CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2025
DateRun:	01/21/2025
Experimenters:	Cindy McClaughlin, Rachael Rososky
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Glass/Quartz, Chrome, Mirror
PartType:	Coupon
Contaminants:	SSL Soil 2 Glass Soap Scum
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric, Visual
Purpose:	To evaluate the efficacy of ServeCo Glass/Hard Surface Cleaner & Protector against Windex for the removal of SSL 2 Glass Soap Scum from chrome, glass, and mirror glass substrates

Experimental Procedure:

Nine pre-weighed coupons per cleaner, consisting of three of each substrate (chrome-plated steel, glass, and mirror glass), were soiled with one gram of SSL 2 Glass Soap Scum using a handheld swab. The coupons air-dried at room temperature (68°F) for 24 hours and were then weighed to determine the contaminated weight.

Three coupons of the same substrate were mounted on the Straight Line Washability Unit (SLW) with a Wypall cloth (provided by ServeCo) attached to the cleaning sled. Each Wypall and coupon received two sprays of the product (reduced from the typical three sprays based on product recommendations for a light coating) before running the SLW for 20 cycles (30 seconds). After the cleaning cycle, coupons were air-dried and final weights were recorded.

Three evaluators performed visual ratings for filming and streaking of each coupon following the cleaning cycle, and the ratings were averaged to determine overall scores for filming and streaking. The following visual rating keys were applied:

Rating	Cleanliness Level
1	No Visible Filming/Streaking (Excellent Performance)
2	Minimal Filming/Streaking
3	Slight Filming/Streaking
4	Noticeable Filming/ Streaking
5	Considerable Filming/ Streaking
6	Severe Filming/Streaking
7	High Filming/ Streaking (Poor Performance)

Filming:

Filming refers to the presence of a uniform or patchy haze or residue left on the glass surface after cleaning. This may obscure clarity and produce a dull or cloudy appearance when viewed at different angles under light. Filming indicates incomplete removal of the cleaning product, soil, or contaminants during the cleaning process.

- **Key Attributes for Evaluation**:
  - Presence and intensity of haze or residue.
  - Uniformity of the film across the surface.
  - Impact on surface clarity when observed under direct and ambient light.

Streaking:
Streaking refers to visible lines or smears left on the glass surface after cleaning, typically caused by uneven distribution or removal of cleaning product or contaminants. Streaking affects the optical uniformity of the substrate and may be most noticeable under light reflection.

- **Key Attributes for Evaluation**:
  - Number and length of streaks.
  - Visibility under direct or reflected light.
  - Contrast of streaks against the clean surface.

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Results:

Cleaner	Substrate	Initial wt. of cont.	Final wt. of cont.	% Cont. Removed	Average % Removal	Overall Cleaner Average % Removal
ServeCo Glass Cleaner	Chrome-plated steel	0.1365	0.0041	97.00	93.33	92.06
		0.1421	0.0073	94.86		
		0.1347	0.0160	88.12		
	Glass	0.1866	0.0085	95.44	94.64	
		0.1657	0.0141	91.49		
		0.1362	0.0041	96.99		
	Mirror	0.1345	0.0083	93.83	88.20	
		0.1418	0.0159	88.79		
		0.1388	0.025	81.99		
Windex	Chrome-plated steel	0.1268	0.0300	76.34	81.18	82.42
		0.1357	0.0216	84.08		
		0.1339	0.0226	83.12		
	Glass	0.1279	0.0240	81.24	88.17	
		0.1345	0.0038	97.17		
		0.1395	0.0194	86.09		
	Mirror	0.1394	0.0148	89.38	77.91	
		0.1345	0.0501	62.75		
		0.1343	0.0247	81.61		

Filming Visual Ratings:

Cleaner	Substrate	Evaluator A	Evaluator B	Evaluator C	Average Filming Rating	Overall Filming Rating
ServeCo Glass Cleaner	Chrome-plated steel	3	3	3	3	3.66
		3	3	3		
		3	3	3		
	Glass	3.5	3.5	3	3.33	
		3.5	3.5	3		
		3.5	3.5	3		
	Mirror glass	4.5	4.5	5	4.66	
		4.5	4.5	5		
		4.5	4.5	5		
Windex	Chrome-plated steel	3	3	3	3	3.55
		3	3	3		
		3	3	3		
	Glass	4.5	4.5	4	3.66	
		4	4	3		
		3	3	3		
	Mirror	4	4	4	4	
		4	4	4		
		4	4	4		

ServeCo performed relatively similar to Windex in filming visual observations on each substrate and overall performance.

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Streaking Visual Ratings:

Cleaner	Substrate	Evaluator A	Evaluator B	Evaluator C	Average Streaking Rating	Overall Streaking Rating
ServeCo Glass Cleaner	Chrome-plated steel	2	2	2	2	3.44
		2	2	2		
		2	2	2		
	Glass	4	3.5	4	3.66	
		4	3.5	4		
		4	3.5	4		
	Mirror glass	5	4.5	5	4.66	
		5	4.5	5		
		5	4.5	5		
Windex	Chrome-plated steel	2	2	2	2	3.99
		2	2	2		
		2	2	2		
	Glass	6	6	6	5.33	
		5	5	5		
		5	5	5		
	Mirror glass	5	5	5	4.66	
		4	4	4		
		5	5	5		

ServeCo Glass Cleaner had less streaking overall on the surfaces than Windex.

Summary:

Substrates:	Glass/Quartz, Chrome, Mirror				
Contaminants:	SSL Soil 2 Glass Soap Scum				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
ServeCo North America	Glass/Hard Surface Cleaner & Protector	100%	92.06	☑	
SC Johnson & Son Inc	Windex Glass Original w/ Ammonia-D	100%	82.42	☑	

Conclusion:

ServeCo Glass/Hard Surface Cleaner & Protector was more effective than Windex at removing glass soap scum from chrome-plated steel, glass, and mirror glass.