CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998

DateRun: 06/21/1998

Experimenters: Jason Marshall

ClientType: Printing Company

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Inks

Cleaning Methods: Manual Wipe

Analytical Methods: Visual, Wipe

Purpose: Evaluation of cleaning for additional inks

Experimental Procedure: Three chemistries from the previous experiment were used in addition to three other chemistries. One preweighed aluminum coupon for each cleaner was coated with ink using a swab. The coupons sat for three hours and weighed again. A plastic eye dropper was used to transfer the full-strength cleaner onto the coupon. After five minutes the coupon was wiped with a paper towel to determine if any cleaning had occurred. Observations were recorded. More cleaner was added to the coupon. At the end of the second five-minute interval, coupons were wiped again, and observations made. The coupons were wiped dry and final weights taken.

SUBSTRATE MATERIAL: Aluminum 6061 T-4
CONTAMINANTS: Ink-Duracell Copper & P200-200 Black Base

Results: Table 1 lists the observations made at both five minute intervals. Table 2 list the cleaning efficiencies of the cleaners at full strength for each ink.

Table 1. Observations Made

CLEANER	1st OBSERVATION (5 min)	2nd OBSERVATION (10 min)
Soy Gold 1000	Some black removed	Removed black but not copper
Shopmaster	Some copper-little black	Some of both
InproClean 4000T	Some copper	Some black
Greenstuff Neutral	No effect	No effect
Safety Wash	No effect	No effect
HTF 50	Removed most of both	Effective removal

Table 2. Cleaning Efficiencies

5 Minutes	4000 T	Shopmaster	Greenstuff	Soy Gold	HTF 50	Safe Wash
Copper	No value	7.58	1.23	-1.47	95.4	1.14
Black	53.4	1.67	-2.5	-1.65	87.1	-1.18
10 Minutes	4000 T	Shopmaster	Greenstuff	Soy Gold	HTF 50	Safe Wash
Copper	25.6	43.4	-1.8	-3.9	95.6	1.92
Black	85.5	58.2	-6.91	3.47	91.8	-3.29

Summary:

Substrates:	Aluminum				
Contaminants:	Inks				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
AG Environmental Products	Soy Gold 1000	100	0.00	☐	
Buckeye International	Shopmaster	100	0.00	☐	
Oakite Products	Inproclean 4000 T	100	0.00	☐	

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Chemstation International	Greenstuff II	100	0.00	☐	
Emkay Chemical Company	Safety Wash	100	0.00	☐	
Tarksol Inc	Tarksol HTF-50	100	95.00	☑	

Conclusion:

Only one chemistry was effective in removing the two inks, T-Square HTF 50. This product was then used to clean the red ink from the aluminum coupons. Upon application, the ink was immediately dissolved by the cleaning chemistry (99.4% removal). An MSDS and technical data sheet have been included for the product.