CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 05/06/2004

Experimenters: Jason Marshall

ClientType: Bicycle Manufacturer

ProjectNumber: Project #1

Substrates: Titanium

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate successful products on the third supplied contaminant

Experimental Procedure: Six cleaners were selected from the previous trial. All were aqueous based and were diluted to 5% using DI water in 600 ml beakers. All six products were heated to 120 F on a hot plate.

Eighteen preweighed titanium coupons were coated with client supplied oil, Exxon Mobil DTE Light, using a hand held swab and then weighed a second time to determine the amount of soil added. Three coupons were cleaned in each solution for 5 minutes using stir-bar agitation. Coupons were rinsed in tap water for 15 seconds at 120 F, followed by air blow off at room temperature. Once dry, coupons were weighed a final time and efficiencies for each cleaner were calculated.

Results: All six products removed over 97% of the oil in five minutes. Four of the six removed over 99%. The table lists the amount of oil added, the amount remaining and the efficiency for each coupon.

Cleaner	Initial wt	Final wt	% Removed
Aquavantage 1400 GD	0.2562	0.0030	98.83
	0.0385	0.0013	96.62
	0.1300	0.0045	96.54
SC Aircraft & Metal Cleaner	0.1341	0.0005	99.63
	0.1189	0.0006	99.50
	0.0959	0.0010	98.96
Micro 90	0.1076	0.0000	100.00
	0.0963	0.0002	99.79
	0.1903	-0.0001	100.05
Daraclean 282 GF	0.1014	0.0004	99.61
	0.1934	-0.0003	100.16
	0.1102	-0.0001	100.09
Inproclean 3800	0.1903	-0.0004	100.21
	0.1736	0.0003	99.83
	0.2083	0.0001	99.95
Beyond 2004	0.1099	0.0007	99.36
	0.1298	0.0006	99.54
	0.0916	0.0026	97.16

Summary:

Substrates:	Titanium
Contaminants:	Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Brulin Corporation	Aquavantage 1400	5	97.33	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	99.36	☑	
International Products Corporation	Micro 90 Conc.	5	99.95	☑	
Magnaflux	Daraclean 282 GF	5	99.95	☑	
Oakite Products	Inproclean 3800	5	100.00	☑	

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Today & Beyond	Beyond 2004	5	98.69	☑	

Conclusion: The five products that removed over 98% of the oil will be used on the fourth supplied soil under the same conditions.