CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998

DateRun: 09/10/1998

Experimenters: Jason Marshall

ClientType: Aluminum Job Shop

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Adhesive, Coatings, Resins/Rosins

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To replace current cleaner, Toluene, with a less flammable cleaning solutions.

Experimental Procedure: Eighteen preweighed coupons were contaminated with the sealant using a hand-held swab. Coupons were reweighed after sealant had dried.
Six cleaning chemistries were selected from the lab's database of previous test conditions and from vendor supplied information. Glass petri dishes, 4" diameter, were filled 1/3 full with each cleaner at 100% concentration. One coupon was placed in the dish at a time and soaked at room temperature for 3 minutes. At the end of the soaking, the coupon was removed and wiped for 1 minute with a paper towel. Coupons were rinsed for 10 seconds in tap water at 120 F and air dried. Once dried, coupons were weighed to obtain their clean weights. Cleaning efficiencies were then calculated.

SUBSTRATE MATERIAL: Aluminum (Al 202-50552 H-32)
CONTAMINANTS: Acrylic Sealant-Aromatic Hydrocarbon (Toluene CAS# 108-88-3)
CONTAMINATING PROCESS USED: Sealant was applied to coupons with a hand-held swab and allowed to dry overnight.

Results: All of the cleaners had some difficulty in removing the sealant from the coupons. Three were able to remove around half of the contaminant and the remaining cleaners were under 10% effective. Table 1 list the cleaning efficiencies.

Table 1. Cleaning Efficiencies

	Daraclean	HTF 85 B	Citrisolv	Luminox	Shopmaster	Soy Gold
Coupon 1	0.3748	50.09	55.07	2.96	-2.601	33.25
Coupon 2	0.3204	28.62	24.99	12.35	6.112	16.61
Coupon 3	0	47.9	51.4	5.52	-2.701	42.19
Average	0.2317	42.2	43.82	6.94	0.269	30.68

Summary:

Substrates:	Aluminum
Contaminants:	Adhesive, Coatings, Resins/Rosins

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Magnaflux	Daraclean 232	100	0.23	☐	
Alconox Inc	Luminox	100	6.94	☐	
Tarksol Inc	Tarksol HTF-50	100	42.20	☐	
Pride International Inc	Citrisolv Plus	100	43.82	☐	
Buckeye International	Shopmaster	100	0.27	☐	
AG Environmental Products	Soy Gold 1000	100	30.68	☐	

Conclusion: Having obtained marginal results, further testing of HTF 85 B, Citrisolv, Soy Gold and Luminox will be conducted. Temperature and time will both be modified to help increase cleaning efficiencies.