CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 05/03/2004

Experimenters: Jason Marshall

ClientType: Bicycle Manufacturer

ProjectNumber: Project #1

Substrates: Titanium

PartType: Coupon

Contaminants: Cutting/Tapping Fluids

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate selected cleaners for removal Moly Dee Tapping fluid

Experimental Procedure: Eight cleaners were selected from the laboratories database of past testing based on supplied data from client. Seven aqueous based and one semi-aqueous based cleaners were diluted to 5% using DI water in 600 ml beakers. All eight products were heated to 120 F on a hot plate. Twenty-four preweighed titanium coupons were coated with client supplied tapping fluid, Castrol Industries Moly Dee Tapping fluid (63449-39-8, 64741-96-4), 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: Three products, Micro 90, Inproclean 3800 and Beyond 2004, removed over 90% of the tapping fluid within 5 minutes. Four products, Aquavantage 1400, SC Aircraft & Metal Cleaner, Metalnox M6314 and Daraclean 282 GF, removed over 80%. 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
Bio T 300 B	0.1329	0.0489	63.21
	0.1982	0.0730	63.17
	0.1261	0.0356	71.77
Aquavantage 1400 GD	0.1431	0.0504	64.78
	0.1683	0.0206	87.76
	0.1913	0.0194	89.86
SC Aircraft & Metal Cleaner	0.1578	0.0459	70.91
	0.1795	0.0353	80.33
	0.1122	0.0076	93.23
Micro 90	0.1359	0.0059	95.66
	0.1629	0.0064	96.07
	0.1461	0.0249	82.96
Metalnox M6314	0.1983	0.0272	86.28
	0.2046	0.0563	72.48
	0.1147	0.0178	84.48
Daraclean 282 GF	0.1928	0.0072	96.27
	0.1522	0.0554	63.60
	0.3007	0.0274	90.89
Inproclean 3800	0.1109	0.0107	90.35
	0.1584	0.0147	90.72
	0.2120	0.0226	89.34
Beyond 2004	0.1649	0.0047	97.15
	0.2724	0.0054	98.02
	0.2506	0.0120	95.21

Summary:

Substrates:	Titanium				
Contaminants:	Cutting/Tapping Fluids				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**

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Bio Chem Systems	Bio T 300 B	5	66.05	☐	
Brulin Corporation	Aquavantage 1400	5	80.80	☐	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	81.49	☐	
International Products Corporation	Micro 90 Conc.	5	91.56	☑	
Kyzen Corporation	Metalnox M6314 (For Comparison Only)	5	81.08	☐	
Magnaflux	Daraclean 282 GF	5	83.58	☑	
Oakite Products	Inproclean 3800	5	90.14	☑	
Today & Beyond	Beyond 2004	5	96.79	☑	

Conclusion: The seven products that removed over 80% of the soil will be tested on the second supplied contaminant under similar conditions.