

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021  
 DateRun: 07/28/2021  
 Experimenters: Ross Goding, Edward Judge, Anjali Bhagat  
 ClientType: Lab  
 ProjectNumber: Project #4  
 Substrates: Ceramics, Plastic, Chrome  
 PartType: Coupon  
 Contaminants: Soaps  
 Cleaning Methods: Manual Wipe  
 Analytical Methods: Gravimetric, Visual

Purpose: To test the effectiveness of Baking Soda in the removal of Bathroom Soil from various substrates.

Experimental Procedure: Baking Soda and a spray bottle of water were gathered to begin testing. Then, 3 coupons of each substrate (ceramic, plastic, chrome) were collected and initial weights were taken. Bathroom Soil was applied to each coupon and allowed to air dry for 24 hours. After the 24 hour dry time, the weights of the newly contaminated coupons were measured. All coupons were placed into a Gardner-scrub Abrasion Tester machine. Wypall cleaning cloths were attached to each of the 3 cleaning blocks used for the test. Each Wypall cloth and all coupons received 2 sprays of water, and Baking Soda was sprinkled across each coupon. 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: | Cleaner        | Substrate | Initial<br>wt of<br>cont. | Final<br>wt of<br>cont. | %Cont<br>Removed | %<br>AVG | %<br>Overall |
|          | Baking<br>Soda | Ceramic   | 0.0678                    | 0.0541                  | 20.21            | 10.93    | 33.99        |
|          |                |           | 0.0821                    | 0.0760                  | 7.43             |          |              |
|          |                |           | 0.0724                    | 0.0696                  | 3.87             |          |              |
|          |                | Plastic   | 0.1098                    | 0.0964                  | 12.20            | 34.77    |              |
|          |                |           | 0.0986                    | 0.0552                  | 44.02            |          |              |
|          |                |           | 0.1052                    | 0.0546                  | 48.10            |          |              |
|          |                | Chrome    | 0.0813                    | 0.0501                  | 38.38            | 56.28    |              |
|          |                |           | 0.0900                    | 0.0423                  | 53.00            |          |              |
|          |                |           | 0.0919                    | 0.0207                  | 77.48            |          |              |

|                      |                      |  |                    |                          |  |  |
|----------------------|----------------------|--|--------------------|--------------------------|--|--|
| Summary:             |                      | <b>Substrates:</b> Ceramics, Plastic, Chrome |                    |                          |  |  |
|                      |                      | <b>Contaminants:</b> Soaps                   |                    |                          |  |  |
| <b>Company Name:</b> | <b>Product Name:</b> | <b>Conc.:</b>                                | <b>Efficiency:</b> | <b>Effective:</b>        | <b>Observations:</b>   |  |
| Arm & Hammer         | Baking Soda          | 100%   | 33.99              | <input type="checkbox"/> | Baking Soda was not effective in the removal of Bathroom Soil from various substrates. |  |

Conclusion: Baking Soda showed little success in the removal of Bathroom Soil from ceramic, plastic, and chrome substrates.