

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2010
DateRun: 05/20/2010
Experimenters: Jason Marshall, Heidi Wilcox, Timothy Weil
ClientType: Biomedical Device Manufacturer
ProjectNumber: Project #1
Substrates: Glass/Quartz
PartType: Coupon
Contaminants: Waxes
Cleaning Methods: Immersion/Soak
Analytical Methods:

Purpose: To evaluate selected products for their effectiveness in removing wax from a glass substrate

Experimental Procedure: Twelve products were selected from the TURI lab's database, www.cleansolutions.org, to evaluate their effectiveness in removing wax from a glass substrate. Thirty-six pre-weighed glass coupons were coated with the wax provided by the client. Coupons were weighed a second time to determine the amount of wax added. Three coupons were immersed into 400 ml of each product in 600 ml glass beakers and cleaned for 5 minutes at room temperature with no agitation. Final weights were recorded and efficiencies were calculated.

Results:

| Product | Initial Wt | Dirty wt | % Removed |
|------------------------|------------|----------|-----------|
| Inproclean 3800 (100%) | | | |
| | 0.0538 | 0.0821 | -52.60 |
| | 0.0798 | 0.1056 | -32.33 |
| | 0.1111 | 0.1384 | -24.57 |
| SC 1000 (100%) | | | |
| | 0.0788 | 0.0782 | 0.76 |
| | 0.0839 | 0.0859 | -2.38 |
| | 0.1318 | 0.1344 | -1.97 |
| SolSafe 245 | | | |
| | 0.2616 | 0.2006 | 23.32 |
| | 0.1772 | 0.1153 | 34.93 |
| | 0.1060 | 0.0512 | 51.70 |
| DS 108 | | | |
| | 0.1353 | 0.1048 | 22.54 |
| | 0.1466 | 0.1234 | 15.83 |
| | 0.1564 | 0.1369 | 12.47 |
| CitriKleen XPC | | | |
| | 0.1385 | 0.1266 | 8.59 |
| | 0.1030 | 0.1149 | -11.55 |
| | 0.0619 | 0.0578 | 6.62 |
| Bio T Max | | | |
| | 0.0419 | 0.0265 | 36.75 |
| | 0.1392 | 0.0892 | 35.92 |
| | 0.0644 | 0.0366 | 43.17 |
| Canola Gold CE 110 | | | |
| | 0.1171 | 0.2360 | -101.54 |
| | 0.1007 | 0.1878 | -86.50 |
| | 0.0712 | 0.1702 | -139.05 |
| Hubtron PB | | | |
| | 0.0500 | 0.0101 | 79.80 |
| | 0.0915 | 0.0444 | 51.48 |
| | 0.0757 | 0.0325 | 57.10 |

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| | | | |
|----------------------|--------|--------|-------|
| Inproclean 3800 (5%) | | | |
| | 0.1244 | 0.1293 | -3.94 |
| | 0.1319 | 0.1398 | -5.99 |
| | 0.1565 | 0.1596 | -1.98 |
| SC 1000 (5%) | | | |
| | 0.0863 | 0.0863 | 0.00 |
| | 0.0648 | 0.0680 | -4.94 |
| | 0.0971 | 0.1045 | -7.62 |
| SoyClear 1500 | | | |
| | 0.1762 | 0.1822 | -3.41 |
| | 0.2050 | 0.2125 | -3.66 |
| | 0.1762 | 0.1810 | -2.72 |
| D Greeze 500 LO | | | |
| | 0.1271 | 0.1307 | -2.83 |
| | 0.1118 | 0.1154 | -3.22 |
| | 0.0917 | 0.0947 | -3.27 |

Summary:

| | | | | | |
|---------------------------|-------------------------------------|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Glass/Quartz | | | | |
| Contaminants: | Waxes | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Oakite Products | Inproclean 3800 | 100 | -36.50 | <input type="checkbox"/> | |
| Gemtek Products | SC 1000 Aqueous Cleaner Concentrate | 100 | -1.20 | <input type="checkbox"/> | |
| Bio Chem Systems | Solsafe 245 | 100 | 36.65 | <input type="checkbox"/> | |
| Dysol | DS 108 Wipe Solvent | 100 | 16.95 | <input type="checkbox"/> | |
| Pentone Corporation | Citrikleen XPC | 100 | 1.22 | <input type="checkbox"/> | |
| Bio Chem Systems | Bio T Max | 100 | 38.61 | <input type="checkbox"/> | |
| AG Environmental Products | Canola Gold CE110 | 100 | -109.03 | <input type="checkbox"/> | |
| Hubbard Hall Inc | Hubtron PB | 100 | 62.78 | <input checked="" type="checkbox"/> | |
| Oakite Products | Inproclean 3800 | 5 | -3.97 | <input type="checkbox"/> | |
| Gemtek Products | SC 1000 Aqueous Cleaner Concentrate | 5 | -5.31 | <input type="checkbox"/> | |
| AG Environmental Products | Soy Clear 1500 | 100 | -3.26 | <input type="checkbox"/> | |
| Transene Company, Inc. | D Greeze 500 LO | 100 | -3.11 | <input type="checkbox"/> | |

Conclusion:

The Hubtron PB, will be tested again using a longer time immersion soak and possibly heat. A dibasic ester product and a newly received bio-based product will also be tried in the next round of testing.