CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2010
DateRun:	06/20/2010
Experimenters:	Jason Marshall, Timothy Weil
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Stainless Steel, Wood
PartType:	Coupon
Contaminants:	Inks, Paints
Cleaning Methods:	Manual Wipe
Analytical Methods:	Visual
Purpose:	To evaluate the performance of two solvents for graffiti removal
Experimental Procedure:	One set of stainless steel and wood coupons were coated with Dayetek Daye Black quick dry lithographic ink using a handheld swab. A second set of stainless steel and wood coupons were coated with Barnes Group Bowman Distribution Industrial Finish Gloss Black spray paint No 24700. Coated coupons were allowed to sit for several hours for drying of applied ink/paint. Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and soaked with 5-7 sprays of cleaning solutions. Each coupon was sprayed 7-10 times with the same cleaning solution. The cleaning unit was run for 20 cycles (~33 seconds). At the end of cleaning, visual observations were made, and the coupons were ranked from best to worst for each of the cleaning solvents.
Results:	The spray paint was the easier of the two contaminants to be removed using 30 seconds of manual cleaning. Both the supplied products were ranked high for the ink removal from stainless steel. The SG22002D was ranked as the most effective of the four solvents for both surfaces for ink removal. Observations and rankings for each set of coupons and contaminants are listed below.

Product	Substrate	Contaminant	Rank 1	Rank 2	Rank 3	Average	Observations
SG21000D	Steel	Ink	2	2	2	2.0	~75% removal
SG22002D			1	1	1	1.0	Almost full removal
50:50 mix			4	4	4	4.0	>25% removal
DBE			3	3	3	3.0	>50% removal
SG21000D	Steel	Paint	3	3	4	3.3	Little removal; ink breakdown visible - purple tint
SG22002D			2	2	2	2.0	Some removal; no breakdown
50:50 mix			1	1	1	1.0	Partial removal; partial breakdown of ink
DBE			4	4	3	3.7	Significant residue
SG21000D	Wood	Ink	3	3	3	3.0	>50% removal; still some residue
SG22002D			1	1	1	1.0	Little residue; little staining
50:50 mix			4	4	4	4.0	~50% removal;

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							residue; staining
DBE			2	2	2	2.0	>7% removal; little staining; some residue
SG21000D	Wood	Paint	1	1	1	1.0	Little removal; some staining; no visible breakdown
SG22002D			4	2	3	3.0	Little residue; lots of staining
50:50 mix			3	3	3	3.0	More visible removal; staining
DBE			2	4	2	2.7	Residue; staining

When combining the rankings for both surfaces and contaminants, the two supplied products rated as the top two products as shown in the second table.

Overall Ink/paint ranking	
SG21000D	2.3
SG22002D	1.8
50:50 mix	3.0
DBE	2.8

Summary:

Substrates:	Stainless Steel, Wood				
Contaminants:	Inks, Paints				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Segetis	Segetis SG21000D	100	0.00	☑	Rank 2.3
Segetis	Segetis SG22002D	100	0.00	☑	Rank 1.8
Segetis	Segetis SG21000D	50	0.00	☐	Rank 3; 50:50 mix with SG22002D
Fisher Scientific	Absolute Ethanol	0	0.00	☐	
DuPont	DBE 6	100	0.00	☐	Rank 2.8

Conclusion:

The two supplied products were ranked as the top two products evaluated for ink and paint removal from stainless steel and wood surfaces. One follow-up test will be conducted to determine the number of cycles needed to completely remove the ink/paint from the coupons. A second trial will be conducted to determine gravimetric removal of both ink and paint from the surfaces.