CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1997

DateRun: 07/08/1997

Experimenters: Jason Marshall, Prashant Trivedi

ClientType: Machine Construction Company

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Inks

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Timing

Purpose: Practical application of two terpene cleaners.

Experimental Procedure: Four coupons were contaminated with a single pass of ink and allowed to dry as in the previous two trials (7/8 -7/9). The main purpose of this trial was to determine a practical application usage of the two terpene cleaners. The customer supplied cleaner was compared to the terpene cleaners to determine the time needed to clean the ink from the substrate. The cleaners were applied to a paper towel as in the previous trials. When the cleaning started the clock was started. When the ink was completely removed from the coupon, the clock was stopped and the time was recorded. The coupons were then left for a period of three hours and weighed to determine the amount of ink left behind.
SUBSTRATE MATERIAL: Stainless Steel
CONTAMINANTS: Ink--Steel Blue DX-100 solvent based dye
CONTAMINATING PROCESS USED: Single pass with ink on coupon, dried as before

Results:

coupon #	Coupon weight	contaminated coupon wt	contaminate weight	cleaned coupon wt	remaining contaminate	% cont. remaining	removal time	comments
13	63.2196	63.2241	0.0045	63.2179	-0.0017	-37.78	16sec	damage
14	63.224	63.2273	0.0033	63.2206	-0.0034	-103.03	8sec	damage
15	63.1253	63.1304	0.0051	63.1289	0.0036	70.59	13sec	
16	62.9896	62.9944	0.0048	62.9878	-0.0018	-37.50	6sec	damage

cleaner ID	
13	Safety Layout Blue Remover
14	Terpene Technology HTF-50
15	Terpene Technology HTF-60
16	T Square HTF-50

All of the cleaners appeared to remove the ink in under twenty seconds. According to the data, cleaner number 15 only removed about 30% of the cleaner. Yet upon visual inspection, there seemed to be no ink on the coupon. The other three cleaners damaged the coupons only slightly. This could be do to the before mentioned reason in trial 2 (accuracy of balance). Despite the minimal damage to the substrate, the cleaners worked well in the practical application of the ink to the coupons.

Summary:

Substrates:	Stainless Steel				
Contaminants:	Inks				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Accurate Manufactured Products	Safety Layout Blue Remover	100	0.00	☑	
Tarksol Inc	Tarksol HTF-50	100	0.00	☑	
Tarksol Inc	Tarksol HTF 60	100	0.00	☐	

Conclusion: Upon completion of the three trials relating to the ink removal from the substrate, the lab suggests trying the two terpene cleaners in house and small samples of each chemistry were shipped to client, along with the MSDS's. The client can determine which cleaner the prefer or try other terpene based products specifically designed for ink removal. It should be noted that the terpenes do have an odor that needs to be considered.