CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 12/16/2004

Experimenters: Jason Marshall

ClientType: General

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Oil, Starch

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate products on client contaminated coupons.

Experimental Procedure: Three products from the previous trials were diluted with DI water to vendor suggested concentration. The products were then heated to 160 F on a hot plate.

The pre-contaminated stainless steel coupons were weighed to determine the amount of oil/starch was applied during the week long process. Three coupons were cleaned in each product for 30 minutes total using stir bar agitation. Cleaning was followed by a 15 second rinse in a tap water bath at 120 F and air blow off for 30 seconds at room temperature. Once dry, coupons were weighed a third time and efficiencies were calculated for each product tested.

Results: The client's current cleaner removed over 96% of the applied oil/starch mix which was what the Organic Cleaner/Degreaser was at 25%. The diluted alternatives removed under 60% of the mix during the 30 minute cleaning process at 160 F. The table below lists the amount of soil added, the amount remaining and the percent removed for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Liquid Chembrite	0.1188	0.0004	99.66
	0.0790	0.0003	99.62
	0.2087	0.0189	90.94
Organic Cleaner/Degreaser	0.1303	0.0369	71.68
	0.3011	0.2337	22.38
	0.1263	0.0537	57.48
VPW SC 1000	0.1204	0.0555	53.90
	0.1452	0.0543	62.60
	0.1363	0.0510	62.58
Liquid Chembrite	0.3564	0.0118	96.69

Summary:

Substrates:	Stainless Steel				
Contaminants:	Oil, Starch				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Rochester Midland Corporation	Liquid Chembrite	3	96.24	☑	
1st Envirosafety Inc. - No Longer Exists	Organic Cleaner/Degreaser - For Comparison Purposes Only	2.5	50.52	☐	
Orison Marketing	VPW SC 1000	5	59.70	☐	

Conclusion: The three products will be used at 200 F for one hour of immersion cleaning using the heavily soiled supplied coupons. The Organic/Degreaser will be used at 5% in stead of 2.5%. (The one coupon from this trial that was very contaminated, 0.3011g, will be cleaned using the 2.5% solution).