CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 10/09/2008

Experimenters: Jason Marshall

ClientType: Electronics Manufacturer

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Cutting/Tapping Fluids

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate top performing products on fourth supplied contaminant using immersion cleaning.

Experimental Procedure: The top five products based on past testing results were again diluted to 5% using DI water in 400 ml beakers. All five products were heated to 130 F on a hot plate. Peweighed aluminum coupons were coated with the Hagsterfer's Hard Cut 5318 cutting oil 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: Not all of the products were effective at removing the cutting oil from the aluminum coupons within 5 minutes of immersion cleaning. Three of the five removed over 80% of the cutting fluid. The other two removed between 70 and 75%. 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	0.1416	0.0538	62.01
	0.2755	0.0310	88.75
	0.1838	0.0430	76.61
Shopmaster LpH	0.2743	0.0572	79.15
	0.1377	0.0083	93.97
	0.1811	0.0389	78.52
FPC 100	0.1386	0.0434	68.69
	0.1963	0.0801	59.20
	0.3006	0.0417	86.13
SC Aircraft & Metal Cleaner	0.2222	0.0264	88.12
	0.2050	0.0257	87.46
	0.2183	0.0095	95.65
Amberclean L12	0.2221	0.0327	85.28
	0.1871	0.0408	78.19
	0.3836	0.0379	90.12

Summary:

Substrates:	Aluminum
Contaminants:	Cutting/Tapping Fluids

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
BCS Company	Green Spray 400	5	75.79	☐	
Buckeye International	Shopmaster LPH	5	83.88	☑	
Environmental Solution Products Inc	FPC 100	5	71.34	☐	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	90.41	☑	
Innovative Organics Inc	Amberclean L 12	5	84.53	☑	

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