

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2015

DateRun: 01/22/2015

Experimenters: George Liang, Russell Curtis

ClientType: Cleaner Manufacturer

ProjectNumber: Project #4

Substrates: Textile

PartType: Coupon

Contaminants: Inks

Cleaning Methods: Immersion/Soak

Analytical Methods: Gloss-Color Meter

Purpose: To determine the color removal from a cloth that has been saturated with the foam cleaner.

Experimental Procedure: Four different types of cloths were saturated with the cleaning foams. These were allowed to sit for 15 minutes to soak in the foam. After 15 minutes, each set of colored fabric was covered in a paper towel and patted down to determine color leakage. These paper towels underwent a gloss meter testing to determine how close the towels were to the initial value using the formula FINAL/INITIAL *100%.

ChemistriesEvaluated: Shout Stain and Odor, Shout Urine, Bran Buzz Carpet 0.2%, Brand Buzz Urine 0.4%, Resolve

Results: Only 2 of the cloth types, the red stripped and the solid brown, had any visual color absorption from the cloth. Our visual analysis could not effectively differentiate between the two types of staining, resulting in the need for a gloss based analysis. The other two cloths did not undergo a gloss analysis.

| Initial Reading | Initial L | A initial | B initial | G Initial | | | | | |
|----------------------|-----------|-----------|-----------|-----------|---------|------------|--------|--------|-------|
| | Value | 88.43 | -2.11 | 3.09 | 1.8 | | | | |
| Cleaner | Cloth | L Final | A Final | B Final | G Final | Change L % | A % | B% | G% |
| Shout Stain and Odor | Red | 88.84 | -1.36 | 2.39 | 1.90 | 0.46 | 35.55 | 22.65 | 5.56 |
| Shout Stain and Odor | Red | 88.86 | -1.50 | 2.66 | 2.00 | 0.49 | 28.91 | 13.92 | 11.11 |
| Shout Stain and Odor | Red | 85.64 | -1.46 | 3.76 | 2.00 | 3.16 | 30.81 | 21.68 | 11.11 |
| Shout Stain and Odor | Green | 89.30 | -1.50 | 1.96 | 1.90 | 0.98 | 28.91 | 36.57 | 5.56 |
| Shout Stain and Odor | Green | 88.26 | -1.73 | 1.80 | 1.80 | 0.19 | 18.01 | 41.75 | 0.00 |
| Shout Stain and Odor | Green | 86.06 | -1.46 | 1.79 | 1.70 | 2.68 | 30.81 | 42.07 | 5.56 |
| Shout Stain and Odor | Brown | 78.08 | 2.26 | 10.45 | 1.60 | 11.70 | 207.11 | 238.19 | 11.11 |
| Shout Stain and Odor | Brown | 76.02 | 1.97 | 9.09 | 1.40 | 14.03 | 193.36 | 194.17 | 22.22 |

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|----------------------|-------|-------|-------|-------|------|-------|--------|--------|--------|
| Shout Stain and Odor | Brown | 75.73 | 2.21 | 10.23 | 1.40 | 14.36 | 204.74 | 231.07 | 22.22 |
| Shout Urine | Red | 90.57 | -1.85 | 1.86 | 2.00 | 2.42 | 12.32 | 39.81 | 11.11 |
| Shout Urine | Red | 88.98 | -1.68 | 2.14 | 1.80 | 0.62 | 20.38 | 30.74 | 0.00 |
| Shout Urine | Red | 85.55 | -1.46 | 0.80 | 2.00 | 3.26 | 30.81 | 74.11 | 11.11 |
| Shout Urine | Green | 90.74 | -1.60 | 3.11 | 2.00 | 2.61 | 24.17 | 0.65 | 11.11 |
| Shout Urine | Green | 92.06 | -1.71 | 2.52 | 1.40 | 4.10 | 18.96 | 18.45 | 22.22 |
| Shout Urine | Green | 87.51 | -1.55 | 1.31 | 1.90 | 1.04 | 26.54 | 57.61 | 5.56 |
| Shout Urine | Brown | 79.77 | 2.00 | 10.55 | 1.66 | 9.79 | 194.79 | 241.42 | 7.78 |
| Shout Urine | Brown | 79.73 | 2.46 | 10.80 | 1.80 | 9.84 | 216.59 | 249.51 | 0.00 |
| Shout Urine | Brown | 74.72 | 2.71 | 11.00 | 1.50 | 15.50 | 228.44 | 255.99 | 16.67 |
| BB Carpet 0.2% | Red | 90.62 | -1.58 | 1.60 | 1.80 | 2.48 | 25.12 | 48.22 | 0.00 |
| BB Carpet 0.2% | Red | 91.01 | -1.60 | 1.65 | 2.03 | 2.92 | 24.17 | 46.60 | 12.78 |
| BB Carpet 0.2% | Red | 90.46 | -1.52 | 1.65 | 1.90 | 2.30 | 27.96 | 46.60 | 5.56 |
| BB Carpet 0.2% | Green | 91.85 | -1.59 | 2.20 | 1.90 | 3.87 | 24.64 | 28.80 | 5.56 |
| BB Carpet 0.2% | Green | 92.06 | -1.61 | 2.05 | 2.80 | 4.10 | 23.70 | 33.66 | 55.56 |
| BB Carpet 0.2% | Green | 92.04 | -1.60 | 2.21 | 1.90 | 4.08 | 24.17 | 28.48 | 5.56 |
| BB Carpet 0.2% | Brown | 85.65 | -1.20 | 1.67 | 2.30 | 3.14 | 43.13 | 45.95 | 27.78 |
| BB Carpet 0.2% | Brown | 86.11 | -1.54 | 0.65 | 4.40 | 2.62 | 27.01 | 78.96 | 144.44 |
| BB Carpet 0.2% | Brown | 85.54 | -1.37 | 1.10 | 2.50 | 3.27 | 35.07 | 64.40 | 38.89 |
| BB Urine 0.4% | Red | 85.52 | -1.53 | 0.83 | 1.30 | 3.29 | 27.49 | 73.14 | 27.78 |
| BB Urine 0.4% | Red | 85.44 | -1.48 | 0.79 | 1.70 | 3.38 | 29.86 | 74.43 | 5.56 |
| BB Urine 0.4% | Red | 86.16 | -1.49 | 1.07 | 1.80 | 2.57 | 29.38 | 65.37 | 0.00 |
| BB Urine 0.4% | Green | 85.50 | -1.57 | 1.77 | 2.20 | 3.31 | 25.59 | 42.72 | 22.22 |
| BB Urine 0.4% | Green | 85.45 | -1.47 | 0.84 | 1.90 | 3.37 | 30.33 | 72.82 | 5.56 |
| BB Urine 0.4% | Green | 85.98 | -1.50 | 0.80 | 2.00 | 2.77 | 28.91 | 74.11 | 11.11 |

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|---------------|-------|-------|-------|-------|------|-------|--------|--------|--------|
| BB Urine 0.4% | Brown | 75.53 | 2.14 | 8.83 | 4.50 | 14.59 | 201.42 | 185.76 | 150.00 |
| BB Urine 0.4% | Brown | 84.24 | -0.77 | 2.40 | 1.70 | 4.74 | 63.51 | 22.33 | 5.56 |
| BB Urine 0.4% | Brown | 81.01 | 0.16 | 4.31 | 3.40 | 8.39 | 107.58 | 39.48 | 88.89 |
| Resolve | Red | 89.17 | -1.55 | 2.39 | 1.80 | 0.84 | 26.54 | 22.65 | 0.00 |
| Resolve | Red | 88.52 | -1.61 | 2.57 | 1.70 | 0.10 | 23.70 | 16.83 | 5.56 |
| Resolve | Red | 89.24 | -1.70 | 2.16 | 2.00 | 0.92 | 19.43 | 30.10 | 11.11 |
| Resolve | Green | 88.02 | -1.47 | 2.35 | 1.90 | 0.46 | 30.33 | 23.95 | 5.56 |
| Resolve | Green | 88.00 | -1.54 | 3.01 | 1.90 | 0.49 | 27.01 | 2.59 | 5.56 |
| Resolve | Green | 88.68 | -1.53 | 2.49 | 1.90 | 0.28 | 27.49 | 19.42 | 5.56 |
| Resolve | Brown | 73.88 | 5.37 | 10.55 | 1.40 | 16.45 | 354.50 | 241.42 | 22.22 |
| Resolve | Brown | 72.44 | 6.41 | 11.52 | 1.20 | 18.08 | 403.79 | 272.82 | 33.33 |
| Resolve | Brown | 73.85 | 6.50 | 12.70 | 1.40 | 16.49 | 408.06 | 311.00 | 22.22 |

The only color that exhibited any substantial change was the brown carpets. Furthermore, the G value range was small enough to cause massive shifts, thus rendering the G data useless. Taking this into account, the data was summarized,

| Cleaner | Average Change L % | Average A % | Average B Change % |
|------------------------|--------------------|-------------|--------------------|
| Shout Stain and Odor | 13.37 | 201.74 | 221.14 |
| Shout Urine | 11.71 | 213.27 | 248.98 |
| Brand Buzz Carpet 0.2% | 3.01 | 35.07 | 63.11 |
| Brand Buzz Urine 0.4% | 9.24 | 124.17 | 82.52 |
| Resolve | 17.01 | 388.78 | 275.08 |

Summary:

| | | | | | |
|----------------------|--|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Textile | | | | |
| Contaminants: | Inks | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| SC Johnson & Son Inc | Shout Carpet Oxy - Stain & odor remover | 100 | | <input type="checkbox"/> | |
| SC Johnson & Son Inc | Shout Urine Destroyer Carpet | 100 | | <input type="checkbox"/> | |
| Brand Buzz | Brand Buzz Carpet | 100 | | <input checked="" type="checkbox"/> | |
| Brand Buzz | Brand Buzz Urine | 100 | | <input checked="" type="checkbox"/> | |
| Reckitt Benckiser | Resolve High Traffic Foam Carpet Cleaner | 100 | | <input type="checkbox"/> | |

Conclusion:

Based on the summarized table, the Brand Buzz cleaning products exhibited the least amount of color change upon application. The Brand Buzz Carpet formulation exhibited the least amount of change while the Brand Buzz Urine was a close second.