

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004
 DateRun: 12/02/2004
 Experimenters: Jason Marshall
 ClientType: General
 ProjectNumber: Project #1
 Substrates: Stainless Steel
 PartType: Coupon
 Contaminants: Oil, Starch
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric

Purpose: To evaluate alternatives for a longer cleaning time.

Experimental Procedure: Five products were selected based on test results from the previous trial. Each product was diluted with DI water to vendor suggested concentration. The products were then heated to 130 F on a hot plate. The pre-contaminated stainless steel coupons were cleaned three coupons per product for another 10 minutes (15 total) using stir bar agitation. Cleaning was followed by a 15 second rinse in a tap water bath at 120 F and air blow off for 30 seconds at room temperature. Once dry, coupons were weighed a third time and efficiencies were calculated for each product tested.

Results: All five products improved with the additional 10 minutes. The Organic Cleaner/Degreaser removed over 80% of the oil/starch mix. The table below lists the amount of soil added, the amount remaining and the percent removed for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|---------------------------|------------|----------|-----------|
| SC Oven & Grill | 0.0383 | 0.0469 | -22.45 |
| | 0.0618 | 0.0370 | 40.13 |
| | 0.1409 | 0.0586 | 58.41 |
| VPW SC 1000 | 0.0799 | 0.0368 | 53.94 |
| | 0.1641 | 0.0863 | 47.41 |
| | 0.0563 | 0.0540 | 4.09 |
| Ecco Commercial | 0.2380 | 0.1603 | 32.65 |
| | 0.1275 | 0.0126 | 90.12 |
| | 0.0943 | 0.0232 | 75.40 |
| Organic Cleaner/Degreaser | 0.0477 | 0.0099 | 79.25 |
| | 0.1354 | 0.0292 | 78.43 |
| | 0.0785 | 0.0079 | 89.94 |
| Super H2O2 | 0.1261 | 0.0243 | 80.73 |
| | 0.0841 | 0.0236 | 71.94 |
| | 0.1771 | 0.0921 | 48.00 |

Summary:

| Substrates: | | Stainless Steel | | | | |
|--|--|-----------------|-------------|-------------------------------------|---------------|--|
| Contaminants: | | Oil, Starch | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: | |
| Gemtek Products | Safe Care (SC) Oven & Grill Cleaner | 10 | 25.36 | <input type="checkbox"/> | | |
| Orison Marketing | VPW SC 1000 | 20 | 35.15 | <input type="checkbox"/> | | |
| 1st Envirosafety Inc. - No Longer Exists | Ecco Commercial Cleaner - For Comparison Purposes Only | 25 | 66.05 | <input checked="" type="checkbox"/> | | |
| 1st Envirosafety Inc. - No Longer Exists | Organic Cleaner/Degreaser - For Comparison Purposes Only | 25 | 82.54 | <input checked="" type="checkbox"/> | | |
| Cleanline Products | H2O2 Super Citrus Concentrate | 10 | 66.89 | <input checked="" type="checkbox"/> | | |

Conclusion: All five products will be cleaned for an additional 15 minutes (30 minutes total). All other conditions will be kept the same.