CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001

DateRun: 06/11/2001

Experimenters: Jason Marshall

ClientType: Metal

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate successful cleaners on fifth contaminant.

Experimental Procedure: The four successful cleaners from the previous trial were again diluted to 5% using DI water in 600 ml beakers and placed in a Crest 40 kHz ultrasonic tank model 4Ht 1014-6. Solutions were heated to 130 F. Twelve preweighed coupons were coated with W.A. Wood #30 Lube Oil and reweighed. Three coupons were immersed into each solution and cleaned for five minutes. The coupons were rinsed in tap water at 120 F for 30 seconds and dried using a Master Appliance Corp, Hot-air gun model HG-301A at 500 F for 1 minute. Final "clean" weights were recorded and efficiencies were calculated.

Results: All four were successful in removing the #30 Lube Oil in under the 2 minutes of ultrasonic cleaning. Three of the four needed only 30 seconds to remove the oil from the coupons. Daraclean was the only one that took longer, require just over 1 minute. The lubricant floated to the top of each solution, making filtration or other forms of separation easy.
The following table lists the calculated efficiencies for coupon cleaned.

Cleaner	Coupon 1	Coupon 2	Coupon 3	Average	Std Dev
Inproclean	98.41	99.62	99.18	99.07	0.61
Daraclean	98.52	97.58	98.67	98.26	0.59
Green Stuff	100.02	99.52	99.83	99.79	0.25
Beyond	98.47	99.51	99.60	99.19	0.63

Summary:

Substrates:	Steel				
Contaminants:	Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Oakite Products	Inproclean 3800	5	99.07	☑	
Magnaflux	Daraclean 283	5	98.26	☑	
Bio Chem Systems	Green Stuff 6325	5	99.79	☑	
Today & Beyond	Beyond 2001	5	99.19	☑	

Conclusion: The four cleaners were all successful in removing over 98% of the lubricant in under one minute.