

# 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:

|  |  |               |                    |                                     |                      |
|--|--|---------------|--------------------|-------------------------------------|----------------------|
| <b>Substrates:</b>                       | Stainless Steel  |               |                    |                                     |                      |
| <b>Contaminants:</b>                     | Oil, Starch  |               |                    |                                     |                      |
| <b>Company Name:</b>                     | <b>Product Name:</b>                                     | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b> |
| 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.