

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 10/22/2020

Experimenters: Zoe Lawson, Ross Goding

ClientType:

ProjectNumber: Project #1

Substrates: Ceramics, Plastic, Painted metal

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To test two all-purpose cleaners on their effectiveness to remove Hucker's Soil from painted steel, ceramic, and plastic coupons.

Experimental Procedure: Nine pre-weighed coupons per cleaner, three of each substrate, were contaminated with one gram of Hucker's Soil Formulation (Jiff Creamy Peanut Butter 9.2%, Salted Butter 9.2%, Arrowhead Mills stone-ground wheat flour 9.2%, Egg Yolk 9.2%, Evaporated milk 13.8%, Distilled water 45.8%, Printer's ink with boiled linseed oil 0.9%, Shaws saline Solution 2.7%) using a handheld swab and dried for two hours at room temperature (68 F). The contaminated coupons were weighed before placing three coupons per cleaner of the same substrate into a Gardner Straight Line Washability (SLW) unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled. The Wypal and each coupon were treated with three sprays and cleaned for 20 cycles (~30 seconds of cleaning). Clean coupons dried for 24 hours before final weights were taken.

## Results:

| Cleaner                         | Substrate     | Initial wt. | Final wt. | % Removed | Overall Average |
|---------------------------------|---------------|-------------|-----------|-----------|-----------------|
| Elcove All-Purpose Cleaner      | Painted Steel | 0.0463      | 0.0014    | 96.98     | 94.40           |
|                                 |               | 0.0667      | 0.0010    | 98.50     |                 |
|                                 |               | 0.0924      | 0.0041    | 95.56     |                 |
|                                 | Ceramic       | 0.1476      | 0.0074    | 94.99     |                 |
|                                 |               | 0.0953      | 0.0045    | 95.28     |                 |
|                                 |               | 0.0811      | 0.0075    | 90.75     |                 |
|                                 | Plastic       | 0.0894      | 0.0067    | 92.51     |                 |
|                                 |               | 0.1385      | 0.0099    | 92.85     |                 |
|                                 |               | 0.1046      | 0.0082    | 92.16     |                 |
| Better Life All-Purpose Cleaner | Painted Steel | 0.3456      | 0.0013    | 99.62     | 93.72           |
|                                 |               | 0.1096      | 0.0066    | 93.98     |                 |
|                                 |               | 0.0664      | 0.0053    | 92.02     |                 |
|                                 | Ceramic       | 0.2041      | 0.0042    | 97.94     |                 |
|                                 |               | 0.1812      | 0.0045    | 97.52     |                 |
|                                 |               | 0.0953      | 0.0104    | 89.09     |                 |
|                                 | Plastic       | 0.1170      | 0.0072    | 93.85     |                 |
|                                 |               | 0.1582      | 0.0073    | 95.39     |                 |
|                                 |               | 0.1567      | 0.0249    | 84.11     |                 |

## Summary:

|                      |                      |                                  |                    |                                     |                      |
|----------------------|----------------------|----------------------------------|--------------------|-------------------------------------|----------------------|
| <b>Substrates:</b>   |                      | Ceramics, Plastic, Painted metal |                    |                                     |                      |
| <b>Contaminants:</b> |                      | Hucker's Soil                    |                    |                                     |                      |
| <b>Company Name:</b> | <b>Product Name:</b> | <b>Conc.:</b>                    | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b> |
| Elcove               | All-Purpose Cleaner  | 100%                             | 94.40              | <input checked="" type="checkbox"/> |                      |
| Better Life          | All-Purpose Cleaner  | 100%                             | 93.72              | <input checked="" type="checkbox"/> |                      |

## Conclusion:

Elcove All-Purpose Cleaner was more effective than Better Life All-Purpose Cleaner at removing Hucker's Soil from painted steel, ceramic, and plastic.