CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2025
DateRun:	02/18/2025
Experimenters:	Alex Joga
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Textile
PartType:	Coupon
Contaminants:	Food
Cleaning Methods:	Manual spreading
Analytical Methods:	Colorimeter, Visual
Purpose:	To test the efficiency of ServeCo Gold Upholstery Stain Remover against Guardsman Stain & Odor Eliminator in removing different contaminants from three fabric substrates.
Experimental Procedure:	Three fabric swatches per product, one of each fabric type (microsuede, polyester/cotton blend, and polyester, were cut into equal sizes to fit three stained circles for each contaminant type. Initial colorimeter measurements were taken using a BYK-Gardner Colorimeter to record L* (lightness), a* (red/green value), and b* (blue/yellow value) before staining (Unstained Fabric), after applying and drying the two staining agents (egg whites, red wine) to the textile surface (Untreated Stain), and after treating the stains with the product (Treated Stain). The staining agents were applied evenly to the textile surface with a swab three times to create three individual circular stains on the surface of the fabric. Textile coupons air dried for 24 hours +/- 2 hours at room temperature (68F) before Untreated Stain values were recorded. Each stain was treated with three sprays of their respective cleaning product and allowed to sit on the stain for two minutes before blotting the saturated stain 30 times with a clean cotton towel. Treated textile coupons air dried at room temperature (68F) for 24 +/-2 hours to dry before Treated Stain values were recorded. The performance of each product was evaluated instrumentally using the Stain Removal Index (SRI), a scale from 0 to 100, where 0 indicates no stain removal and 100 represents complete stain removal. The SRI was calculated as: $SRI = 100 \times (\Delta E*(US-UF) - \Delta E*(TS-UF))$ where: • US = Untreated stain area • UF = Untreated (unstained) fabric area • TS = Treated stain area • *ΔE(US-UF)** = Color difference between the unwashed stain and the unwashed fabric • *ΔE(TS-UF)** = Color difference between the treated stain and the unwashed fabric

CLEANING LABORATORY EVALUATION SUMMARY

Results: **ServeCo Gold Upholstery Stain Remover**

Substrate	Contaminant	Measurement	L	a	b	ΔE*	SRI	Overall SRI
Microsuede	Egg Whites	Unstained Fabric (UF)	71.97	3.43	7.70	5.33	2.78	2.90
		Untreated Stain (US)	66.67	2.87	7.90			
		Treated Stain (TS)	69.28	2.77	7.48			
		Unstained Fabric (UF)	72.28	3.14	7.62	6.28	2.38	
		Untreated Stain (US)	66.05	2.76	8.29			
		Treated Stain (TS)	69.91	2.95	7.51			
		Unstained Fabric (UF)	72.09	3.10	7.54	6.72	3.53	
		Untreated Stain (US)	65.42	2.67	8.26			
		Treated Stain (TS)	68.76	2.08	6.97			
	Red Wine	Unstained Fabric (UF)	71.73	3.17	7.61	8.71	3.23	2.86
		Untreated Stain (US)	63.39	3.60	5.13			
		Treated Stain (TS)	68.76	2.08	6.97			
		Unstained Fabric (UF)	72.02	3.50	7.57	7.94	2.80	
		Untreated Stain (US)	64.38	2.83	5.50			
		Treated Stain (TS)	69.72	1.96	7.12			
		Unstained Fabric (UF)	71.97	3.03	7.58	7.87	2.54	
		Untreated Stain (US)	64.38	2.83	5.50			
		Treated Stain (TS)	69.72	2.01	7.01			
Polyester/ Cotton Blend	Egg Whites	Unstained Fabric (UF)	77.70	2.80	5.60	0.86	0.87	1.05
		Untreated Stain (US)	77.93	3.01	6.40			
		Treated Stain (TS)	77.82	2.45	6.39			
		Unstained Fabric (UF)	78.02	2.83	5.40	0.93	1.16	
		Untreated Stain (US)	78.20	2.97	6.30			
		Treated Stain (TS)	77.69	2.45	6.44			
		Unstained Fabric (UF)	77.60	2.76	5.69	0.99	1.13	
		Untreated Stain (US)	77.05	2.93	6.49			
		Treated Stain (TS)	77.73	2.63	6.81			
	Red Wine	Unstained Fabric (UF)	77.67	2.83	5.81	15.13	9.13	7.83
		Untreated Stain (US)	63.60	7.09	2.25			
		Treated Stain (TS)	69.05	0.01	4.79			
		Unstained Fabric (UF)	77.66	2.81	5.74	14.80	6.29	

CLEANING LABORATORY EVALUATION SUMMARY

		Untreated Stain (US)	63.87	7.02	2.39			
		Treated Stain (TS)	72.06	0.24	4.46			
		Unstained Fabric (UF)	77.99	3.00	5.79	16.07	8.07	
		Untreated Stain (US)	63.04	7.61	2.10			
		Treated Stain (TS)	70.50	0.29	4.52			
Polyester	Egg Whites	Unstained Fabric (UF)	50.21	2.87	26.57	7.96	2.84	2.68
		Untreated Stain (US)	45.33	0.55	20.73			
		Treated Stain (TS)	47.56	2.12	25.86			
		Unstained Fabric (UF)	49.97	3.10	26.54	9.08	1.74	
		Untreated Stain (US)	44.60	0.03	19.89			
		Treated Stain (TS)	49.57	2.24	25.08			
		Unstained Fabric (UF)	49.57	2.97	26.45	8.54	3.47	
		Untreated Stain (US)	44.59	0.18	20.10			
		Treated Stain (TS)	46.84	2.37	24.40			
	Red Wine	Unstained Fabric (UF)	50.21	2.87	26.57	7.96	2.84	3.59
		Untreated Stain (US)	45.33	0.55	20.73			
		Treated Stain (TS)	47.56	2.12	25.86			
		Unstained Fabric (UF)	49.97	3.10	26.54	9.08	4.46	
		Untreated Stain (US)	44.60	0.03	19.89			
		Treated Stain (TS)	49.19	7.24	25.08			
		Unstained Fabric (UF)	49.57	2.97	26.45	8.54	3.47	
		Untreated Stain (US)	44.59	0.18	20.10			
		Treated Stain (TS)	46.84	2.37	24.40			

CLEANING LABORATORY EVALUATION SUMMARY

Results Continued.

Guardsman Stain & Odor Removal

Substrate	Contaminant	Measurement	L	a	b	ΔE*	SRI	Overall SRI
Microsuede	Egg Whites	Unstained Fabric (UF)	71.79	2.72	8.20	15.34	10.41	12.77
		Untreated Stain (US)	56.52	1.28	8.21			
		Treated Stain (TS)	61.46	1.45	8.20			
		Unstained Fabric (UF)	71.99	2.59	8.07	16.42	14.79	
		Untreated Stain (US)	55.63	1.25	8.40			
		Treated Stain (TS)	57.28	1.23	8.82			
		Unstained Fabric (UF)	72.00	2.45	8.12	15.01	13.11	
		Untreated Stain (US)	57.01	1.62	8.22			
		Treated Stain (TS)	58.95	1.35	8.77			
	Red Wine	Unstained Fabric (UF)	71.39	2.45	8.53	10.80	7.47	6.67
		Untreated Stain (US)	61.24	3.66	5.03			
		Treated Stain (TS)	64.13	1.32	7.16			
		Unstained Fabric (UF)	72.15	2.50	8.53	9.67	5.54	
		Untreated Stain (US)	63.09	3.42	5.27			
		Treated Stain (TS)	66.78	2.07	7.23			
		Unstained Fabric (UF)	72.79	2.72	8.48	10.67	6.98	
		Untreated Stain (US)	62.78	3.89	4.97			
		Treated Stain (TS)	66.06	1.77	6.87			
Polyester/ Cotton Blend	Egg Whites	Unstained Fabric (UF)	78.56	2.61	6.03	1.22	1.53	1.57
		Untreated Stain (US)	77.41	2.82	6.38			
		Treated Stain (TS)	77.10	2.26	6.33			
		Unstained Fabric (UF)	78.00	2.66	6.30	0.79	1.16	
		Untreated Stain (US)	77.36	2.74	5.85			
		Treated Stain (TS)	76.88	2.34	6.31			
		Unstained Fabric (UF)	78.35	2.89	6.05	1.62	2.00	
		Untreated Stain (US)	76.74	2.85	5.88			
		Treated Stain (TS)	76.43	2.38	6.32			
	Red Wine	Unstained Fabric (UF)	78.48	2.59	6.24	16.03	8.47	7.25
		Untreated Stain (US)	63.60	7.02	2.25			
		Treated Stain (TS)	70.46	0.02	5.32			

CLEANING LABORATORY EVALUATION SUMMARY

		Unstained Fabric (UF)	78.57	2.97	6.05	15.73	6.95	
		Untreated Stain (US)	63.87	7.09	2.25			
		Treated Stain (TS)	71.93	1.05	5.37			
		Unstained Fabric (UF)	78.52	2.93	6.16	16.67	6.32	
		Untreated Stain (US)	63.04	7.61	2.10			
		Treated Stain (TS)	72.36	1.55	5.77			
Polyester	Egg Whites	Unstained Fabric (UF)	50.45	2.60	27.01	1.49	1.42	1.57
		Untreated Stain (US)	49.24	2.38	27.86			
		Treated Stain (TS)	49.26	3.14	26.46			
		Unstained Fabric (UF)	50.46	2.61	27.03	0.99	1.69	
		Untreated Stain (US)	49.50	2.56	27.25			
		Treated Stain (TS)	48.81	2.93	26.87			
		Unstained Fabric (UF)	50.60	2.64	26.95	1.33	1.61	
		Untreated Stain (US)	49.28	2.76	27.00			
		Treated Stain (TS)	49.04	2.86	27.28			
	Red Wine	Unstained Fabric (UF)	50.18	2.62	26.95	8.15	8.98	9.58
		Untreated Stain (US)	45.33	0.55	20.73			
		Treated Stain (TS)	41.33	1.10	26.93			
		Unstained Fabric (UF)	50.36	2.69	27.09	9.47	10.23	
		Untreated Stain (US)	44.60	0.55	19.89			
		Treated Stain (TS)	40.37	0.95	25.72			
		Unstained Fabric (UF)	50.16	2.65	27.03	9.23	9.54	
		Untreated Stain (US)	44.59	0.18	20.10			
		Treated Stain (TS)	41.16	0.21	29.05			

CLEANING LABORATORY EVALUATION SUMMARY

Overall SRI Table Summary

Substrate	Contaminant	ServeCo Gold SRI	Guardsman SRI
Microsuede	Egg Whites	2.90	**12.77**
	Red Wine	2.86	**6.67**
Polyester/ Cotton Blend	Egg Whites	1.05	**1.57**
	Red Wine	**7.83**	7.25
Polyester	Egg Whites	**2.68**	1.57
	Red Wine	3.59	**9.58**

After one treatment, ServeCo Gold Upholstery Stain Remover slightly more effective than Guardsman Stain & Odor Eliminator at removing red wine from polyester/cotton blend and egg whites from polyester. Guardsman Stain & Odor Eliminator only had a slightly higher efficacy at removing egg whites from polyester/cotton blend.

Overall SRI by Staining Agent

Contaminant	ServeCo Gold SRI	Guardsman SRI
Egg Whites	2.21	5.30
Red Wine	4.76	7.83

The averages of each staining agent (contaminant) across all three textile substrates show that Guardsman Stain & Odor Eliminator was more effective than ServeCo Gold Upholstery Stain Remover on both egg whites and red wine.

Summary:

Substrates:	Textile				
Contaminants:	Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
ServeCo North America	Gold Upholstery Stain Remover	100%		☑	Red Wine - Polyester/Cotton Blend; Egg White - Polyester
Guardsman Protection Products	Stain and Odor Eliminator	100%		☑	

Conclusion:

ServeCo Gold Upholstery Stain Remover was not as effective as Guardsman overall, but it was more effective than Guardsman Stain & Odor Eliminator in red wine removal on the polyester/cotton blend and egg white removal on polyester after one treatment.