

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014
 DateRun: 09/29/2014
 Experimenters: Loc Nguyen, George Liang
 ClientType: Cleaner Manufacturer
 ProjectNumber: Project #4
 Substrates: Ceramics, Plastic, Chrome
 PartType: Coupon
 Contaminants: Films, Soaps
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric
 Purpose: To evaluate two supplied products for bathroom cleaning

Experimental Procedure: The supplied cleaning products were used at the recommended concentration. Pre-weighed ceramic, plastic and chrome coupons were coated with SSL Soil 1 (Bathroom soap scum: All-in-one shampoo and conditioner 28.6%, Dry skin lotion 21.4%, Liquid hand soap 21.4%, Liquid body wash 14.3%, Deodorant bar soap 7.2% and water 7.1%) 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. A Wypall X60 reinforced wipe was attached to the cleaning sled and soaked with 1-2 spray of cleaning solutions. Each coupon was sprayed 1-2 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 measured and efficiencies were calculated and recorded.

Chemistries Evaluated: Multi-Purpose; Neutral- Floor

Results:

| Cleaner | Initial wt | Final wt | % Removed |
|-----------------------|------------|----------|-----------|
| Multi-Purpose_ceramic | 0.4538 | 0.0452 | 90.04 |
| Multi-Purpose_ceramic | 0.4698 | 0.0564 | 87.99 |
| Multi-Purpose_ceramic | 0.4403 | 0.0472 | 89.28 |
| Multi-Purpose_plastic | 0.5564 | 0.0205 | 96.31 |
| Multi-Purpose_plastic | 0.6361 | 0.0134 | 97.89 |
| Multi-Purpose_plastic | 0.6091 | 0.0273 | 95.51 |
| Multi-Purpose_chrome | 0.4660 | 0.0608 | 86.95 |
| Multi-Purpose_chrome | 0.4344 | 0.0822 | 81.07 |
| Multi-Purpose_chrome | 0.4168 | 0.0643 | 84.57 |
| Neutral-Floor_ceramic | 0.4705 | 0.0351 | 92.53 |
| Neutral-Floor_ceramic | 0.3390 | 0.0338 | 90.02 |
| Neutral-Floor_ceramic | 0.3483 | 0.0325 | 90.66 |
| Neutral-Floor_plastic | 0.4032 | 0.0422 | 89.53 |
| Neutral-Floor_plastic | 0.3657 | 0.0289 | 92.09 |

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|---------------------------|--------|--------|-------|
| Neutral-Floor _plastic | 0.3645 | 0.0347 | 90.48 |
| Neutral-Floor _chrome | 0.3254 | 0.0615 | 81.10 |
| Neutral-Floor _chrome | 0.2932 | 0.1633 | 44.30 |
| Neutral-Floor _chrome | 0.3206 | 0.1483 | 53.74 |

Summary:

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|----------------------|--|---------------------------|--------------------|-------------------------------------|----------------------|
| Substrates: | | Ceramics, Plastic, Chrome | | | |
| Contaminants: | | Films, Soaps | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| EnvirOx LLC | Multi-Purpose Hyper | 100 | | <input checked="" type="checkbox"/> | |
| EnvirOx LLC | Green Certified Neutral Floor Cleaner Hyper Concentrated | 100 | | <input type="checkbox"/> | |

Conclusion:

A cleaning product is considered effective when the efficiency of the product removes 85% of the soil and above. Multi-purpose was effective at removing the bathroom soil. In addition, multi-purpose cleaner is slightly more effective at cleaning the bathroom soil than Neutral-floor cleaner.