CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001

DateRun: 06/10/2001

Experimenters: Jason Marshall

ClientType: Metal

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate successful cleaners on fourth 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 Hubbard Hall Inc, Metal Guard 270 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 solutions removed over 99% of the Metal Guard 270 from the coupons in less than one minute of ultrasonic cleaning. This contaminant made the cleaners cloudy, suggesting difficulty in treating the solutions. The following table lists the efficiencies for each coupon cleaned.

Cleaner	Coupon 1	Coupon 2	Coupon 3	Average	Std Dev
Oakite	100.00	99.81	99.92	99.910	0.10
Daraclean	100.25	99.89	100.16	100.10	0.19
Green Stuff	100.00	99.75	100.00	99.92	0.14
Beyond	99.53	99.39	99.33	99.42	0.10

Summary:

Substrates:	Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Bio Chem Systems	Green Stuff 6325	5	99.92	☑	
Today & Beyond	Beyond 2001	5	99.42	☑	
Oakite Products	Inproclean 3800	5	99.91	☑	
Magnaflux	Daraclean 283	5	100.10	☑	

Conclusion: The four cleaners were effective in removing the Metal Guard.