CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 06/17/1999

Experimenters: Jason Marshall

ClientType: Vessel Cleaning Company

ProjectNumber: Project #2

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Resins/Rosins

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To find a cleaning solution that will work in a high pressure spray wash system for cleaning tanker trucks.

Experimental Procedure: Seven cleaners were selected on vendor supplied information and from the lab's Effective Test Conditions Database of past trials. The chemistries were then diluted to 10% (except one) by volume using DI water in 1000 mL Pyrex beakers.
Twenty-one preweighed coupons were contaminated and weighed again. Three coupons were cleaned in each cleaner for ten minutes using stir-bar agitation. Coupons were rinsed in a tap water bath for 30 seconds at 120 F and then allowed to air dry for two hours. Final weights were recorded, and cleaning efficiencies calculated.
SUBSTRATE MATERIAL: Stainless Steel coupons (316 B-80)
CONTAMINANTS: Solutia Gelva Multipolymer Resin Solution 2895 (CAS#s: 50862-46-9; 141-78-6; 142-82-5; 67-63-0; 64-17-5; 108-05-4)
CONTAMINATING PROCESS USED: Coupons were coated with contaminant with a handheld swab. Coupons were then allowed to dry for one hour.

Results: During the cleaning cycle, none of the cleaners appeared to work very well at the dilutions used. After calculating the cleaning efficiencies, very little of the contaminant was removed. Table 2 lists the calculated efficiencies for each cleaner.

Table 2. Cleaning Efficiencies

	AW Chesterton	Buckeye	Envirosolutions	Oakite	T-Square	AG Environmental	Savogran
Coupon 1	4.54	1.93	11.40	-6.00	1.05	8.78	9.96
Coupon 2	15.25	8.17	11.13	2.34	-6.36	3.73	11.83
Coupon 3	12.17	3.84	6.97	5.77	-0.19	-1.09	6.48
Ave	**10.65**	**4.65**	**9.84**	**0.70**	**-1.83**	**3.81**	**9.42**
Std Dev	**5.52**	**3.20**	**2.48**	**6.05**	**3.97**	**4.94**	**2.72**

Summary:

Substrates:	Stainless Steel
Contaminants:	Resins/Rosins

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
AW Chesterton	803 Industrial & Marine Solvent II	10	10.65	☐	
Buckeye International	Shopmaster	10	4.65	☐	
Bio Chem Systems	Bio T 300 B	10	9.84	☐	
Oakite Products	Inproclean 4000 T	10	0.70	☐	
Tarksol Inc	Tarksol HTF 85 B	10	-1.83	☐	
AG Environmental Products	Soy Gold 2000	10	3.81	☐	
Savogran Company	HD-34 Cleaner Degreaser	50	9.42	☐	

Conclusion: The three products with the efficiencies around 10 (AW Chesterton, Envirosolutions and Savogran) and the one product with the negative removal (T-Square) will all be retested at full strength.