CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 10/01/2002

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Inks

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate client supplied and requested cleaners for ink removal

Experimental Procedure: Nine preweighed coupons were coated with a Sheetfed Offset Ink Super Tech Dense Black AD-2340 lithographic ink and nine other preweighed coupons were coated with a newspaper ink using hand held swabs. All eighteen coupons were allowed to sit overnight to dry. Coupons were then reweighed using Denver Instruments A250 balance. Three coupons were cleaned using Gardner Instruments Straight Line Washability Unit for a maximum of 120 cycles (3.33 minutes). The unit was used in conjunction with a paper towel soaked in the cleaning solution. After 90 cycles, the paper towel was removed and replaced with a fresh soaked towel. At the end of the cleaning cycle, coupons were wiped dry using a dry paper towel. Final weights were recorded and efficiencies were calculated.

Results: All three cleaners were successful in removing both ink types. The lithographic ink needed longer cleaning times than the newspaper ink did. All cleaners removed the lithographic ink in 120 cycles, a little over 3 minutes. The newspaper ink was removed within 60 cycles, just over a minute and a half. The table below lists the efficiencies for each coupons cleaned and also lists the cycles required for cleaning.

Table 1. Cleaning Efficiencies

	Cleaner	Coupon 1	Coupon 2	Coupon 3	Average
Lithographic	Ink Zap	99.73	99.70	99.75	99.73
	USA Wash	99.86	99.84	99.81	99.84
	PES 320	99.76	99.80	99.83	99.80
Newspaper	Ink Zap	99.34	99.25	99.07	99.22
	USA Wash	99.66	99.51	99.31	99.49
	PES 320	99.44	99.49	99.37	99.43

Table 2 Cleaning Cycles

	Ink Zap	USA Wash	PES 320	Ink Zap	USA Wash	PES 320
Cycles	120	100	120	10	24	60
Stop at	180	100	120	40	60	60

Summary:

Substrates:	Aluminum				
Contaminants:	Inks				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Vertec BioSolvents	Ink Zapper	100	99.73	☑	Lithographic Ink
Nensco	USA Wash	100	99.84	☑	Lithographic Ink
Prisco Printers Service	PES 320	100	99.80	☑	Lithographic Ink
Vertec BioSolvents	Ink Zapper	100	99.22	☑	Newspaper Ink
Nensco	USA Wash	100	99.49	☑	Newspaper Ink
Prisco Printers Service	PES 320	100	99.43	☑	Newspaper Ink

Conclusion: All three products were capable of removing the inks using a manual wiping technique.