CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 10/06/2002

Experimenters: Jason Marshall

ClientType: Electromagnetic Manufacturer

ProjectNumber: Project #4

Substrates: Aluminum

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate selected cleaners for lubricant removal at 2 seconds

Experimental Procedure: Eight cleaners were selected from the lab's database of effective testing and from clients previous testing based on supplied input. All eight were diluted to 5% in 600 ml beakers using DI water. Each solution was heated to 130 F on a hot plate and then degassed for 5 minutes in a Crest 40 kHz ultrasonic tank. Twenty-four preweighed coupons were coated with Fuchs Lubricants Co Renodraw 12 using a hand held swab. Coupons were then reweighed using a Denver Instruments A250 balance to determine the amount of contaminant added.

Three coupons were immersed into each solution and cleaned for 2 seconds using ultrasonic energy. Coupons were rinsed for 2 more seconds in a tap water ultrasonic bath at 120 F and finally dried using air knives at room temperature for 10 seconds. After coupons were dried, final weights were recorded and efficiencies calculated for each cleaning solution. The cleaning procedure was repeated for two additional cleaning times, 4 and 8 seconds.

Results: The selected products were only marginally successful after 8 seconds of cleaning. Average results for each cleaning time are listed in the table below.

Cleaing Time (sec)	2	4	8
EXP 1400	16.20	57.08	69.82
SC Aircraft + Metal	40.95	39.62	51.58
Surface Cleanse 930	61.02	42.86	71.84
Daraclean 121	32.89	29.95	49.65
Inproclean 3800	39.20	57.00	81.88
Crystal Simple Green	47.43	31.63	53.42
Beyond 2005	20.56	49.02	78.80
Ecomate FN	35.57	17.18	32.44

Summary:

Substrates:	Aluminum
Contaminants:	Lubricating/Lapping Oils

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Brulin Corporation	Aquavantage 1400	5	69.82	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	51.57	☐	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5	71.84	☑	
Magnaflux	Daraclean 121	5	49.65	☐	
Oakite Products	Inproclean 3800	5	81.88	☑	
Simple Green	Crystal Simple Green Industrial Cleaner & Degreaser	5	53.42	☐	
Today & Beyond	Beyond 2005	5	78.80	☑	
SOQ Environmental Technology	Ecomate FN	5	32.44	☐	

Conclusion: The four products removing greater than 69% will be tested in a additional test with cleaning concentrations and temperatures being increased.