CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1998
DateRun:	03/22/1998
Experimenters:	Jason Marshall, Prashant Trivedi
ClientType:	Cabinet Manufacturer
ProjectNumber:	Project #1
Substrates:	Plastic
PartType:	Part
Contaminants:	Adhesive
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	Determine the compatibility and efficiencies

Experimental Procedure:

The purpose of this experiment was to (1) to determine the compatibility of three of the cleaners and (2) quantitative the effectiveness of each chemistry.
The chemistries from the contaminant category will be tested for compatibility.

In the first part of the experiment, six coupons were used to conduct a preliminary determination if the cleaners caused any damage to the substrate. Each coupon was weighed to obtain its initial weight. Next, each cleaner was applied to two coupons using a hand held swab. The coupons were allowed to sit for 30 minutes at ambient temperature. Then the cleaner was wiped off using a paper towel. The coupons were weighed to determined the final weight. The difference between the two readings was calculated. If no difference was determined, the cleaners would be considered compatible with this particular substrate. After finding which cleaners were compatible, the second half of the experiment was conducted to determine the efficiency of the selected chemistries.
Six new coupons were weighed, over-contaminated with the adhesive cement using a cotton swab and weighed again. The coupons sat at room temperature until the cement was dry (about two hours). A paper towel was saturated with a cleaner and gently rubbed on the coupon for 30 seconds. Due to the number of coupons, one coupon was used for Safety Prep and Fisan Versaclean and two coupons were cleaned with Bio-T MAX and D-Greeze 500. Each coupon dried for 10 minutes at ambient conditions. A third weighing was performed for each coupon. An additional cleaning took place for 30 seconds longer. The percent removal was calculated for each cleaner.

SUBSTRATE MATERIAL: Plastic coupon (2"x 4")
CONTAMINANTS: 3M contact cement--30NF
CONTAMINATING PROCESS USED: Coupons were contaminated using a swab

Results:

All three cleaners which were tested for compatibility passed. There was no calculated damage to the coupons. See Table 1 for the calculations. Therefore, all four cleaners were used in the second half of the experiment.

Table 1	Compatibility Initial	Final	Average
Inland Technologies	100.01	100.02	100.00
Solvent Kleene	100.06	100.00	100.00
Envirosolutions	100.02	100.01	100.00

During the quantitative part of the testing, two of the four cleaners performed excellent after the second cleaning cycle. The other two did not show any improvement at all. See Table 2 for results.
Table 2 Cleaning Efficiencies

Product	Trial #	% Removal
Envirosolutions	1st	48.00
	2nd	95.10
Solvent Kleene	1st	47.50
	2nd	83.70
Inland Technologies	1st	50.80
	2nd	52.60
Oakite Products	1st	44.20
	2nd	43.70

Summary:

Substrates:	Plastic
Contaminants:	Adhesive

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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Bio Chem Systems	Bio T Max	100	95.10	☑	
Inland Technologies Inc	Safety Prep	100	43.70	☐	
Oakite Products	Fisan Versaclean	100	52.60	☐	
Transene Company, Inc.	D Greeze 500 LO	100	93.70	☑	

Conclusion:

Envirosolutions Bio-T MAX and Solvent Kleene D-Greeze 500 removed most of the contaminant from the plastic coupons. Adjusting the cleaning time to over a minute would increase the cleaning efficiency. MSDS's and product information have been included with this report. For further information contact the following:

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