

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 05/05/2004

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 successful cleaners from first trial on second supplied contaminant

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

Twenty-one preweighed titanium coupons were coated with client supplied tapping fluid, Master Chemical Corp Trim C270 (102-71-6, 63231-48-1, 141-43-5), 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 seven products removed over 85% of the cutting fluid within five minutes. One product removed under 90%. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Aquavantage 1400 GD	0.0387	-0.0001	100.26
	0.0341	0.0001	99.71
	0.0182	-0.0003	101.65
SC Aircraft & Metal Cleaner	0.0425	0.0007	98.35
	0.0398	0.0024	93.97
	0.0967	0.0026	97.31
Micro 90	0.0979	0.0001	99.90
	0.0295	-0.0002	100.68
	0.0440	-0.0006	101.36
Metalnox M6314	0.0304	0.0035	88.49
	0.0634	0.0090	85.80
	0.0682	0.0088	87.10
Daraclean 282 GF	0.0523	0.0025	95.22
	0.0599	0.0065	89.15
	0.0273	0.0026	90.48
Inproclean 3800	0.0237	0.0000	100.00
	0.0366	-0.0003	100.82
	0.0232	-0.0001	100.43
Beyond 2004	0.0799	0.0002	99.75
	0.0506	0.0000	100.00
	0.0356	0.0007	98.03

Summary:

Substrates:	Titanium				
Contaminants:	Cutting/Tapping Fluids				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Brulin Corporation	Aquavantage 1400	5	100.54	<input checked="" type="checkbox"/>	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	96.54	<input checked="" type="checkbox"/>	

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International Products Corporation	Micro 90 Conc.	5	100.65	<input checked="" type="checkbox"/>	
Kyzen Corporation	Metalnox M6314 (For Comparison Only)	5	87.13	<input checked="" type="checkbox"/>	
Magnaflux	Daraclean 282 GF	5	91.61	<input checked="" type="checkbox"/>	
Oakite Products	Inproclean 3800	5	100.43	<input checked="" type="checkbox"/>	
Today & Beyond	Beyond 2004	5	99.26	<input checked="" type="checkbox"/>	

Conclusion:

The six products that removed over 90% of the contaminant will be tested on the third supplied soil under the same conditions.