

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014
 DateRun: 11/14/2014
 Experimenters: Loc Nguyen, George Liang
 ClientType: Cleaning Equipment Mfr
 ProjectNumber: Project #1
 Substrates: Stainless Steel, Wood, Granite
 PartType: Coupon
 Contaminants: Oil, Food
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric
 Purpose: To evaluate products for light oil removal.

Experimental Procedure: Prewieghed stainless steel, granite, and wood coupons were coated with Vegetable Oil. The contaminated coupons were weighed again to determine the amount of soil added. Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and soaked with 1 spray of cleaning solution. Each coupon was sprayed once with the same cleaning solution. The cleaning unit was run for 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded, efficiencies were calculated and recorded.

Chemistries Evaluated: Force of Nature, Clorox Clean Up Cleaner & Bleach, Formula 409 All Purpose Cleaner Lemon Fresh
 Summary Substrates: Stainless Steel, Granite, Wood
 Contaminants: Vegetable Oil
 Force of Nature
 pH = 6.01
 Concentration = 250 ppm

Results:

| Cleaner | Initial wt | Final wt | % Removed |
|---|------------|----------|-----------|
| HealthierCleaning_LightOil_StainlessSteel_ForceOfNature | | | |
| | 0.5700 | 0.0177 | 96.89 |
| | 0.4391 | 0.0132 | 96.99 |
| | 0.5379 | 0.0289 | 94.63 |
| | | | |
| | 0.7805 | 0.0443 | 94.32 |
| | 0.7281 | 0.0273 | 96.25 |
| | 0.3035 | 0.0156 | 94.86 |
| | | | |
| | 0.5210 | 0.0194 | 96.28 |
| | 0.4106 | 0.0230 | 94.40 |
| | 0.5131 | 0.0197 | 96.16 |
| HealthierCleaning_LightOil_Granite_ForceOfNature | | | |
| | 0.5801 | 0.0126 | 97.83 |
| | 0.5943 | 0.0112 | 98.12 |
| | 0.9396 | 0.0139 | 98.52 |
| | | | |
| | 1.3993 | 0.0064 | 99.54 |
| | 0.9557 | 0.0154 | 98.39 |
| | 0.7525 | 0.0057 | 99.24 |
| | | | |
| | 1.0428 | 0.0166 | 98.41 |
| | 0.6653 | 0.0207 | 96.89 |
| | 0.7624 | 0.0170 | 97.77 |
| HealthierCleaning_LightOil_Wood_ForceOfNature | | | |
| | 0.2854 | 0.1639 | 42.57 |
| | 0.6748 | 0.0320 | 95.26 |
| | 0.6821 | 0.0202 | 97.04 |

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|--|--------|--------|-------|
| | | | |
| | 0.7265 | 0.0329 | 95.47 |
| | 0.7143 | 0.0612 | 91.43 |
| | 0.4659 | 0.0069 | 98.52 |
| | | | |
| | 0.6209 | 0.0371 | 94.02 |
| | 0.6334 | 0.1935 | 69.45 |
| | 0.5435 | 0.0305 | 94.39 |
| HealthierCleaning_LightOil_StainlessSteel_Clorox | | | |
| | 0.5890 | 0.0085 | 98.56 |
| | 0.5734 | 0.0100 | 98.26 |
| | 0.6335 | 0.0164 | 97.41 |
| | | | |
| | 0.5425 | 0.0102 | 97.17 |
| | 0.5569 | 0.0115 | 98.12 |
| | 0.6245 | 0.0206 | 97.93 |
| | | | |
| | 0.4781 | 0.0115 | 96.70 |
| | 0.7673 | 0.0111 | 98.05 |
| | 0.5075 | 0.0159 | 97.59 |
| HealthierCleaning_LightOil_Granite_Clorox | | | |
| | 0.7951 | 0.0194 | 98.55 |
| | 0.8391 | 0.0189 | 96.87 |
| | 0.5991 | 0.0160 | 97.01 |
| | | | |
| | 0.6868 | 0.0092 | 97.56 |
| | 0.5778 | 0.0073 | 97.75 |
| | 0.5684 | 0.0058 | 97.33 |
| | | | |
| | 0.3997 | 0.0331 | 99.01 |
| | 0.6357 | 0.0315 | 98.66 |
| | 0.5250 | 0.0322 | 98.74 |
| HealthierCleaning_LightOil_Wood_Clorox | | | |
| | 0.5257 | 0.0313 | 98.98 |
| | 0.6675 | 0.0313 | 91.69 |
| | 0.4798 | 0.0240 | 91.72 |

Summary:

| | | | | | |
|--------------------------------|---------------------------------|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Stainless Steel, Wood, Granite | | | | |
| Contaminants: | Oil, Food | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Healthier Cleaning Innovations | Force of Nature | 100 | 93.45 | <input checked="" type="checkbox"/> | |
| Clorox Company | Formula 409 All Purpose Cleaner | 100 | 83.00 | <input checked="" type="checkbox"/> | |

Conclusion:

Force of Nature and Clorox exhibited similar levels of cleaning for the three substrates evaluated. Both were more consistent than the Formula 409 on the wood surface cleaning. When excluding the wood cleaning for the 409, all three products were comparable.