

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 04/29/2008

Experimenters: Jason Marshall

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Ceramics, Plastic, Steel

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate supplied products for all purpose cleaning.

Experimental Procedure: The supplied cleaning products were used at the recommended concentration (2 oz per gallon ~ 1.6%). A third product was included for comparison and used at its recommended concentration (6%).

Preweighed ceramic, plastic and steel 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 handheld 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. AA Wypall X60 reinforced wipe 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: One of the supplied products had an overall average efficiency greater than 85% and the other was just under this level with an 82.71% efficiency. The comparative product had an average efficiency over 88%. The removal of the soil from the ceramic surface was the most challenging for all three products. The table lists the amount of soil added and the amount remaining after cleaning and the product efficiency for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|--------------------|------------|----------|-----------|
| Everywhere Ceramic | 0.3443 | 0.1017 | 70.46 |
| | 0.2211 | 0.0476 | 78.47 |
| | 0.4471 | 0.0593 | 86.74 |
| Heavy Duty Ceramic | 0.1717 | 0.0574 | 66.57 |
| | 0.2317 | 0.0670 | 71.08 |
| | 0.3290 | 0.0731 | 77.78 |
| Tough Job Ceramic | 0.2886 | 0.0501 | 82.64 |
| | 0.3260 | 0.0489 | 85.00 |
| | 0.3603 | 0.0541 | 84.98 |
| Everywhere Plastic | 0.3506 | 0.0066 | 98.12 |
| | 0.3717 | 0.0057 | 98.47 |
| | 0.1232 | 0.0041 | 96.67 |
| Heavy Duty Plastic | 0.3739 | 0.0270 | 92.78 |
| | 0.2750 | 0.0276 | 89.96 |
| | 0.1378 | 0.0076 | 94.48 |
| Tough Job Plastic | 0.3177 | 0.0319 | 89.96 |
| | 0.2822 | 0.0081 | 97.13 |
| | 0.2719 | 0.0094 | 96.54 |
| Everywhere Steel | 0.3872 | 0.0727 | 81.22 |
| | 0.2622 | 0.0442 | 83.14 |
| | 0.5714 | 0.0954 | 83.30 |
| Heavy Duty Steel | 0.1597 | 0.0306 | 80.84 |

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|-----------------|--------|--------|-------|
| | 0.2306 | 0.0354 | 84.65 |
| | 0.3050 | 0.0420 | 86.23 |
| Tough Job Steel | 0.1291 | 0.0157 | 87.84 |
| | 0.5706 | 0.0546 | 90.43 |
| | 0.2042 | 0.0407 | 80.07 |

Summary:

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|-------------------------------|--------------------------|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Ceramics, Plastic, Steel | | | | |
| Contaminants: | Hucker's Soil | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Scout Systems | Scout Everywhere | 1.6 | 86.29 | <input checked="" type="checkbox"/> | |
| Scout Systems | Scout Heavy Duty | 1.6 | 82.71 | <input type="checkbox"/> | |
| Rochester Midland Corporation | EnviroCare Tough Job | 6 | 88.29 | <input checked="" type="checkbox"/> | |

Conclusion:

Two of the three products have overall average efficiencies over 85% and would be considered effective based on the SSL testing methodology.