CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006

DateRun: 10/09/2006

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: Lab

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Carbon Deposits, Greases, Oil

Cleaning Methods: Immersion/Soak

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.

Seven products were selected for testing based on equipment compatibility and soil removal. An eight product previously tested was also included. All eight products were diluted to 25% using DI water in 600 ml beakers. Products were used at room temperature. Twenty-four preweighed aluminum coupons were coated with a collection of brake/engine soil collected from an automobile shop. The coupons were allowed to sit for several days before a second weight was recorded. Three coupons were cleaned in each solution for 5 minutes using minimal agitation from a magnetic stir bar. Coupons were then rinsed in tap water for 15 seconds and dried using air blow off at room temperature for 30 seconds. Following drying, final weights were recorded and cleaning efficiencies were calculated.

Results: The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Cal Parts Washer	0.2295	0.1770	22.88
	0.1252	0.0825	34.11
	0.2126	0.1682	20.88
	0.4560	0.1972	56.75
Citrus Soy Solvent	0.2702	0.1290	52.26
	0.3649	0.1409	61.39
	0.4402	0.3522	19.99
Micro 90	0.4197	0.3518	16.18
	0.2134	0.1619	24.13
	0.3367	0.2568	23.73
Surface Cleanse 930	0.2962	0.2031	31.43
	0.4493	0.3188	29.05
	0.3585	0.2236	37.63
1400 GD	0.4040	0.1842	54.41
	0.3054	0.1892	38.05
Daraclean 282	0.5271	0.3715	29.52
	0.3602	0.2733	24.13
	0.1466	0.0891	39.22
Sea Wash Blue	0.1770	0.1336	24.52
	0.1704	0.1304	23.47
	0.1806	0.1423	21.21
Inproclean 3800	0.1270	0.0695	45.28
	0.2508	0.1377	45.10
	0.2745	0.1906	30.55

Summary:

Substrates:	Aluminum				
Contaminants:	Carbon Deposits, Greases, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Phase III Inc	California Parts Washer Solution	25	25.96	☐	

CLEANING LABORATORY EVALUATION SUMMARY

Bi-O-Kleen Industries	Citrus Soy Solvent Cleaner & Degreaser	25	56.80	☑	
International Products Corporation	Micro 90 Conc.	25	20.10	☐	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	25	28.07	☐	
Brulin Corporation	Aquavantage 1400	25	43.36	☑	
Magnaflux	Daraclean 282	25	30.96	☑	
Warren Chemical Company	Sea Wash Blue	25	23.07	☐	
Oakite Products	Inproclean 3800	25	40.31	☑	

Conclusion: Four of the eight products has moderate success under the conditions tested. These four products will be used in the next phase of testing for aerosol alternatives for brake cleaning.