CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 07/01/2002

Experimenters: Jason Marshall

ClientType: Chemical Company

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Adhesive, Resins/Rosins

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate successful cleaners on second adhesive.

Experimental Procedure: Two semi aqueous products and two aqueous products were selected based on the previous trial results. The two semi aqueous products were used at full strength and the two aqueous products were diluted to 10% using DI water in 600 ml beakers. Each solution was heated to 130F in a Crest 40 kHz Ultrasonic unit and degassed for 5 minutes prior to cleaning. Twelve preweighed coupons were coated with Emerson & Cuming Stycast 4952 Red (silicone resin, ethyl silicate, mineral filler and pigments) using a hand held swab. Coupons were allowed to sit overnight and reweighed to determine the amount of resin applied. Three coupons were immersed into each solution at 130 F for 5 minutes using ultrasonic energy. Observations were made every minute during cleaning to determine the time required to achieve effective cleaning. Following cleaning, coupons were rinsed in a tap water bath for 15 seconds at 120 F then a tap water spray rinse also at 120 F and finally dried using a Master Appliance Heat Gun at 500 F for 30 seconds. Once coupons were at room temperature, final clean weights were recorded and cleaning efficiencies were calculated for each product.

Results: Both the semi aqueous products required less than the 5 minutes to remove over 99% of the contaminant. Both were removed from the bath after 3 minutes of cleaning. The aqueous based products had limited success in removing the adhesive after the 5 minutes of cleaning. The table below shows the amounts of adhesive added and removed by each cleaning solution.

Cleaner	Initial wt of cont.	Final wt of cont.	%Cont Removed
Bio T Max	0.9479	-0.0002	100.02
	0.5144	0.0004	99.92
	0.5617	0.0000	100.00
Solsafe	0.5646	0.0008	99.86
	1.0390	0.0006	99.94
	0.2627	0.0012	99.54
Surface Cleanse	0.7756	0.0759	90.21
	0.7710	0.3324	56.89
	0.4353	0.1344	69.12
Inproclean	0.3781	0.1028	72.81
	0.9600	0.3768	60.75
	0.4220	0.1073	74.57

Summary:

Substrates:	Aluminum
Contaminants:	Adhesive, Resins/Rosins

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Bio Chem Systems	Bio T Max	100	99.98	☑	
Bio Chem Systems	Solsafe 245	100	99.78	☑	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	10	72.08	☐	
Oakite Products	Inproclean 3800	10	69.38	☐	

Conclusion: Both Bio Chem Systems products were successful in removing the red adhesive in three minutes of ultrasonic cleaning.