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 third 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 Spartan Chemical MOAC 2945 (64742-52-5, 64742-53-5, 63449-39-8, 68608-26-4, 68918-91-2, 8002-26-4, 111-46-6, 107-41-5, 4719-04-4) 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: Again all four cleaners were very successful in removing the contaminant from the steel coupons. The table lists the calculated results for each solution.

Cleaner	Coupon 1	Coupon 2	Coupon 3	Average	Std Dev
1	99.85	100.02	100.06	99.98	0.11
2	99.56	100.07	100.04	99.89	0.29
3	100.14	100.05	100.07	100.08	0.05
4	100.09	100.08	100.07	100.08	0.01

During the cleaning process, it was observed that all four solutions required 2 minutes or less to remove the coolant. When the coolant was removed from the coupon, the cleaning solution become cloudy. This may be a problem for
treatment of the solution after prolonged use.

Summary:

Substrates:	Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Oakite Products	Inproclean 3800	5	99.98	☑	
Magnaflux	Daraclean 283	5	99.89	☑	
Bio Chem Systems	Green Stuff 6325	5	100.08	☑	
Today & Beyond	Beyond 2001	5	100.08	☑	

Conclusion: The four solutions removed all of the contaminant from the coupons within 2 minutes of ultrasonic cleaning. The contaminant did not separate out from the cleaning solution after the trial was completed.