CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 03/27/2008

Experimenters: Jason Marshall, Shweta Bansal

ClientType: Machining Company

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Inks

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Timing

Purpose: To evaluate top ten products on fifth supplied ink

Experimental Procedure: The top ten successful products from the previous trial were used at full strength and room temperature. Twenty preweighed coupons were coated with the supplied Sakura Coatings Product Company Solid Marker (yellow). Once dry, a second weight was recorded to determine the amount of ink added to the coupon. As in the last trial, two coupons were used per cleaning alternative. A handheld swab was immersed into the cleaning product and then manual wiped across the coupon for up to one minute. Following the cleaning, the coupons was wiped dry for 5 seconds. Observations were made, final coupon weights recorded, and the average efficiencies were calculated.

Results: Six of the ten products removed nearly all of the yellow ink from the aluminum coupons in under 60 seconds of manual wiping. The table below lists the amount of ink applied, the amount remaining, the efficiency and the time needed to clean the ink.

Cleaner	Initial wt	Final wt	% Removed	Time
Soy Clear 1500	0.1030	0.0399	61.26	>60
	0.0840	0.0412	50.95	
Ink Zapper	0.0729	0.0036	95.06	60
	0.0988	0.0057	94.23	
Methyl Ester 1618	0.0903	0.0607	32.78	>60
	0.1385	0.0753	45.63	
Citrus Soy Solvent Cleaner & Degreaser	0.0631	0.0497	21.24	>60
	0.1528	0.0860	43.72	
Graffiti Remover SAC	0.1264	0.0053	95.81	60
	0.1077	0.0086	92.01	
BioRenewables Industrial Degreaser	0.1112	0.0684	38.49	>60
	0.1061	0.0704	33.65	
EP 921	0.1071	0.0054	94.96	45
	0.0818	0.0038	95.35	
BG Solv 717 Ink & Graffiti Cleaner	0.0578	0.0052	91.00	20
	0.0725	0.0011	98.48	
Graffiti remover	0.0801	0.0021	97.38	25
	0.0783	0.0024	96.93	
Smart Solve 605	0.0714	0.0040	94.40	60
	0.1008	0.0128	87.30	

Summary:

Substrates:	Aluminum				
Contaminants:	Inks				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**

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AG Environmental Products	Soy Clear 1500	100	56.11	☐	
Vertec BioSolvents	Ink Zapper	100	94.65	☑	
Twin Rivers Technologies	Methyl Ester 1618	100	39.21	☐	
Bi-O-Kleen Industries	Citrus Soy Solvent Cleaner & Degreaser	100	32.48	☐	
Spartan Chemical Company	Graffiti Remover SAC	100	93.91	☑	
Spartan Chemical Company	BioRenewables - Restroom Cleaner	100	36.07	☐	
Inland Technologies Inc	EP 921	100	95.16	☑	
BioGenesis Enterprises Inc	BG Solv 717 Ink & Graffiti Cleaner	100	94.74	☑	
Finger Lakes Chemical	Graffiti remover	100	97.16	☑	
United Laboratories International	Smart Solve 605	100	90.85	☑	

Conclusion: The same set of products will be used on the last supplied ink.