

# 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
<b>Ave</b>	<b>10.65</b>	<b>4.65</b>	<b>9.84</b>	<b>0.70</b>	<b>-1.83</b>	<b>3.81</b>	<b>9.42</b>
<b>Std Dev</b>	<b>5.52</b>	<b>3.20</b>	<b>2.48</b>	<b>6.05</b>	<b>3.97</b>	<b>4.94</b>	<b>2.72</b>

Summary:

<b>Substrates:</b>	Stainless Steel					
<b>Contaminants:</b>	Resins/Rosins					
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>	
AW Chesterton	803 Industrial & Marine Solvent II	10	10.65	<input type="checkbox"/>		
Buckeye International	Shopmaster	10	4.65	<input type="checkbox"/>		
Bio Chem Systems	Bio T 300 B	10	9.84	<input type="checkbox"/>		
Oakite Products	Inproclean 4000 T	10	0.70	<input type="checkbox"/>		
Tarksol Inc	Tarksol HTF 85 B	10	-1.83	<input type="checkbox"/>		
AG Environmental Products	Soy Gold 2000	10	3.81	<input type="checkbox"/>		
Savogran Company	HD-34 Cleaner Degreaser	50	9.42	<input type="checkbox"/>		

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.