

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014

DateRun: 10/06/2014

Experimenters: Loc Nguyen

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Ceramics, Plastic, Steel

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate supplied products for all purpose cleaning following GS 37 requirements

Experimental Procedure: The two cleaning products were used at the provided ready to use concentration at room temperature. Preweighed ceramic, plastic and painted metal coupons were coated with Hucker's Soil Formulation (creamy peanut butter, salted butter, stone ground wheat flour, egg yolk, evaporated milk, distilled water, printer's ink with boiled linseed oil, saline solution) using a hand held swab and allowed to dry for 2 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 Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and soaked with 1-2 sprays of cleaning solutions. Each coupon was sprayed 1-2 times with the same cleaning solution. The cleaning unit was run for 20 cycles (~33 seconds). At the end of the cleaning, coupons were blotted once with a dry paper towel. Final weights were recorded, efficiencies were calculated and recorded.

ChemistriesEvaluated: Pure Care Products All Purpose; Seventh Generation All Purpose;

Results: The Pure Care product had the higher level of removal of the Hucker's soil from the three surfaces using manual wiping. It removed about 70% of the Hucker's soil. The Seventh Generation product removed about half of the soil under the laboratory conditions. The table lists the amount of soil added, the amount remaining after cleaning and the calculated efficiency for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|---------------------------|------------|----------|-----------|
| Pure Care ceramic | | | |
| | 0.5130 | 0.2679 | 47.78 |
| | 0.5166 | 0.1902 | 63.18 |
| | 0.5144 | 0.2536 | 50.70 |
| Pure Care plastic | | | |
| | 0.5978 | 0.1717 | 71.28 |
| | 0.6157 | 0.1561 | 74.65 |
| | 0.6078 | 0.1444 | 76.24 |
| Pure Care painted metal | | | |
| | 0.6130 | 0.0961 | 84.32 |
| | 0.6670 | 0.1018 | 84.74 |
| | 0.5874 | 0.1849 | 68.52 |
| Seventh Gen ceramic | | | |
| | 0.5554 | 0.2422 | 56.39 |
| | 0.5093 | 0.2697 | 47.04 |
| | 0.5251 | 0.2595 | 50.58 |
| Seventh Gen plastic | | | |
| | 0.5743 | 0.2479 | 56.83 |
| | 0.5400 | 0.2689 | 50.20 |
| | 0.5537 | 0.2330 | 57.92 |
| Seventh Gen painted metal | | | |
| | 0.5416 | 0.2560 | 52.73 |
| | 0.5239 | 0.0960 | 81.68 |
| | 0.5493 | 0.3995 | 27.27 |

Summary:

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|----------------------|--------------------------|
| Substrates: | Ceramics, Plastic, Steel |
| Contaminants: | Hucker's Soil |

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| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
|--------------------|-------------------------------|--------|-------------|-------------------------------------|---------------|
| Seventh Generation | Free & Clear All Purpose | 100 | 53.41 | <input type="checkbox"/> | |
| Pure Care | Pure Care All Purpose Cleaner | 100 | 69.05 | <input checked="" type="checkbox"/> | |

Conclusion:

Pure Care Products was found to be more effective at removing the Hucker's soil from various surfaces using manual wiping as compared with the Seventh Generation product.