# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 06/16/1999

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.