CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 08/22/2002

Experimenters: Jason Marshall

ClientType: Chemical Company

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Coatings

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate previous cleaners for fourth contaminant

Experimental Procedure: Three products from that were successful in precious trials were used at full strength in 600 ml beakers. In addition to these products, another semi-aqueous product was selected from the lab's database and used at full strength.
A fifth product was also selected from the lab's databases. The fifth product was diluted to 10% using DI water in a 600 ml beaker. All five products were degassed for 5 minutes using a Crest 40 kHz ultrasonic tank. Fifteen preweighed coupons were coated with Emerson & Cuming C-990 Spec 333 (7440-22-4, epoxy resin, Cresol Novolac Polymer) using a hand held swab. The coating was allowed to sit for 15 minutes, followed by a second coupon weighing. Three coupons were cleaned in each solution for 5 minutes using ultrasonic energy. After cleaning, coupons were rinsed in tap water at 68 F for 15 seconds and dried using air knives at 68 F for 2 minutes. Once dry, final weights were recorded and efficiencies calculated.

Results: The four semi-aqueous products were very successful in removing over 99% of the coating. It was noted that they required less than the 5 minutes of cleaning. Approximately 3 minutes would have yielded the same results. The aqueous product removed just over 88% of the coating. The table below lists the amount of contaminant applied and removed for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Bio T Max	0.3411	0.0026	99.24
	0.5844	0.0019	99.67
	0.4694	0.0041	99.13
DS-108	0.6949	0.0010	99.86
	0.3751	0.0017	99.55
	0.6663	0.0011	99.83
Solsafe 245	0.5104	0.0018	99.65
	0.6354	0.0020	99.69
	0.3860	0.0018	99.53
Ionox HC 2	0.4349	0.0015	99.66
	0.5060	0.0061	98.79
	0.3631	0.0002	99.94
Amberclean	0.4216	0.0298	92.93
	0.5635	0.1195	78.79
	0.8262	0.0618	92.52

Summary:

Substrates:	Aluminum
Contaminants:	Coatings

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Bio Chem Systems	Bio T Max	100	99.35	☑	
Dysol	DS 108 Wipe Solvent	100	99.75	☑	
Bio Chem Systems	Solsafe 245	100	99.62	☑	
Kyzen Corporation	Ionox HC 2	100	99.46	☑	
Innovative Organics Inc	Amberclean 527 L	10	88.08	☑	

Conclusion: The next test will be to use these successful cleaners for the next contaminant.