CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 11/11/2004

Experimenters: Jason Marshall

ClientType: Manufacturers of Precision Parts and Assemblies

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Low Pressure Spray

Analytical Methods: Gravimetric

Purpose: To evaluate alternative contact cleaners.

Experimental Procedure: Four alternative contact cleaners were selected from the laboratories inventory. Each product, including the client's current cleaner were used at full strength at room temperature. Three of the five products were in supplied to the lab in spray cans. Two products had to be applied using a manual spray pump. (The Ak225 does come in a spray can but was not available at the time of testing).

Eighteen preweighed 6061 aluminum coupons were coated with Fuch's Lubricants Renocut 6515 NC (mineral oil, vegetable oil) using a hand held swab. Coupons were allowed to sit for over an hour. A second set of weights were recorded to determine the amount of soil added.

Three coupons were sprayed with each contact cleaner for about 30 seconds and allowed to air dry. In addition to the cleaners, compressed air was also used to clean a set of three coupons. Final clean weights were recorded and efficiencies were calculated.

Results: Four of the five products tested removed over 90% of the lubricant using the minimal spray cleaning time. No product removed more than the client's current cleaner. The Gemtek product had a lower efficiency than the compressed air. The table below lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Micro X	0.2193	0.0012	99.45
	0.1798	0.0028	98.44
	0.1270	0.0031	97.56
Heavy Duty Degreaser C	0.2651	0.0202	92.38
	0.2505	0.0055	97.80
	0.1663	0.0196	88.21
Flux Remover C	0.3089	0.0185	94.01
	0.1857	0.0084	95.48
	0.3141	0.0053	98.31
SC Evaporative Electronics Cleaner	0.2403	0.1001	58.34
	0.3344	0.0720	78.47
	0.2086	0.0733	64.86
AK 225	0.3502	0.0127	96.37
	0.3829	0.0192	94.99
	0.2876	0.0150	94.78
Air blow off	0.2006	0.0492	75.47
	0.1273	0.0513	59.70
	0.2329	0.0570	75.53

Summary:

Substrates:	Aluminum				
Contaminants:	Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
LPS Laboratories	Micro X	100	98.48	☑	
Micro Care	Heavy Duty Degreaser C	100	92.80	☑	
Micro Care	Flux Remover C	100	95.93	☑	

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Gemtek Products	SC Evaporartive Electronics Cleaner	100	67.22	☐	
AGA Chemical	AK 225	100	95.38	☑	

Conclusion: A follow up test will be conducted on the same alternative cleaners for slightly longer times and added air blow off for the Gemtek product.