

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 02/19/2020

Experimenters: Aditi Patel, Hannah Ritchie

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Plastic, Chrome, Painted metal

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of Culleoka Natural Based Cleaner to comparative products at removing Hucker's soil from various substrates

Experimental Procedure: Sixty-three pre-weighed coupons, three per substrate for each cleaner, was contaminated with 0.05 grams of Hucker's soil (Evaporated Milk; 26.5%, Creamy Peanut Butter; 17%, Salted Butter; 17%, Stone Ground Wheat Flour; 17%, Linseed Oil; 2.25%, Saline Solution; 5.25%, India Ink; 6.8%, Lemon Juice; 8.2%) for each coupon. Coupons aged for two hours at room temperature (68°F) before dirty weights were recorded. Coupons of the same substrate were placed into the Straight-Line Washability (SLW) unit, three at a time, and treated once with the cleaner. A Wypall was attached to the SLW sled and treated twice with the cleaner. Each test ran 20 cycles (~30 seconds of cleaning). Coupons air-dried at room temperature (68°F) for one hour before final weights were recorded.

Results:	Cleaner	Substrate	Initial wt. of Cont.	Final wt. Cont.	% Cont. Removed	Average% Removal	Overall % Remova
	A	1	0.2190	0.0229	89.54	89.52	92.53
			0.1066	0.0107	89.96		
			0.1104	0.0121	89.04		
		2	0.0803	0.0072	91.03	93.34	
			0.0778	0.0056	92.80		
			0.2465	0.0094	96.19		
		3	0.4392	0.0416	90.53	94.75	
			0.4410	0.0116	97.37		
			0.3994	0.0146	96.34		
	B	1	0.1298	0.0429	66.95	67.23	77.92
			0.2037	0.0844	58.57		
			0.1175	0.0280	76.17		
		2	0.1128	0.0187	83.42	74.52	
			0.0805	0.0246	69.44		
			0.1775	0.0520	70.70		
		3	0.4349	0.0324	92.55	92.00	
			0.4696	0.0336	92.84		
			0.4364	0.0410	90.60		
C	1	0.1203	0.0257	78.64	81.53	79.77	
		0.2397	0.0223	90.70			
		0.1548	0.0383	75.26			
	2	0.2296	0.1044	54.53	64.87		
		0.1529	0.0442	71.09			
		0.2461	0.0763	69.00			
	3	0.4698	0.0242	94.85	92.92		
		0.4522	0.0140	96.90			
		0.4870	0.0633	87.00			
D	1	0.6981	0.0746	89.31	84.94	91.53	
		0.6619	0.1012	84.71			
		0.4717	0.0906	80.79			
	2	0.4060	0.0238	94.14	92.68		

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E	3	0.3994	0.0434	89.13	96.97	88.89
		0.4867	0.0255	94.76		
		0.3815	0.0133	96.51		
		0.4094	0.0117	97.14		
		0.3469	0.0095	97.26		
	1	0.4101	0.0176	95.71	95.75	
		0.6144	0.1083	82.37		
		0.3679	-0.0337	109.16		
	2	0.3491	0.0834	76.11	74.39	
		0.2846	0.0962	66.20		
		0.4472	0.0856	80.86		
	3	0.3860	0.0102	97.36	96.52	
		0.3995	0.0108	97.30		
		0.3834	0.0195	94.91		
F	1	0.4972	0.0356	92.84	92.51	88.24
		0.6377	0.0529	91.70		
		0.4298	0.0301	93.00		
	2	0.6216	0.0618	90.06	75.43	
		0.3776	0.0973	74.23		
		0.2950	0.1121	62.00		
	3	0.3893	0.0110	97.17	96.79	
		0.4357	0.0145	96.67		
		0.4025	0.0140	96.52		

Summary:

Substrates:		Plastic, Chrome, Painted metal				
Contaminants:		Hucker's Soil				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:	
Culleoka Co	Culleoka Natural Based Cleaner	100	92.53	<input checked="" type="checkbox"/>		
Method	Method All-Purpose Cleaner	100	77.92	<input type="checkbox"/>		
Seventh Generation	All Purpose Morning Meadow	100	79.71	<input type="checkbox"/>		
Clorox Company	Green Works Multi-Surface Cleaner	100	91.53	<input checked="" type="checkbox"/>		
Mrs Myers Clean Day	Mrs Meyers Lemon Multisurface Cleaner	100	88.89	<input checked="" type="checkbox"/>		
Annie's Pure and Simple	Annie's Pure and Simple All Purpose Cleaner - Pink Grapefruit	100	88.24	<input checked="" type="checkbox"/>		

Conclusion:

Culleoka Natural Based Cleaner was the most effective cleaner at removing Hucker's Soil from ceramic, plastic, and painted metal.