

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2012  
 DateRun: 11/27/2012  
 Experimenters: Anni Geng  
 ClientType: Cleaner Manufacturer  
 ProjectNumber: Project #1  
 Substrates: Ceramics, Plastic, Steel  
 PartType: Part  
 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 supplied concentrations. Preweighed 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 recorded and efficiencies were calculated and recorded.

Results: The Mohawk Tile & Grout and Pledge MultiSurface products both removed over 85% of the bathroom soap scum soil from the surfaces using manual cleaning. The Softscrub removed 44%. The lower removal rate was due to the residue left behind from the cleaning product. A wet or dry wipe after cleaning would help to remove the cleaning residue and improve performance. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

| Cleaner              | Initial wt | Final wt | % Removed |
|----------------------|------------|----------|-----------|
| Product 1 Ceramic    |            |          |           |
|                      | 80.117     | 80.118   | 98.23     |
|                      | 79.823     | 79.824   | 98.66     |
|                      | 77.407     | 77.409   | 98.13     |
| Product 1 Fiberglass |            |          |           |
|                      | 32.675     | 32.680   | 95.06     |
|                      | 32.084     | 32.098   | 80.43     |
|                      | 32.201     | 32.210   | 88.15     |
| Product 1 Chrome     |            |          |           |
|                      | 21.733     | 21.737   | 88.85     |
|                      | 21.788     | 21.792   | 88.79     |
|                      | 21.767     | 21.772   | 87.15     |
| Product 2 Ceramic    |            |          |           |
|                      | 80.838     | 80.942   | 22.32     |
|                      | 69.599     | 69.664   | 36.73     |
|                      | 80.715     | 80.783   | 43.09     |
| Product 2 Fiberglass |            |          |           |
|                      | 32.641     | 32.694   | 38.24     |
|                      | 32.305     | 32.377   | 18.14     |
|                      | 32.367     | 32.401   | 49.55     |
| Product 2 Chrome     |            |          |           |
|                      | 21.788     | 21.800   | 84.96     |
|                      | 21.728     | 21.770   | 44.30     |

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|                      |        |        |       |
|----------------------|--------|--------|-------|
|                      | 21.745 | 21.765 | 64.29 |
| Product 3 Ceramic    |        |        |       |
|                      | 72.399 | 72.409 | 90.22 |
|                      | 76.519 | 76.538 | 88.66 |
|                      | 80.031 | 80.051 | 87.51 |
| Product 3 Fiberglass |        |        |       |
|                      | 32.209 | 32.221 | 84.35 |
|                      | 32.184 | 32.196 | 75.92 |
|                      | 32.603 | 32.620 | 83.61 |
| Product 3 Chrome     |        |        |       |
|                      | 21.782 | 21.787 | 88.24 |
|                      | 21.672 | 21.678 | 88.21 |
|                      | 21.726 | 21.729 | 92.49 |

Summary:

|                      |                          |               |                    |                          |                      |
|----------------------|--------------------------|---------------|--------------------|--------------------------|----------------------|
| <b>Substrates:</b>   | Ceramics, Plastic, Steel |               |                    |                          |                      |
| <b>Contaminants:</b> | Films, Soaps             |               |                    |                          |                      |
| <b>Company Name:</b> | <b>Product Name:</b>     | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>        | <b>Observations:</b> |
| Henkel Corporation   | Soft Scrub with Bleach   | 100           | 44.62              | <input type="checkbox"/> |                      |

Conclusion:

The Mohawk Tile & Grout and Pledge Multisurface products had an overall average efficiency over 85% and performed better than the Soft Scrub Lemon product. The Mohawk Tile & Grout performed best cleaning efficiently out of the three products. The Softscrub Lemon product produced a lot of residual after manual wipe cleaning and would benefit from a rinse using wet towel.