CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2006
DateRun:	12/13/2006
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. One product was used to 5% using DI water and 500 mlsThe other five products were used at full strength. Each product was then poured into an 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 89% of the brake soil in under 30 seconds of spray cleaning. A couple of the products took longer to dry or left a small amount of liquid at the bottom of the coupons. Wiping the water off the coupons resulted in cleaning efficiencies above 99%. 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	Observations
278 SuperSolv	0.5905	0.0306	94.82	
	0.5332	0.0403	92.44	
	0.3372	0.0424	87.43	
DS 104	1.1535	0.0249	97.84	Wet at bottom
	0.1811	0.0306	83.10	
	0.5954	0.0251	95.78	
D Greeze 500 Lo	0.2987	0.0237	92.07	
	0.5740	0.0068	98.82	
	0.5692	0.0179	96.86	
Solsafe 245	0.1652	0.0220	86.68	Wet at bottom
	0.2401	0.0246	89.75	99% with wipe
	0.3442	0.0311	90.96	
Brakleen-Non Aerosol	0.2832	0.0141	95.02	
	0.2766	0.0064	97.69	
	0.2372	0.0047	98.02	
Brake & Parts Cleaner	0.3012	0.0047	98.44	
	0.2709	0.0113	95.83	
	0.2435	0.0054	97.78	

Summary:

Substrates:	Aluminum
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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
AW Chesterton	278 Super Solv	5	91.56	☑	
Dysol	DS 104 Wipe Solvent	100	92.24	☑	
Transene Company, Inc.	D Greeze 500 LO	100	95.91	☑	
Bio Chem Systems	Solsafe 245	100	89.13	☑	
CRC Industries	Brakleen Brake Aerosol	100	96.95	☑	
Dynatex	Brake & Parts Cleaner Hexane Free	100	97.35	☑	

Conclusion: Some of the alternatives may need to be wiped dry. Despite the residue, all cleaners removed over 89% of the brake soil.