

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2015
 DateRun: 04/10/2015
 Experimenters: Nicholas Landberg
 ClientType: Cleaner Manufacturer
 ProjectNumber: Project #5
 Substrates: Porcelain
 PartType: Coupon
 Contaminants: Greases, Food
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric

Purpose: To measuring the soil removal performance of oven cleaning products used in the home.

Experimental Procedure: The test was performed on artificially applied soils on porcelain substrates. The experiment was based on the guidance from CSPA DCC-12 Screening the Efficacy of Oven Cleaners. Soil B from the standard was made using 85.4 wt.% butter, 6.5 wt.% sugar, 4.3 wt.% deionized water and 3.4 wt.% flour. The sugar was dissolved in water between 75 and 95 F. Then at room temperature or above, the softened butter was added to the solution and mixed thoroughly. Flour was added to the mixture and stirred until a uniform mixture was obtained. A uniform weight was applied to each of the twelve preweighed porcelain coupons. The coupons were then covered with aluminum foil to prevent air currents from disturbing the soil film during baking. The soil was aged in a preheated 475 F for 120 minutes. Once coupons were cooled to room temperature, dirty weights were recorded.

Cleaning was performed following the instructions on the supplied commercially available product. Product was sprayed onto the surface and allowed to soak for two hours and then wiped clean with a cloth. Final weights were recorded and effectiveness was calculated.

ChemistriesEvaluated: PLZ Oven Fume-Free; EasyOff Fume Free; PLZ Fresh & Clean Heavy Duty Oven Cleaner; Easy-Off Heavy Duty Oven Cleaner

Results: Table of Product Performance

| Cleaner | Initial wt | Final wt | % Removed |
|--------------------|------------|----------|-----------|
| PLZ Oven Fume-Free | | | |
| | 0.2533 | 0.1777 | 29.85 |
| | 0.1502 | 0.0874 | 41.81 |
| | 0.2138 | 0.0978 | 54.26 |
| | 0.2764 | 0.0478 | 82.71 |
| | 0.2425 | 0.0997 | 58.89 |
| | 0.2511 | 0.0302 | 87.97 |
| | 0.3735 | 0.0674 | 81.95 |
| | 0.2855 | 0.0489 | 82.87 |
| | 0.3044 | 0.0840 | 72.40 |
| | 0.3046 | 0.0758 | 75.11 |
| | 0.2658 | 0.0458 | 82.77 |
| | 0.1726 | 0.0034 | 98.03 |
| EasyOff Fume Free | | | |
| | 0.1468 | 0.0097 | 93.39 |
| | 0.2365 | 0.0048 | 97.97 |
| | 0.3130 | 0.0217 | 93.07 |
| | 0.1657 | 0.0235 | 85.82 |
| | 0.2098 | 0.0156 | 92.56 |
| | 0.2320 | 0.0149 | 93.58 |
| | 0.3259 | 0.0150 | 95.40 |
| | 0.3028 | 0.0139 | 95.41 |
| | 0.3778 | 0.0248 | 93.44 |
| | 0.3162 | 0.0051 | 98.39 |
| | 0.2227 | 0.0047 | 97.89 |
| | 0.2246 | 0.0218 | 90.29 |

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| | | | |
|---|--------|--------|-------|
| PLZ Fresh & Clean Heavy Duty Oven Cleaner | | | |
| | 0.2428 | 0.0684 | 71.83 |
| | 0.2059 | 0.0178 | 91.36 |
| | 0.3048 | 0.0468 | 84.65 |
| | 0.2452 | 0.0053 | 97.84 |
| | 0.2116 | 0.0106 | 94.99 |
| | 0.2378 | 0.0126 | 94.70 |
| | 0.2915 | 0.0248 | 91.49 |
| | 0.2653 | 0.0308 | 88.39 |
| | 0.2416 | 0.0128 | 94.70 |
| | 0.1401 | 0.0103 | 92.65 |
| | 0.2912 | 0.0498 | 82.90 |
| | 0.2953 | 0.0882 | 70.13 |
| Easy-Off Heavy-Duty Oven Cleaner | | | |
| | 0.1513 | 0.0841 | 44.42 |
| | 0.2503 | 0.1272 | 49.18 |
| | 0.1932 | 0.1253 | 35.14 |
| | 0.2137 | 0.1144 | 46.47 |
| | 0.2113 | 0.0453 | 78.56 |
| | 0.1939 | 0.1407 | 27.44 |
| | 0.2964 | 0.0899 | 69.67 |
| | 0.2997 | 0.0631 | 78.95 |
| | 0.3065 | 0.0538 | 82.45 |
| | 0.3106 | 0.1293 | 58.37 |
| | 0.2751 | 0.1243 | 54.82 |
| | 0.2446 | 0.0619 | 74.69 |

Summary:

| Substrates: | Porcelain | | | | |
|----------------------|---|--------|-------------|-------------------------------------|---------------|
| Contaminants: | Greases, Food | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Brand Buzz | PLZ Oven Fume-Free | 100 | 70.72 | <input type="checkbox"/> | |
| Reckitt Benckiser | Easy Off heavy Duty Oven Cleaner | 100 | 93.93 | <input checked="" type="checkbox"/> | |
| Brand Buzz | PLZ Fresh & Clean Heavy Duty Oven Cleaner | 100 | 87.97 | <input checked="" type="checkbox"/> | |

Conclusion:

The PLZ Fresh & Clean Heavy Duty Oven Cleaner performed on the same level as the commercially available EasyOff Fume Free oven cleaner. The Easy-Off Heavy Duty Oven Cleaner was the least effective and second least consistent product evaluated after PLZ Oven Fume-Free. It was especially lacking when compared to its PLZ counterpart, PLZ Fresh & Clean Heavy Duty Oven Cleaner, which performed nearly 30% more efficiently.