

SageWay Solutions, LLC
Project 20055
All Purpose Cleaners
Soil Removal
ASTM D4488-A2 & A3 Soils

Living Clean
Grove Collaborative
Formula 409
Mrs. Meyer's



March 2, 2020

Gregory van Buskirk
SageWay Solutions, LLC
65 Panorama Ct
Danville, CA 94506

Dear Gregory:

You sent us a sample of **Living Clean APC** for Soil Removal Evaluations using ASTM D4488-Based Soils. You asked us to evaluate it against **Grove, Formula 409** and **Mrs. Meyer's**. A summary of our findings is below.

Formula 409 performed the Best in Overall Soil Removals.

Soil	Formula 409	Grove APC	Living Clean	Mrs. Meyers	Sig. Dif.
ASTM D4488-A2	73.1	72.6	72.4	60.3	1.4
ASTM D4488-A3	88.2	84.8	82.3	78.0	2.6
Crayon	34.9	6.8	5.7	5.5	4.9
Pencil	62.1	63.0	61.5	60.5	6.1
Overall Soil Removal Totals	258.3	227.2	221.9	204.3	
% of Best	Best	88%	86%	79%	

Descriptions of the test methods and sample information are attached.

Sincerely,

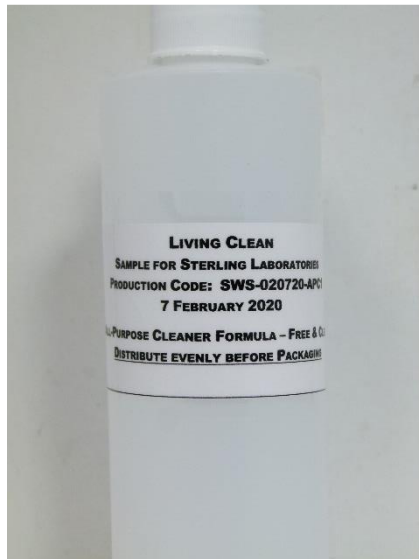
Tod Losey
Sterling Laboratories

Sample Information

All Purpose Cleaners

1. **Living Clean**, All-Purpose Cleaner Formula - Free & Clear,
Production Code: SWS-020720-APC1, 7 February 2020,
Sample For Sterling Laboratories,
Received 2-13-20 from SageWay Solutions
2. **Grove Collaborative**, All-Purpose Cleaner, Orange & Rosemary,
2-Pack, 1 oz. Concentrates,
Lot #: C089488 (on Tube Crimp), UPC #: 8 5326900656 2
Received 2-7-20 from Grove Collaborative
3. **Formula 409**, Multi-Surface Cleaner, Kills 995 Of Bacteria & Viruses,
32 fl. oz. (946 mL) Trigger-Spray Bottle,
(Lot #: A420023 16:08 5813GA1), UPC#: 0 4460000889 9,
Purchased 2-18-20 from Meijer, Toledo, OH
4. **Mrs. Meyer's**, Clean Day, Multi-Surface, Everyday Cleaner, Lemon Verbena,
Removes Dirt, Freshens Surfaces,
16 fl. oz. (473 mL) Trigger-Spray Bottle,
(Lot #: W3402), UPC #: 8 0812412441 7,
Purchased 2-18-20 from Meijer, Toledo, OH

Photographs of Samples All Purpose Cleaners



Living Clean APC



Grove APC



**Formula 409
Multi-Surface**



**Mrs. Meyer's
Multi-Surface**

TEST METHOD

All Purpose Cleaners Soil Removal

Soiled Panels

We applied grease from ASTM D4488-A2 (kitchen greases) to 4"x4" squares of wallboard coated with flat white latex paint. The soiled pieces were allowed to age overnight at room temperature.

We applied soil from ASTM D4488-A3 (grime) to Armstrong Vinyl Composite Tile, Pattern 51899, cut into 4"x4" squares; we then baked the tile at 100°C for 30 minutes.

We cut 4x6-inch pieces of White Formica Countertop and marked a 4-inch area to be soiled in the center of each. We soiled them with No. 2 Pencil and to a separate set we soiled them with black, Crayola Crayon.

All of the tiles were allowed to age at room temperature overnight.

We measured the reflectance of each of the groups before and after soiling using a Photovolt 577-A Reflectometer with a green tri-stimulus filter.

Sample Dilutions

- Formula 409, Mrs. Meyer's & Living Clean: used as received.
- Grove: Diluted 1 oz (1 Tube) into 15 oz of Toledo tap water

Soil Removal

We mounted a soiled panel in the tray of a Gardner Straight-Line Washability Apparatus. We applied 2 mL of solution to a soiled panel, allowed it to soak for 30-seconds, then scrubbed it with a water-dampened sponge for 10 cycles. After rinsing and drying we again measured the reflectance of each test piece as before. Three (3) panels were cleaned with each test product.

From the reflectance of each test piece before and after soiling and after cleaning, we calculated the percent soil removal, averaged them for each set of replicates, and calculated the statistically significant difference between the averages at the 95% level of confidence. We then totaled the results (Overall Soil Removal Total) for the soils for each of the products. If two totals differ by less than 10%, they are said to be comparable.