

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006  
 DateRun: 07/11/2006  
 Experimenters: Jason Marshall  
 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 supplied product for bathroom cleaning on three substrates.

Experimental Procedure: The supplied cleaning products were diluted to vendor recommended concentration for bathroom cleaning (30:1, 20:1, 20:1, 10:1). The product was diluted with DI water.

Twelve preweighed fiberglass, three ceramic and three chrome coupons were coated with SSL Soil 1 (Bathroom soap scum: Vaseline Dry Skin Lotion 21.4%, Dial Clean Rinsing Body Wash 14.3%, Market Basket Shampoo & Conditioner (Pert) 28.6%, Soft Soap Natural Liquid hand soap 21.4%, Coast Deodorant bar soap 7.2% and Water 7.1%) 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 Professional Painter's Rag 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 cleaning unit was run for 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded. Efficiencies were calculated and recorded.

Results: Each product had some difficulty removing the bathroom soap scum from the ceramic coupons. The table lists the amount of soil added, the amount remaining and the percent removed for each coupon cleaned.

| Cleaner              | Initial wt | Final wt | % Removed |
|----------------------|------------|----------|-----------|
| Degreaser Ceramic    | 0.2104     | 0.0408   | 80.61     |
|                      | 0.2807     | 0.0658   | 76.56     |
|                      | 0.2198     | 0.0438   | 80.07     |
| Toilet Bowl Ceramic  | 0.1163     | 0.0264   | 77.30     |
|                      | 0.2187     | 0.0509   | 76.73     |
|                      | 0.1002     | 0.0291   | 70.96     |
| RTU Bathroom Ceramic | 0.1063     | 0.0406   | 61.81     |
|                      | 0.1103     | 0.0279   | 74.71     |
|                      | 0.0789     | 0.0197   | 75.03     |
| Heavy Duty Ceramic   | 0.1525     | 0.0532   | 65.11     |
|                      | 0.1486     | 0.0271   | 81.76     |
|                      | 0.1561     | 0.0399   | 74.44     |
| Degreaser Chrome     | 0.2294     | 0.0152   | 93.37     |
|                      | 0.1822     | 0.0107   | 94.13     |
|                      | 0.1736     | 0.0191   | 89.00     |
| Toilet Bowl Chrome   | 0.1086     | 0.0115   | 89.41     |
|                      | 0.1281     | 0.0122   | 90.48     |
|                      | 0.1273     | 0.0144   | 88.69     |
| RTU Bathroom Chrome  | 0.1204     | 0.0052   | 95.68     |
|                      | 0.1536     | 0.0082   | 94.66     |
|                      | 0.1253     | 0.0114   | 90.90     |
| Heavy Duty Chrome    | 0.1516     | 0.0083   | 94.53     |
|                      | 0.1316     | 0.0062   | 95.29     |
|                      | 0.1295     | 0.0054   | 95.83     |

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|                            |        |        |       |
|----------------------------|--------|--------|-------|
| Degreaser<br>Fiberglass    | 0.1657 | 0.0132 | 92.03 |
|                            | 0.1053 | 0.0188 | 82.15 |
|                            | 0.1642 | 0.0182 | 88.92 |
| Toilet Bowl<br>Fiberglass  | 0.2130 | 0.0147 | 93.10 |
|                            | 0.1033 | 0.0142 | 86.25 |
|                            | 0.2034 | 0.0091 | 95.53 |
| RTU Bathroom<br>Fiberglass | 0.1340 | 0.0121 | 90.97 |
|                            | 0.1759 | 0.0149 | 91.53 |
|                            | 0.2003 | 0.0267 | 86.67 |
| Heavy Duty<br>Fiberglass   | 0.1771 | 0.0150 | 91.53 |
|                            | 0.1055 | 0.0139 | 86.82 |
|                            | 0.1517 | 0.0151 | 90.05 |

Summary:

| <b>Substrates:</b>             | Ceramics, Fiberglass, Chrome |        |             |                                     |               |
|--------------------------------|------------------------------|--------|-------------|-------------------------------------|---------------|
| <b>Contaminants:</b>           | Films, Soaps                 |        |             |                                     |               |
| Company Name:                  | Product Name:                | Conc.: | Efficiency: | Effective:                          | Observations: |
| Cogent Environmental Solutions | DFC Degreaser                | 3.33   | 86.31       | <input checked="" type="checkbox"/> |               |
| Cogent Environmental Solutions | DFC Toilet Bowl Cleaner      | 5      | 85.38       | <input checked="" type="checkbox"/> |               |
| Cogent Environmental Solutions | DFC RTU Bathroom Cleaner     | 5      | 84.66       | <input checked="" type="checkbox"/> |               |
| Cogent Environmental Solutions | DFC Heavy Duty Cleaner       | 10     | 89.47       | <input checked="" type="checkbox"/> |               |

Conclusion:

The products were successful in removing at least 85% of the applied soil.