

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002  
 DateRun: 10/07/2002  
 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:**

<b>Substrates:</b>		Aluminum				
<b>Contaminants:</b>		Lubricating/Lapping Oils				
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>	
Brulin Corporation	Aquavantage 1400	5	69.82	<input checked="" type="checkbox"/>		
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	51.57	<input type="checkbox"/>		
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5	71.84	<input checked="" type="checkbox"/>		
Magnaflux	Daraclean 121	5	49.65	<input type="checkbox"/>		
Oakite Products	Inproclean 3800	5	81.88	<input checked="" type="checkbox"/>		
Simple Green	Crystal Simple Green Industrial Cleaner & Degreaser	5	53.42	<input type="checkbox"/>		
Today & Beyond	Beyond 2005	5	78.80	<input checked="" type="checkbox"/>		
SOQ Environmental Technology	Ecomate FN	5	32.44	<input type="checkbox"/>		

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