CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2025
DateRun:	02/05/2025
Experimenters:	Tatyanna Moreland Junior
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Textile
PartType:	Coupon
Contaminants:	Inks
Cleaning Methods:	Manual Wipe
Analytical Methods:	Colorimeter, Visual
Purpose:	To test the efficiency of ServeCo Ink & Stain Stick on removing Ink from leather

Experimental Procedure:

Six leather swatches were cut into uniform rectangular samples and divided into two groups, with three swatches assigned to each ink remover. 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 staining with ink (*Untreated Stain*), and after treating the stain with the product (*Treated Stain*).

A black permanent marker was applied to the center of each swatch to create consistent ink stains across all leather samples. Each product was applied to its respective leather swatches directly onto the stained area by the same evaluator using five complete circular motions, followed by a 30-second wait to allow the product to penetrate. The stain was then lightly dabbed once with a clean cloth to remove residual product and any ink loosened by the treatment. This process was repeated three times and final visual evaluations were documented by three panelists using the following rating key:

Rating	**Cleanliness Level**
1	No Visible Soil Stains (Excellent Performance)
2	Minimal Soil Stains
3	Slight Soil Stains
4	Noticeable Soil Stains
5	High Soil Stains (Poor Performance)

The performance of each ink remover 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

Results:

Colorimeter Analysis

		Treatment 1		**Treatment 2**		**Treatment 3**	
Product	Coupon	SRI	Overall SRI	SRI	Overall SRI	SRI	Overall SRI
ServeCo Ink & Stain Stick	1	10.78	12.28	22.80	25.15	31.12	34.21
	2	6.27		23.80		28.58	
	3	19.78		28.85		42.92	
UNITERS Leather Master Ink Lifter	4	-16.55	14.12	30.61	26.83	19.12	37.76
	5	28.39		26.64		47.47	
	6	30.52		23.25		46.68	

Visual Analysis

Clean 1

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Product	Coupon	Panelist 1	Panelist 2	Panelist 3	Average Rating	Overall Product Rating
Ink & Stain Stick	1	5	4	4.5	4.50	4.50
	2	5	4	5	4.67	
	3	4	4.5	4.5	4.33	
Ink Lifter	4	4.5	3.5	4	4.00	3.94
	5	4.5	3.5	3.5	3.83	
	6	4.5	3.5	4	4.00	

Clean 2

Product	Coupon	Panelist 1	Panelist 2	Panelist 3	Average Rating	Overall Product Rating
ServeCo Ink & Stain Stick	1	3	3	3.5	3.17	3.07
	2	3	3.4	3	3.13	
	3	3	3.2	2.5	2.90	
UNITERS Leather Master Ink Lifter	4	2.5	2.5	3	2.67	2.30
	5	2	2.2	2.5	2.23	
	6	2	2	2	2.00	

Summary:

Conclusion: The ink was not removed from the substrate after both cleanings. Overall, the Ink Lifter did better, but the ServeCo Ink & Stain Stick did a comparable job.