CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001

DateRun: 06/12/2001

Experimenters: Jason Marshall, Ravi Krishnappa

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 sixth cleaner.

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 Milacron Cimperial 1070 and reweighed. Three coupons were immersed into each solution and cleaned for two 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: Each solution removed all of the Cimperial 1070 from the steel coupons. The contaminant caused the cleaning solutions to become cloudy, which could be a problem for treating the solutions after cleaning. The table lists the effectiveness for each cleaner.

Cleaner	Coupon 1	Coupon 2	Coupon 3	Average	Std Dev
Inproclean	100.00	100.05	99.98	100.01	0.04
Daraclean	100.12	100.09	100.08	100.09	0.02
Green Stuff	100.05	100.12	100.11	100.10	0.04
Beyond	100.01	100.06	100.15	100.08	0.07

Summary:

Substrates:	Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Oakite Products	Inproclean 3800	5	100.01	☑	
Magnaflux	Daraclean 283	5	100.09	☑	
Bio Chem Systems	Green Stuff 6325	5	100.10	☑	
Today & Beyond	Beyond 2001	5	100.08	☑	

Conclusion: All four were effective in removing the metal working fluid. The next trial will evaluate the cleaners for removing the combination of MOAC and the additives.