CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2010

DateRun: 05/19/2010

Experimenters: Heidi Wilcox, Timothy Weil

ClientType: Biomedical Device Manufacturer

ProjectNumber: Project #1

Substrates: Glass/Quartz

PartType: Coupon

Contaminants: Waxes

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

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

Experimental Procedure: Three products were selected for this trial. One product from the previous trial that showed the most promise, an ester-based product and a bio-based cleaner recently received from a vendor. Nine pre-weighed glass coupons were weighed, coated with the wax provided by the client and weighed again to determine the amount of wax added. Three coupons were immersed into 150 ml of each product in 250 ml glass beakers and cleaned for 5 minutes at room temperature with no agitation. Final weights were recorded and efficiencies were calculated.

Results: The Hubtron product was the only successful product using immersion cleaning to remove the client provided wax with no rinse or wipe. However, the wax that was immersed in the Bio Solv seemed to change color and may be acting on it even though it did not remove any yet. The table lists the amount of soil added to the coupons, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Hubtron PB			
	0.5152	0.1737	66.29
	0.3345	0.0985	70.55
	0.4854	0.1412	70.91
DBE 6			
	0.5335	0.5252	1.56
	0.4124	0.4220	-2.33
	0.3226	0.3157	2.14
Bio Solv			
	0.5612	0.5612	0.00
	0.4095	0.4000	2.32
	0.6104	0.6128	-0.39

Summary:

Substrates:	Glass/Quartz				
Contaminants:	Waxes				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Hubbard Hall Inc	Hubtron PB	100	62.78	☑	
Invista S.a.r.l	Flexisolv DBE 6 ester	100	0.46	☐	

Conclusion: The Hubtron product will work for this client as a drop-in replacement in their vapor degreaser or a soak solvent. Due to its health effects of nPB, another product with a better EH&S profile for the wax removal would like to be found. Therefore, the Bio Solv and DBE 6 will be tested again in a 10-minute immersion soak and a wipe after using a Wipe All lab paper towel.