CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 10/08/2008

Experimenters: Jason Marshall, Junhee Cho

ClientType: Electronics Manufacturer

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Salts

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate successful products on second supplied contaminant

Experimental Procedure: The top seven products based on past testing results were again diluted to 5% using DI water in 400 ml beakers. All seven products were heated to 130 F on a hot plate.

Peweighed aluminum coupons were coated with the Everite Electrolite Salt mixture using a handheld swab. The contaminant was allowed to dry for about 10 minutes. Once dry, the coupons were weighed a second time to determine the amount of oil applied.

Three coupons were immersed into each solution and cleaned for 5 minutes using stir-bar agitation. Rinsing was performed for 15 seconds using tap water heated to 120 F and followed by 30 seconds of air blow off with dry compressed air at room temperature. Final weights were recorded, and efficiencies were calculated for each coupon cleaned.

Results: All seven products were effective at removing the salt mixture from the aluminum coupons within 5 minutes of immersion cleaning. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Green Soak	0.2641	-0.0035	101.33
	0.2104	-0.0012	100.57
	0.2368	-0.0044	101.86
Aquavantage 1400	0.2289	0.0036	98.43
	0.2704	0.0152	94.38
	0.2094	0.0004	99.81
Shopmaster LpH	0.2360	-0.0036	101.53
	0.1741	-0.0009	100.52
	0.2645	0.0068	97.43
FPC 100	0.4220	0.0059	98.60
	0.2037	-0.0010	100.49
	0.2232	-0.0020	100.90
SC Aircraft & Metal Cleaner	0.2508	0.0004	99.84
	0.3354	-0.0007	100.21
	0.2014	-0.0009	100.45
Amberclean L12	0.2002	0.0013	99.35
	0.1188	0.0003	99.75
	0.2904	0.0015	99.48
Ozzy Juice SW-3	0.2918	-0.0004	100.14
	0.2189	0.0097	95.57
	0.3190	-0.0010	100.31

Summary:

Substrates:	Aluminum				
Contaminants:	Salts				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
BCS Company	Green Spray 400	5	101.25	☑	
Brulin Corporation	Aquavantage 1400	5	97.54	☑	

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Buckeye International	Shopmaster LPH	5	99.82	☑	
Environmental Solution Products Inc	FPC 100	5	100.00	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	100.17	☑	
Innovative Organics Inc	Amberclean L 12	5	99.53	☑	
Chem Free Corporation	SW-3 Ozzy Juice (Improved Low Odor)	5	98.67	☑	

Conclusion: The top six products will be evaluated on the third supplied contaminant under the same cleaning conditions.