CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 11/07/2004

Experimenters: Jason Marshall

ClientType: Manufacturers of Precision Parts and Assemblies

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate cleaners using ultrasonic energy.

Experimental Procedure: The same six products from the previous trial were used at the same dilutions and time (5 min). Each beaker was immersed into a Crest 40 kHz ultrasonic tank filled with water heated to 115 F. The products were degassed for 5 minutes.
Eighteen preweighed 6061 aluminum coupons were again contaminated with Fuch's Lubricants Renocut 6515 NC using a swab. A second weighing was performed to determine the amount of soil added. Three coupons were cleaned in each product for 5 minutes with ultrasonics. Coupons were again rinsed in water at 120 F for 15 seconds and dried with air blow off at room temperature for 30 seconds. Once dry, final weights were recorded and efficiencies were calculated.

Results: All six products removed over 90% of the lubricant in five minutes using ultrasonic energy. All of the products had higher efficiencies than the client's current cleaner. Four of the five removed over 98% of the lubricant. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Amberclean Q3	0.2012	0.0219	89.12
	0.2200	0.0084	96.18
	0.2415	0.0048	98.01
Formula 815 GD	0.1633	0.0027	98.35
	0.1896	0.0028	98.52
	0.1472	0.0026	98.23
Inproclean 3800	0.2126	0.0082	96.14
	0.2428	0.0020	99.18
	0.2752	0.0024	99.13
Surface Cleanse 930	0.2209	0.0071	96.79
	0.2447	0.0016	99.35
	0.1675	0.0014	99.16
Valtron SP 2275	0.2892	0.0031	98.93
	0.2549	0.0029	98.86
	0.2185	0.0035	98.40
Ionox HC2	0.3098	-0.0003	100.10
	0.2256	0.0097	95.70
	0.2096	0.0097	95.37

Summary:

Substrates:	Aluminum
Contaminants:	Lubricating/Lapping Oils

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Innovative Organics Inc	Amberclean Q3	2	94.44	☑	
Brulin Corporation	Formula 815 GD	2	98.37	☑	
Oakite Products	Inproclean 3800	2	98.15	☑	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	2	98.43	☑	
Valtech Corporation	Valtron SP 2275	2	98.73	☑	

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Kyzen Corporation	Ionox HC 2	100	97.06	☑	

Conclusion: The same six products will be tested on the second supplied contaminant using ultrasonic cleaning at 115 F.