

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2009
 DateRun: 06/03/2009
 Experimenters: Jason Marshall, Junhee Cho, Timothy Weil
 ClientType: Cleaner Manufacturer
 ProjectNumber: Project #1
 Substrates: Wood
 PartType: Coupon
 Contaminants: Hucker's Soil
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric
 Purpose: To evaluate supplied aerosol products for manual wood cleaning

Experimental Procedure: Prewighed wood (maple) coupons were coated with Hucker's Soil Formulation (Jif Creamy Peanut Butter 9.2%, Salted Butter 9.2%, Arrowhead Mills stone ground wheat flour 9.2%, Egg Yolk 9.2%, Evaporated milk 13.8%, Distilled water 45.8%, Printer's ink with boiled linseed oil 0.9%, Shaws saline solution 2.7%) using a hand held 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 Kimberly Clark Reinforced paper towel 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 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded and efficiencies were calculated and recorded.

Results: The supplied products results from the gravimetric analysis were inconclusive for Hucker's Soil removal. The table lists the amount of soil initially added and the amount remaining after cleaning and the product efficiency for each coupon cleaned. Visual rankings were conducted by three staff members.

| Cleaner | Initial wt | Final w | % Removed |
|---------|------------|---------|-----------|
| A00133 | 0.2077 | 0.1154 | 44.44 |
| | 0.2337 | 0.1502 | 35.73 |
| | 0.2698 | 0.1728 | 35.95 |
| A00136 | 0.2062 | 0.1438 | 30.26 |
| | 0.1342 | 0.0488 | 63.64 |
| | 0.4245 | 0.2094 | 50.67 |
| Spartan | 0.2184 | 0.1364 | 37.55 |
| | 0.1680 | 0.1219 | 27.44 |
| | 0.2248 | 1.7378 | -673.04 |
| Claire | 0.2306 | -0.5674 | 346.05 |
| | 0.2637 | -0.7480 | 383.66 |
| | 0.2391 | 0.1591 | 33.46 |
| Pledge | 0.2525 | 0.1584 | 37.27 |
| | 0.3206 | 0.2602 | 18.84 |
| | 0.3568 | 0.1852 | 48.09 |

Visual Rank

| Obs 1 | Obs 2 | Obs 3 | Ave: |
|-------|-------|-------|------|
| 3 | 2 | 3 | 2.7 |
| 1 | 1 | 1 | 1 |
| 4 | 4 | 5 | 4.3 |
| 2 | 5 | 2 | 3 |
| 5 | 3 | 4 | 4 |

Summary:

| | | | | | |
|----------------------|--|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Wood | | | | |
| Contaminants: | Hucker's Soil | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Amrep Inc | Aspire Furniture Cleaner & Polish A00133 Aerosol | 100 | 0.00 | <input checked="" type="checkbox"/> | Rank = 2 |

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|--------------------------|--|-----|------|-------------------------------------|----------|
| Amrep Inc | Misty Wax Polish A00136 Aerosol | 100 | 0.00 | <input checked="" type="checkbox"/> | Rank = 1 |
| Spartan Chemical Company | Premium Wood Polish - Aerosol | 100 | 0.00 | <input type="checkbox"/> | Rank = 5 |
| Claire Manufacturing | Multi-surface Furniture Polish Aerosol | 100 | 0.00 | <input type="checkbox"/> | Rank = 3 |
| SC Johnson & Son Inc | Pledge Lemon Clean Aerosol | 100 | 0.00 | <input type="checkbox"/> | Rank = 4 |

Conclusion: Amrep's Aspire was found to have the second best ranking for cleaning based on visual assessment.