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 at higher temperature and longer time for heavily solid coupon.

Experimental Procedure: Three products were diluted with DI water to vendor suggested concentration. The products were then heated to 200 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. One coupon was cleaned in each product for 60 minutes using no 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: All three products removed over 95% of the contaminant mix from the coupons within an hour of soaking at 200 F. Even though the Liquid Chembrite coupon looked the cleanest, the other two products had overall higher cleaning efficiencies. There was no improvement in soaking the coupon in the 2.5% dilution of the Organic Cleaner/ Degreaser. The table lists the amount of contamination was present initially, the amount remaining after cleaning and the effectiveness of each cleaner.

Cleaner	Initial wt	Final wt	% Removed
Liquid Chembrite	0.3564	0.0118	96.69
Organic Cleaner/ Degreaser	0.9208	0.0234	97.46
VPW SC 1000	1.1592	0.022	98.1
Organic C/D 2.5%	0.2337	0.2229	4.62
(increases in efficiency from previous trial.)			

Summary:

Substrates:	Stainless Steel				
Contaminants:	Oil, Starch				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Rochester Midland Corporation	Liquid Chembrite	3	96.69	☑	
1st Envirosafety Inc. - No Longer Exists	Organic Cleaner/Degreaser - For Comparison Purposes Only	5	97.46	☑	
Orison Marketing	VPW SC 1000	5	98.10	☑	

Conclusion: Additional testing can be conducted for two week soiling period. Cleaning would be done at 200 F for at least one hour.