CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2000
DateRun:	01/09/2000
Experimenters:	Jason Marshall, Nicole Vayo
ClientType:	Vessel Cleaning Company
ProjectNumber:	Project #2
Substrates:	Stainless Steel
PartType:	Coupon
Contaminants:	Adhesive, Resins/Rosins
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric, Visual
Purpose:	To continue the search for a cleaner that will remove the same contaminant.
Experimental Procedure:	Eight solutions were selected from the lab's All Tests database based on past effective cleaning of similar contaminants. Four products were diluted to 20% in 600 ml beakers using DI water. The other products were used at 100%. The solutions were heated to 130 F on a hot plate. Twenty-four pre-weighed coupons were contaminated and weighed again. Three coupons were placed in each cleaner for five minutes with stir-bar agitation. Coupons were rinsed in a tap water bath for 30 seconds at 120 F and dried using a Master Appliance Corp, Hot-air gun model HG-301A. One coupon from each set was wiped with a paper towel. Observations were recorded and weights were measured. The remaining two coupons were re-immersed into the cleaning solutions and soaked at room temperature for 30 minutes, rinsed observed, wiped clean and weighed. Efficiencies were calculated for all eight products. SUBSTRATE MATERIAL: Stainless Steel coupons CONTAMINANTS Ashland Specialty Chemical Co, Acrylic Resin solution, Aroset 1872 Z 40 (CAS#s: 108-88-3, 141-78-6, 142-82-5, 67-63-0) CONTAMINATING PROCESS USED: Coupons were coated with contaminant with a handheld swab. Coupons were then allowed to dry for one hour.
Results:	The four products used at full strength showed good cleaning after the first five minutes of cleaning. The coupons that were wiped ranged from 87 to 96% removal. The four products used diluted only removed under 20% of the contaminants and only improved to about 40% after the 30-minute cleaning. Table 2 lists the calculated efficiencies for both cleaning times. The observations made at each period of cleaning were recorded in Table 3.

Table 2. Cleaning Results

Cleaner	Valtron	Daraclean	All Purpose	Bio T 300 B	Resineater	D-Greeze	69 MC	SI #4
5 min with wipe	7.82	9.33	9.96	93.29	92.23	87.25	16.92	95.96
30 min with wipe	1.50	15.75	28.14	94.90	96.46	97.76	15.52	102.69
	4.70	31.13	41.22	98.72	99.21	98.72	17.71	98.86
Average	3.10	23.44	34.68	96.81	97.83	98.24	16.62	100.78

Table 3. Observation

	Valtron	Daraclean	All Purpose	Bio T 300 B	Resineater	D-Greeze 500	69 MC	SI #4
5 min w/ wipe	sticky, hard	sticky, hard	dull, sticky	soft	soft	soft, sticky	hard, sticky	easy wipe
				easy wipe	easy wipe			not mix w/ water
30 min w/ wipe	poor wipe	poor wipe	poor wipe	little remaining	easy wipe	some residue	poor wipe	easy wipe
	rub off	not sticky	not sticky	easy wipe		OK wipe	not sitcky	very messy

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		rub off	rub off					

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Summary:

Substrates:	Stainless Steel				
Contaminants:	Adhesive, Resins/Rosins				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Valtech Corporation	Valtron SP 2250 2LF	20	3.10	☐	
Magnaflux	Daraclean 282 GF	20	23.44	☐	
Safe Science Inc	Safe Science All Purpose (Industrial)	20	34.68	☐	
Bio Chem Systems	Bio T 300 B	100	96.81	☑	
Finger Lakes Chemical	FLSC-12 Resineater Sample	100	97.83	☑	
Transene Company, Inc.	D Greeze 500 LO	100	98.24	☑	
US Polychem Corporation	Product 69 MC	100	16.62	☐	
Savogran Company	SI #4 Coating Remover	100	100.78	☑	

Conclusion:

Envirosolutions, Fingerlakes and Sovlent Kleene all had products that removed the contaminant with relatively little difficulty. Even though the Savogran product had a high efficiency, the rinsing of the coupons created a white film. When the coupons were removed to be wiped, there was a lot of the cleaning solutions remaining on the coupons which had to be wiped off in addition to the contaminant.