1295	0.0053	95.91	2	2		
Nutrisol w/ SugaFax D10 Chrome							
	0.1099	0.0420	98.28				

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	0.1103	0.0019	84.26				
	0.1074	0.0169	76.75				
Nutrisol w/ SugaFax D10 Mirror							
	0.1329	0.0309	80.98	2	3		
	0.1176	0.0215	93.31	2	3		
	0.1199	0.0228	96.46	2	3		
Green Bridge Control 96-1 Glass							
	0.1278	0.0045	86.92	3	2	2.5	2.3
	0.1084	0.0121	69.72	2	2		
	0.0665	0.0087	68.30	2	2		
Green Bridge Control 96-1 Chrome							
	0.1004	0.0304	84.90				
	0.1022	0.0324	84.62				
	0.1424	0.0215	95.23				
Green Bridge Control 96-1 Mirror							
	0.1547	0.0238	94.70	3	3		
	0.1634	0.0078	95.72	2	2		
	0.1679	0.0089	94.06	3	3		
MD Stetson Vision Glass							
	0.1076	0.0072	76.81	3	2	2.2	2.8
	0.2569	0.0091	96.48	1	3		
	0.1035	0.0240	88.84	2	4		
MD Stetson Vision Chrome							
	0.1309	0.0056	85.75				
	0.1128	0.0067	84.29				
	0.1144	0.0163	74.78				
MD Stetson Vision Mirror							
	0.1184	0.0186	83.84	1	3		
	0.1336	0.0337	89.47	4	3		
	0.1318	0.0213	89.03	2	2		
Nutrisol w/ SugaNate 160 Glass							
	0.0114	0.0012	91.04	2	1	1.5	2.0
	0.0237	0.0026	88.57	1	1		
	0.0212	0.0019	98.25	1	1		
Nutrisol w/							

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SugaNate 160 Chrome							
	0.0280	0.0032	88.57				
	0.0229	0.0004	98.25				
	0.0219	0.0036	83.56				
Nutrisol w/ SugaNate 160 Mirror							
	0.0126	0.0026	79.37	2	3		
	0.0260	0.0053	79.62	1	3		
	0.0542	0.0001	99.82	2	3		

Summary:

Substrates:	Glass/Quartz, Chrome				
Contaminants:	Films, Soaps				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Next-Gen Supply Group	Vision Glass Cleaner	100	88.11	☑	

Conclusion: Two formulations removed over 85% of the glass soap scum and compared closely with the conventional product. A second glass cleaning trial will be conducted on another dilution of product.