CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2006
DateRun:	12/07/2006
Experimenters:	Jason Marshall
ClientType:	Lab
ProjectNumber:	Project #1
Substrates:	Aluminum
PartType:	Coupon
Contaminants:	Greases, Dirt, Oil
Cleaning Methods:	Low Pressure Spray
Analytical Methods:	Gravimetric
Purpose:	Laboratory evaluations of alternative aerosol cleaning products

Experimental Procedure:

Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning.

Six products were selected for testing based on previous testing on the selected soil. All products were diluted to 10% using DI water and 500 mls were poured into the EnviroCaddie aerosol spray system and pressurized to just under 95 psi using Nitrogen. Eighteen preweighed aluminum coupons were coated with a collection of brake/engine soil collected from an automobile shop. The coupons were allowed to sit for one day before a second weight was recorded. Three coupons were cleaned with each solution for 30 seconds via the aerosol spray system. Coupons were not rinsed and were air dried at room temperature for 5 minutes. Following drying, final weights were recorded and cleaning efficiencies were calculated.

Results:

All six products removed over 80% of the oil-grease-dirt mix using the EnviroCaddie aerosol system. One product. Phase III California Parts Washer removed just under 95%. The Sea Wash Blue had the smallest flow pattern making cleaning slightly more difficult. The table below lists the amount of soil applied, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	%Removed
Aquavantage 1400	0.4578	0.0629	86.26
	0.4536	0.0567	87.50
	0.4519	0.1292	71.41
Daraclean 282	0.3299	0.0232	92.97
	0.2143	0.0475	77.83
	0.5490	0.0621	88.69
Inproclean 3800	0.3846	0.0226	94.12
	0.1686	0.0342	79.72
	0.3825	0.0245	93.59
California Parts Washer	0.4748	0.0141	97.03
	0.2192	0.0151	93.11
	0.5382	0.0342	93.65
Eliminator	0.1351	0.0248	81.64
	0.4197	0.0508	87.90
	0.4069	0.0536	86.83
Sea Wash Blue	0.4847	0.0643	86.73
	0.5675	0.0569	89.97
	0.8017	0.0720	91.02

Summary:

Substrates:	Aluminum
Contaminants:	Greases, Dirt, Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Brulin Corporation	Aquavantage 1400	10	81.72	☑	
Magnaflux	Daraclean 282	10	86.50	☑	
Oakite Products	Inproclean 3800	10	89.14	☑	
Phase III Inc	California Parts Washer Solution	10	94.60	☑	
Phase III Inc	Eliminator	10	85.46	☑	

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	Warren Chemical Company	Sea Wash Blue	10	89.24	☑	

Conclusion: The aqueous based products showed positive results for aerosol cleaning using an EnviroCaddie System. These products my require slightly longer cleaning times to achieve comparable results to the solvent-based aerosol cleaners. It also was noted that the sprayed solution could be collected, filtered and then reused in the EnviroCaddie.