# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2003

DateRun: 02/19/2003

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: State Agency

ProjectNumber: Project #2

Substrates: Chrome

PartType: Coupon

Contaminants: Films, Soaps

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Photography

Purpose: To evaluate supplied cleaners on second soil mixture on chrome coupons.

Experimental Procedure: Four supplied cleaning products were diluted to vendor recommended concentrations for glass cleaning. Each product was diluted with DI water. Twelve preweighed chrome coupons were coated with SSL Soil 2 (Glass soap scum: Colgate Regular shaving cream 5.3%, Arid Extra Extra Spray Deodorant 3.5%, Suave Naturals Flexible Hold hair spray 3.7%, Aleeda Texurizing hair gel 25.6% Colgate Total toothpaste 10.4%, Water 51.5%) by pump spraying the mix. The soil was allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added. Photographs were taken.

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 5 cycles (~9 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded and a second set of photographs were taken. Efficiencies were calculated and recorded.

Results: All four products were successful in removing SSL Soil 2 from chrome coupons. The table below lists the amount of soil added and removed.

Table 1. Soil Application and Removal

| Cleaner | Initial wt | Final wt | % Removed |
|---|---|---|---|
| H2Orange2 | 0.0261 | 0.0004 | 98.47 |
| | 0.0234 | -0.0004 | 101.71 |
| | 0.0274 | 0.0002 | 99.27 |
| Super H2O2 | 0.0288 | 0.0022 | 92.36 |
| | 0.0255 | 0.0027 | 89.41 |
| | 0.0174 | 0.004 | 77.01 |
| Free Fall | 0.0217 | 0.0024 | 88.94 |
| | 0.0235 | 0.0017 | 92.77 |
| | 0.0233 | 0.0014 | 93.99 |
| Ecogent | 0.0229 | 0.0018 | 92.14 |
| | 0.0303 | 0.003 | 90.10 |
| | 0.0188 | 0.0029 | 84.57 |

Summary:

| | |
|---|---|
| **Substrates:** | Chrome |
| **Contaminants:** | Films, Soaps |

| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
|---|---|---|---|---|---|
| EnvirOx LLC | H2Orange2 | 1 | 99.82 | ☑ | |
| Cleanline Products | H2O2 Super Citrus Concentrate | 0 | 86.26 | ☑ | |
| Ramsey Company | Free Fall | 2 | 91.90 | ☑ | |
| Cogent Environmental Solutions | Ecogent General All Purpose Cleaner | 2 | 88.94 | ☑ | |

Conclusion: The same four product concentrations will be used on a second substrate, mirror glass, with the same soil.