CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2018

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ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Aluminum, Ceramics, Plastic, Painted metal

PartType: Coupon

Contaminants: Dirt

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate and compare the effectiveness of the Alpha Chemical Sample Formulas when it comes to the removal of vehicle dirt on a variety of substrates.

Experimental Procedure: All aluminum, ceramic, acrylic plastic, and painted steel coupons were pre weighed and had one half of a gram of Vehicle Dirt soil (45% lithium grease, 39% motor oil, and 16% bike dirt) distributed onto each coupon. Three coupons of every substrate were designated to each respective cleaner. The dirty weights were recorded; three coupons of the same substrate were aligned into a Single Line Washing Unit (SLW) with Wypall X60 attached to each cleaning sled. The Wypall X60 reinforced wipe along with the coupons were all sprayed three times with the cleaner and then allowed to soak for 30 seconds. Afterwards the Single Line Washing Unit (SLW) was activated and cleaned for 20 cycles. The clean coupons were all then allowed to dry at room temperature before the final weights were recorded. The coupons were cleaned again using the same process with its respective cleaner, and all data and observations recorded.

Results:

Cleaner	Substrate	Initial wt. of cont. (g)	Final wt. of cont. (g)	% Cont. Removed	Average % Content Removed Per Trial	Average % Content Removed	Overall Average % Content Removed
Alpha Chemical Sample C Formulation	Aluminum	0.5572	0.0571	89.75	90.69	87.86	89.64
		0.5272	0.0329	93.76			
		0.5709	0.0653	88.56			
		0.5960	0.1114	81.31	85.09		
		0.4659	0.0704	84.89			
		0.5437	0.0594	89.08			
		0.7645	0.1112	85.46	87.79		
		0.7817	0.0938	88.00			
		0.6685	0.0675	89.90			
	Ceramic	0.4985	0.0552	88.93	93.54	93.34	
		0.6009	0.0260	95.67			
		0.4792	0.0191	96.01			
		0.5833	0.0857	85.31	91.87		
		0.4512	0.0316	93.00			
		0.4353	0.0118	97.29			
		0.6085	0.0410	93.26	94.61		
		0.6831	0.0487	92.87			
		0.5719	0.0131	97.71			
	Acrylic Plastic	0.4983	0.1491	70.08	84.71	88.22	
		0.5039	0.0416	91.74			
		0.4626	0.0356	92.30			
		0.4116	0.0304	92.61	90.07		
		0.7992	0.0872	89.09			
		0.4871	0.0560	88.50			
		0.9168	0.0962	89.51	89.88		
		0.9596	0.0994	89.64			
		0.7647	0.0727	90.49			
		0.6802	0.1630	76.04	85.71	89.13	

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	Painted Steel	0.5338	0.0381	92.86			
		0.5578	0.0657	88.22			
		0.7668	0.0625	91.85	92.93		
		0.6517	0.0492	92.45			
		0.6551	0.0361	94.49			
		0.5141	0.0397	92.28	88.74		
		0.5444	0.0433	92.05			
		0.7200	0.1305	81.88			
Alpha Chemical Sample G Formulation	Aluminum	0.6341	0.1540	75.71	85.50	87.78	90.69
		0.5385	0.0834	84.51			
		0.7741	0.0287	96.29			
		0.4077	0.0598	85.33	87.74		
		0.3313	0.0313	90.55			
		0.4364	0.0552	87.35			
		0.9838	0.0868	91.18	90.09		
		0.6352	0.0951	85.03			
		0.8353	0.0496	94.06			
	Ceramic	0.4264	0.0243	94.30	92.35	94.64	
		0.4317	0.0241	94.42			
		0.3930	0.0459	88.32			
		0.6995	0.0690	90.14	95.10		
		0.5333	0.0147	97.24			
		0.4497	0.0094	97.91			
		0.7032	0.0274	96.10	96.48		
		0.6089	0.0219	96.40			
		0.6824	0.0208	96.95			
	Acrylic Plastic	0.4622	0.0620	86.59	90.72	88.90	
		0.4447	0.0267	94.00			
		0.4147	0.0349	91.58			
		0.3537	-0.0009	100.25	87.83		
		0.3825	0.0523	86.33			
		0.6503	0.1501	76.92			
		0.8085	0.0499	93.83	88.16		
		0.6471	0.0876	86.46			
		0.8117	0.1284	84.18			
	Painted Steel	0.4237	0.0525	87.61	89.38	91.45	
		0.4476	0.0380	91.51			
		0.4706	0.0517	89.01			
		0.5430	0.0744	86.30	89.02		
		0.6591	0.0410	93.78			
		0.6652	0.0867	86.97			
		0.5626	0.0218	96.13	95.94		
		0.6154	0.0225	96.34			
		0.6307	0.0293	95.35			
Alpha Chemical Sample M Formulation	Aluminum	0.4426	0.1604	63.76	77.02	84.40	89.47
		0.4330	0.0401	90.74			
		0.4409	0.1033	76.57			
		0.5350	0.0856	84.00	86.18		
		0.4857	0.0363	92.53			
		0.6904	0.1241	82.02			
		0.8710	0.1152	86.77	90.00		
		0.8778	0.0787	91.03			
		0.9550	0.0744	92.21			
	Ceramic	0.4999	0.0555	88.90	91.18	94.48	
		0.4054	0.0508	87.47			
		0.5425	0.0153	97.18			
		0.6457	0.0416	93.56	96.25		
		0.5218	0.0174	96.67			

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		0.5278	0.0078	98.52			
		0.4625	0.0248	94.64	96.00		
		0.7093	0.0301	95.76			
		0.5965	0.0144	97.59			
	Acrylic Plastic	0.4460	0.0650	85.43	87.80	88.33	
		0.8490	0.1005	88.16			
		0.7253	0.0740	89.80			
		0.4279	0.0577	86.52	87.71		
		0.8618	0.1318	84.71			
		0.8336	0.0676	91.89			
		0.7556	0.0672	91.11	89.57		
		0.8318	0.0991	88.09			
		0.7426	0.0778	89.52			
	Painted Steel	0.5989	0.0277	95.38	91.30	90.67	
		0.5306	0.0602	88.65			
		0.5048	0.0512	89.86			
		0.6027	0.0881	85.38	88.38		
		0.3882	0.0502	87.07			
		0.6463	0.0473	92.68			
		0.5297	0.0609	88.50	92.32		
		0.8171	0.0624	92.36			
		0.7088	0.0277	96.09			

Overall% Removal Per Substrate

Cleaner	Aluminum %	Ceramic %	Acrylic Plastic %	Painted Steel %
Alpha Chemical Sample C Formulation	87.86	93.34	88.22	89.13
Alpha Chemical Sample G Formulation	87.78	94.64	88.90	91.45
Alpha Chemical Sample M Formulation	84.40	94.48	88.33	90.67

Summary:

Substrates:	Aluminum, Ceramics, Plastic, Painted metal
Contaminants:	Dirt

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Alpha Chemical Services	Sample C Formulation	100	89.64	☑	
Alpha Chemical Services	Sample G Formulation	100	90.69	☑	
Alpha Chemical Services	Sample M Formulation	100	89.47	☑	

Conclusion: Alpha Chemical Sample C Formulation, Alpha Chemical Sample G Formulation, and the Alpha Chemical Sample M Formulation are all just as effective in the removal of vehicle dirt from multiple surfaces.