CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2012
DateRun:	01/29/2012
Experimenters:	Jason Marshall, Johnny Le
ClientType:	Optical Manufacturer
ProjectNumber:	Project #1
Substrates:	Aluminum
PartType:	Coupon
Contaminants:	Lubricating/Lapping Oils
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To compare aqueous and non-aqueous cleaners for most often used soil
Experimental Procedure:	Using the lab's on-line database of test results, www.cleanersolutions.org, five aqueous products and 4 solvent cleaners were selected based on similar testing conditions. The aqueous products were diluted to 5% using DI water in 500 ml beakers. The solvent-based products were used at full strength in 400 ml beakers. All nine products were evaluated at room temperature. Twenty-seven preweighed aluminum coupons were coated with Lubriplate 630-2. Coupons were weighed a second time to determine the amount of soil added. Three coupons were cleaned in each solution for five minutes using no agitation. At the end of cleaning, the coupons were allowed to air dry at room temperature overnight. Final weights were recorded, and efficiencies were calculated.
Results:	None of the aqueous products worked at room temperature without agitation. Two of the solvent-based products worked very well within five minutes. The table lists the amount of soil added, the amount remaining and the efficacy of the products for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Sea Wash 8			
	0.2353	0.2353	0.00
	0.2120	0.2027	4.39
	0.1441	0.1533	-6.38
Ozzy Juice SW 3			
	0.1669	0.1678	-0.54
	0.1180	0.1142	3.22
	0.2317	0.2299	0.78
All Clear United 450			
	0.1265	0.1242	1.82
	0.1465	0.1469	-0.27
	0.1072	0.1122	-4.66
Aquavantage 1400			
	0.0727	0.0759	-4.40
	0.1285	0.1326	-3.19
	0.0903	0.0903	0.00
SC Aircraft & Metal			
	0.0980	0.0985	-0.51
	0.1167	0.1193	-2.23
	0.0856	0.0864	-0.93
Solsafe 245			
	0.1094	0.0059	94.61
	0.0677	0.0016	97.64
	0.0801	0.0030	96.25
DS 108			
	0.1041	0.0934	10.28
	0.0887	0.0839	5.41

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	0.1008	0.0648	35.71
Smart Solve 605			
	0.0724	0.0783	-8.15
	0.0669	0.0647	3.29
	1.0663	0.0769	92.79
Bio Solv			
	0.1476	0.0217	85.30
	1.0535	0.0085	99.19
	1.0644	0.0130	98.78

Summary:

Substrates:	Aluminum
Contaminants:	Lubricating/Lapping Oils

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Warren Chemical Company	Sea Wash 8	5	-0.67	☐	
Chem Free Corporation	SW-3 Ozzy Juice (Improved Low Odor)	5	1.15	☐	
United Laboratories International	United 450 All Clear	5	-1.04	☐	
Brulin Corporation	Aquavantage 1400	5	-2.53	☐	
Bio Chem Systems	Solsafe 245	100	96.17	☑	
Dysol	DS 108 Wipe Solvent	100	17.13	☐	
United Laboratories International	Smart Solve 605	100	29.31	☐	
Phoenix Resins Inc	BioSolv	100	94.42	☑	

Conclusion: The two effective products will be tested on the four additional lubricants/greases.