CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 11/04/1999

Experimenters: Jason Marshall

ClientType: Consultant

ProjectNumber: Project #1

Substrates: Liquid

PartType: Coupon

Contaminants: Alcohol

Cleaning Methods:

Analytical Methods: Colorimeter

Purpose: To measure contamination levels of cleaning solution over five days of use.

Experimental Procedure: A 2% solution was made of Micro 90 using DI water in 400 mL beaker. Using LaMotte's Smart Colorimeter to evaluate the standards using the chlorine test. The general test procedure was first to zero the instrument using 0% standard (2% Micro 90). The five unknown samples were analyzed. Unknown concentrations were calculated from previously determined correlation.

SUBSTRATE MATERIAL: Liquid-Dirty Cleaning Solution
CONTAMINANTS: DuPont Evanol Concentrated (Vinyl Alcohol Polymers & Copolymers CAS#s: 9002-89-5, 25213-24-5, 54626-91-4; Methanol Bulk/Packaged CAS #: 67-56-1; Sodium Acetate CAS#: 127-09-3)
CONTAMINATING PROCESS USED: Samples received with Evanol in cleaning solution

Results: The unknown concentrations were found to range from 0% to 30% Evanol using the three correlations determined in trials 6, 15 and 17. The average value for each date was calculated. All data is listed in Table 1.

Table 1. Calculation of Unknown Samples.

Colorimeter	Soil Loading (% Evanol)						
Readings	1	2	Ave	Trial 6	Trial 15	Trial 17	Average %
Blank	0	0	0	-0.71	0.15	0.95	0.13
6-Oct	0.14	0.14	0.14	19.29	20.74	17.62	19.21
8-Oct	0.2	0.2	0.2	27.86	29.56	24.76	27.39
13-Oct	0.02	0.03	0.03	2.86	3.82	3.93	3.54
15-Oct	0.08	0.08	0.08	10.71	11.91	10.48	11.03
20-Oct	0	0.01	0.01	0	0.88	1.55	0.81
22-Oct	0.05	0.05	0.05	6.43	7.5	6.9	6.94
27-Oct	0.04	0.04	0.04	5	6.03	5.71	5.58
28-Oct	0.05	0.05	0.05	6.43	7.5	6.9	6.94

The equations used for determining these values are listed in Table 2.

Table 2. Equations Used
Trial 6 y = 0.007*x + 0.005
Trial 15 y = 0.0068*x - 0.001
Trial 17 y = 0.0084*x -0.008
x = (y-b)/m

Summary:

Substrates:	Liquid				
Contaminants:	Alcohol				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
International Products Corporation	Micro 90 Conc.	2	0.00	☐	

Conclusion: Values for the unknown samples were found to be higher for the second date of the sampling period. Average levels of Evanol percent ranged from 0.81% to 27%.