

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024  
 DateRun: 06/17/2024  
 Experimenters: Alexander Symko, Nasser Anise  
 ClientType: Lab  
 ProjectNumber: Project #8  
 Substrates: Stainless Steel  
 PartType: Coupon  
 Contaminants: Waxes  
 Cleaning Methods: Ultrasonics  
 Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of Micro-90 (2% cleaner, 98% water), BG-Clean 402 (10% cleaner, 90% water), Simple Green (10% cleaner, 90% water), and 1400 GD Detergent and Degreaser (10% cleaner, 90% water) in removing wax from stainless steel coupons as a preliminary test for Precision Fabricators

Experimental Procedure: three stainless steel coupons were used for each of the four cleaners for a total of 12 coupons. The initial weight of each coupon was recorded before applying the wax. The bottom third of each coupon was soiled by adding Meguiar's Cleaner Wax using a swab. The dirty weights of all coupons were then recorded. The coupons were then put into heated ultrasonics at 120F in Micro-90 (2% dilution with water), BG-Clean 402 (10% dilution with water), Simple Green (10% cleaner, 90% water), and 1400 GD Detergent and Degreaser (10% cleaner, 90% water) for 15 minutes. After the coupons were cleaned, they were left to air dry overnight. The next morning, the clean weights of all of the coupons were recorded.

| Cleaner       | Initial wt of cont. | Final wt of cont. | %Cont Removed | Average % Removal |
|---------------|---------------------|-------------------|---------------|-------------------|
| 1400 GD       | 0.2082              | 0.0476            | 77.14         | 83                |
|               | 0.0875              | 0.0187            | 78.63         |                   |
|               | 0.1095              | 0.0069            | 93.70         |                   |
| Micro-90      | 0.1269              | 0.0078            | 93.85         | 99                |
|               | 0.046               | -0.0069           | 115.00        |                   |
|               | 0.1486              | 0.0187            | 87.412        |                   |
| BG -Clean 402 | 0.1114              | 0.0121            | 89.14         | 92                |
|               | 0.1847              | 0.0176            | 90.47         |                   |
|               | 0.1763              | 0.0084            | 95.24         |                   |
| Simple Green  | 0.1791              | 0.0198            | 88.94         | 81                |
|               | 0.1699              | 0.0298            | 82.46         |                   |
|               | 0.2259              | 0.0651            | 71.18         |                   |

Summary:

| <b>Substrates:</b>                 | Stainless Steel  |                        |             |                                     |                           |
|------------------------------------|--|------------------------|-------------|-------------------------------------|---------------------------|
| <b>Contaminants:</b>               | Waxes  |                        |             |                                     |                           |
| Company Name:                      | Product Name:  | Conc.:                 | Efficiency: | Effective:                          | Observations:             |
| International Products Corporation | Micro 90 Conc.   | 2% cleaner, 90% water  | 99.00       | <input checked="" type="checkbox"/> | On Meguiar's Cleaning Wax |
| Amiran BioChemicals                | BG-Clean 402   | 10% cleaner, 90% water | 92.00       | <input checked="" type="checkbox"/> | On Meguiar's Cleaning Wax |
| Brulin Corporation                 | 1400GD Degreaser   | 10% cleaner, 90% water | 83.00       | <input type="checkbox"/>            | On Meguiar's Cleaning Wax |
| Simple Green                       | Simple Green Clean Building All Purpose Cleaner Concentrate - General Purpose Cleaners | 10% cleaner, 90% water | 81.00       | <input type="checkbox"/>            | On Meguiar's Cleaning Wax |

Conclusion: Coupon 5 appears to be an outlier, as more than 100% of contaminants were removed. This could be caused by the coupon not being completely clean, therefore more than what was applied was removed. Overall, Micro-90 and BG-Clean 402 were effective in cleaning wax from stainless steel. 1400 GD and Simple Green were ineffective in cleaning wax from stainless steel.