

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014
 DateRun: 07/21/2014
 Experimenters: Loc Nguyen, Jonathan Oljey
 ClientType: Cleaner Manufacturer
 ProjectNumber: Project #1
 Substrates: Ceramics, Fiberglass, Chrome
 PartType: Coupon
 Contaminants: Films, Soaps
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric
 Purpose: To evaluate the supplied products for bathroom cleaning using manual cleaning

Experimental Procedure: The supplied cleaning products were used at the recommended concentration (4.7Non-acid, 6.25% mild acid). Prewieghed chrome, ceramic and fiberglass, 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 2-3 sprays 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.

ChemistriesEvaluated: Hydri Orange; Chlorox 409

Results:

| Cleaner | Initial wt | Final wt | % Removed |
|-------------------------|------------|----------|-----------|
| Clorox bathroom_ceramic | 0.2311 | 0.0816 | 64.69 |
| Clorox bathroom_ceramic | 0.2297 | 0.0681 | 70.35 |
| Clorox bathroom_ceramic | 0.2512 | 0.0612 | 75.64 |
| | | | |
| Clorox bathroom_plastic | 0.2548 | 0.0382 | 85.01 |
| Clorox bathroom_plastic | 0.2014 | 0.0376 | 81.33 |
| Clorox bathroom_plastic | 2.4116 | 2.0252 | 16.02 |
| | | | |
| Clorox bathroom_chrome | 0.2150 | 0.0585 | 72.79 |
| Clorox bathroom_chrome | 0.3496 | 0.0402 | 88.50 |
| Clorox bathroom_chrome | 0.2352 | 0.0453 | 80.74 |
| | | | |
| hydri orange_ceramic | 0.2229 | 0.0212 | 90.49 |
| hydri orange_ceramic | 0.2679 | 0.0329 | 87.72 |
| hydri orange_ceramic | 0.2126 | 0.0460 | 78.36 |
| | | | |
| hydri orange_plastic | 0.3344 | 0.0454 | 86.42 |
| hydri orange_plastic | 0.2429 | 0.0288 | 88.14 |

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|--------------------------|--------|--------|-------|
| hydris orange_plastic | 0.2364 | 0.0231 | 90.23 |
| hydris orange_chrome | 0.2527 | 0.0762 | 69.85 |
| hydris orange_chrome | 0.2168 | 0.0784 | 63.84 |
| hydris orange_chrome | 0.1823 | 0.0493 | 72.96 |

Summary:

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|----------------------|---------------------------------|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Ceramics, Fiberglass, Chrome | | | | |
| Contaminants: | Films, Soaps | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| EcoLab | Hydris Orange | 100 | 80.89 | <input checked="" type="checkbox"/> | |
| Clorox Company | Formula 409 All Purpose Cleaner | 100 | 70.57 | <input type="checkbox"/> | |

Conclusion:

The Hydris formulation supplied in the orange labeled bottle worked more efficiently than Clorox on average across the board. The only area where Clorox outperformed was with chrome coupons.