# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2022

DateRun: 02/10/2022

Experimenters: Nicole Kebler, Tatyanna Moreland Junior

ClientType:

ProjectNumber: Project #3

Substrates: Ceramics, Plastic, Painted metal

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate the Big 3 Podsy all-purpose cleaner for the removal of Huckers Soil from Ceramic, Painted Metal, and Plastic.

Experimental Procedure: The Podsy solution was created by placing a solution pod into a given spray bottle and filling it with room temperature water till the fill line. This solution was allowed to sit for two minutes while the pod dissolved and then shaken to mix the solution together. Then, three coupons of each substrate (ceramic, plastic, painted metal) were collected and initial weights were taken. Hucker's Soil (Creamy Peanut Butter, Salted Butter, Wheat gluten, Egg Yolk, Evaporated milk, DI water, Printer's ink with boiled linseed oil, India Ink, Saline Solution) was applied to each coupon and allowed to air dry for two hours. After the two hour dry time, the weights of the newly contaminated coupons were measured. All coupons were placed into a Gardner-scrub Abrasion Tester machine (SLW). Wypall cleaning cloths were attached to each of the three cleaning blocks used for the test. Each Wypall cloth and all coupons received two sprays of the Podsy solution and the Gardner-scrub Abrasion Tester was run for 20 repetitions, simulating 20 manual wipes. Once cleaning concluded, the cleaned coupons were allowed to air dry for 24 hours. After 24 hours, the weights of the cleaned coupons were measured.

Results: The Podsy all-purpose cleaner performed better than the Formula 409 product for ceramic, painted metal and plastic. Podsy had a 100% removal for ceramic, a 90% removal for painted metal and plastic. Formula 409 had about a 91% removal for ceramic, 88% for painted metal and 83% for plastic.

| Cleaner | Substrate | Initial wt. of cont. | Final wt. of cont | Average | Combined Average |
|---|---|---|---|---|---|
| Podsy | Ceramic | 0.0139 | 0.0016 | 88.49 | 100.05 |
| | | 0.0093 | 0.0001 | 98.92 | |
| | | 0.0259 | -0.0033 | 112.74 | |
| | Painted Metal | 0.052 | 0.0037 | 92.88 | 90.36 |
| | | 0.0278 | 0.003 | 89.21 | |
| | | 0.0372 | 0.0041 | 88.98 | |
| | Plastic | 0.3631 | 0.0122 | 96.64 | 89.34 |
| | | 0.0493 | 0.0087 | 82.35 | |
| | | 0.0446 | 0.0049 | 89.01 | |
| Formula 409 | Ceramic | 0.0288 | 0.003 | 89.58 | 91.36 |
| | | 0.0288 | 0.0027 | 90.63 | |
| | | 0.0441 | 0.0027 | 93.88 | |
| | Painted Metal | 0.0444 | 0.0057 | 87.16 | 87.88 |
| | | 0.0288 | 0.0041 | 85.76 | |
| | | 0.0582 | 0.0054 | 90.72 | |
| | Plastic | 0.043 | 0.0075 | 82.56 | 82.78 |
| | | 0.0482 | 0.0093 | 80.71 | |
| | | 0.0824 | 0.0123 | 85.07 | |

Summary:

| **Substrates:** | Ceramics, Plastic, Painted metal | | | | |
|---|---|---|---|---|---|
| **Contaminants:** | Hucker's Soil | | | | |
| **Company Name:** | **Product Name:** | **Conc.:** | **Efficiency:** | **Effective:** | **Observations:** |
| Big 3 Packaging | Podsy Surface Cleaning System | RTU | 100.00 | ☑ | Podsy was effective at removing Huckers Soil from ceramic, painted metal and plastic. |

# CLEANING LABORATORY EVALUATION SUMMARY

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|---|---|---|---|---|---|---|
| | Clorox Company | Formula 409 All Purpose Cleaner | RTu | 90.00 | ☑ | Formula 409 was effective at removing Hucker Soil from ceramic, painted metal, and plastic. |

Conclusion: The Big 3 Packaging Podsy All-Purpose cleaner performed better than the competitor Formula 409 for all three substrates.