CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 09/18/2002

Experimenters: Jason Marshall

ClientType: Adhesive Manufacturer

ProjectNumber: Project #2

Substrates: Ceramics

PartType: Coupon

Contaminants: Coatings, Resins/Rosins

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To identify an alternative cleaner for removing toluene based resin coating

Experimental Procedure: Eight cleaners were selected from the lab's database of past testing and vendor information based on client supplied information. Four semi-aqueous products and four aqueous based products were chosen. The semi-aqueous products were used at full strength in 400 ml beakers while the aqueous products were used at 10%. All products were used at room temperature. Twenty-four preweighed coupons were coated with Anderson Development Co Escoat P-20 carbamic ester/aromatic hydrocarbon coating (108-88-3) using a hand held swab. Coupons were allowed to dry for two hours at room temperature. Once dry, a second weighing was performed to determine the amount of contaminant that was applied. Three coupons were immersed in each solution for 5 minutes at room temperature. Following cleaning, coupons were rinsed in a tap water bath for 15 seconds and dried using air knives for 2 minutes both at room temperature. Once dry, coupons were weighed a final time and efficiencies were calculated.

Results: Only one product, Solsafe 245, was moderately successful after immersion cleaning. Vertec Biogold resulted in the coupon gaining weight due to inefficient rinsing of the cleaner. After coupons were wiped three quick times with a paper towel, the efficiencies went up for all cleaners. Table 1 lists the immersion cleaning results and the second table shows the results after wiping.

Immersion Cleaning				
Cleaner	Coupon 1	Coupon 2	Coupon 3	Average
Vertec Biogold	-89.23	-241.32	-214.94	-181.83
Metabolix E3HB	-5.79	29.75	50.44	24.80
Ionox HC2	23.38	24.64	39.78	29.27
Solsafe 245	89.92	80.51	77.34	82.59
Polyspray	73.10	62.09	64.94	66.71
Beyond 2006	77.47	73.62	71.43	74.17
Daraclean 200	33.71	71.55	65.56	56.94
Shopmaster FF	77.62	72.11	56.67	68.80
Wiped Cleaning				
Cleaner	Coupon 1	Coupon 2	Coupon 3	Average
Vertec Biogold	41.23	81.82	-3.90	39.72
Metabolix E3HB	40.55	43.34	68.51	50.80
Ionox HC2	50.15	46.79	70.77	55.90
Solsafe 245	94.96	88.71	84.9	89.52
Polyspray	82.83	76.60	76.63	78.69
Beyond 2006	86.53	81.92	85.42	84.63
Daraclean 200	57.30	81.95	76.01	71.76
Shopmaster FF	89.42	83.54	79.08	84.01

Summary:

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Substrates:	Ceramics				
Contaminants:	Coatings, Resins/Rosins				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Vertec BioSolvents	VertecBio Gold Unscented Part Cleaner	100	39.72	☐	
Metabolix Inc	Metabolix E3HB	100	50.80	☐	
Kyzen Corporation	Ionox HC 2	100	55.90	☐	
Bio Chem Systems	Solsafe 245	100	89.52	☑	
US Polychem Corporation	Polyspray Jet 790 XS	10	78.69	☐	
Today & Beyond	Beyond 2006	10	84.63	☐	
Magnaflux	Daraclean 200	10	71.76	☐	
Buckeye International	Shopmaster FF	10	84.01	☐	

Conclusion: Solsafe 245 will be evaluated again using mechanical agitation.