CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2026
DateRun:	03/20/2026
Experimenters:	Alexander Symko, Amelia Wagner
ClientType:	
ProjectNumber:	Project #1
Substrates:	Carpet
PartType:	Coupon
Contaminants:	Dirt, Hucker's Soil, Food, Urine, Dog Vomit
Cleaning Methods:	Manual Wipe
Analytical Methods:	Colorimeter
Purpose:	To test the efficacy of a liquid stain and odor remover in removing various organic soil stains from carpet in comparison to benchmark products.

Experimental Procedure:

Prep: 5X5 inch carpet samples were prepped. Initial reflectance levels were measured in 6 areas on the surface of each carpet sample where the various stains would later be applied. Each stain was then applied using a swab to rub the soil into the fibers of the carpet, and left to dry for 24 hours. The dirty reflectance levels of each of the 6 stains were measured.

Cleaning procedure: Each stained area was sprayed twice with its respective cleaner (amounting to about 2.5ml of cleaning solution per stain). The cleaning solution was allowed to absorb into the carpet for 2 minutes. After, each stain was blotted with a Wypall paper towel 30 times to remove the soil. The carpet samples were then left to air dry overnight. The next day, clean reflectance levels of each stained area were measured

Analysis: Percent detergency was determined using the equation below.

Detergency: Unadjusted measure of the percentage the cleaned fabric was returned to its original state (uses only L values/measures of lightness)

$\%\ \text{Detergency} = 100X((L_{clean}-L_{dirty})/(L_{initial}-L_{dirty}))$

Where:

L=Reflectance (0=black, 100=white)

Results:

Cleaner	Stain	% DET	% DET AVG	% DET Overall
Rocco & Roxie Stain & Odor Eliminator	Cat Urine	75.93	94.90	58.36
		107.58		
		101.18		
	Dog Vomit	72.15	76.01	
		69.99		
		85.90		
	Feces (Huckers Soil)	10.56	16.85	
		27.99		
		12.00		
	Carpet Soil	48.37	36.54	
		19.93		
		41.31		
	Baby Food: Carrots	68.65	65.59	
		58.82		
		69.31		
	Baby Food: Pears/ Blueberry	74.12	60.29	
		64.14		
		42.60		
Nature's Miracle Advanced Stain & Odor Eliminator	Cat Urine	118.43	95.35	46.94
		99.72		
		67.90		
	Dog Vomit	73.62	71.10	
		70.92		
		68.76		

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	Feces (Huckers Soil)	15.72	13.77	
		11.77		
		13.80		
	Carpet Soil	34.10	16.49	
		1.01		
		14.36		
	Baby Food: Carrots	45.23	49.95	
		41.42		
		63.18		
	Baby Food: Pears/ Blueberry	47.63	34.99	
		19.54		
		37.79		
A1 Enzymatic Pet Stain & Odor Remover (Pet People)	Cat Urine	77.16	68.62	52.23
		60.99		
		67.70		
	Dog Vomit	88.30	93.70	
		94.55		
		98.27		
	Feces (Huckers Soil)	14.90	26.84	
		14.06		
		51.57		
	Carpet Soil	41.58	39.61	
		36.92		
		40.32		
	Baby Food: Carrots	51.38	52.25	
		40.54		
		64.83		
	Baby Food: Pears/ Blueberry	30.97	32.34	
		39.00		
		27.04		
Rocco & Roxie Stain & Odor Eliminator Extreme	Cat Urine	76.67	101.84	57.87
		102.69		
		126.15		
	Dog Vomit	90.25	87.08	
		90.84		
		80.14		
	Feces (Huckers Soil)	39.53	42.01	
		43.63		
		42.87		
	Carpet Soil	20.62	24.72	
		32.47		
		21.06		
	Baby Food: Carrots	59.56	40.48	
		34.97		
		26.92		
	Baby Food: Pears/ Blueberry	63.12	51.06	
		51.97		
		38.10		
Resolve Urine Destroyer	Cat Urine	150.91	244.68	70.51
		195.82		
		387.31		
	Dog Vomit	72.95	73.14	
		71.47		
		75.00		
	Feces (Huckers Soil)	5.85	22.48	
		28.92		
		32.66		

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	Carpet Soil	2.22	-17.44	
		-4.10		
		-50.42		
	Baby Food: Carrots	53.91	49.78	
		39.40		
		56.02		
	Baby Food: Pears/ Blueberry	53.47	50.41	
		42.92		
		54.85		
B1 Enzymatic Pet Urine Destroyer (Pet People)	Cat Urine	127.96	149.29	60.99
		141.25		
		178.67		
	Dog Vomit	90.33	89.66	
		67.15		
		111.50		
	Feces (Huckers Soil)	18.54	18.27	
		19.95		
		16.32		
	Carpet Soil	16.83	9.82	
		11.21		
		1.43		
	Baby Food: Carrots	62.72	65.58	
		62.52		
		71.50		
	Baby Food: Pears/ Blueberry	29.86	33.31	
		38.93		
		31.15		

The Rocco & Roxie Stain & Odor Eliminator, Nature's Miracle Advanced Stain & Odor Eliminator, Rocco & Roxie Stain & Odor Eliminator Extreme, Resolve Urine Destroyer, and B1 Enzymatic Pet Urine Destroyer (Pet People) showed percent detergency greater than 100% for some or all of the cat urine stains. This means that the carpet sample was lighter after cleaning than its original state. The ammonia in the cat urine itself has some bleaching properties. It is possible that an interaction of the ammonia with a chemical component or a chemical component itself is responsible for bleaching.

The Resolve Urine Eliminator has hydrogen peroxide listed as an ingredient which can result in bleaching. The Rocco and Roxie products ingredients are listed as 'proprietary' on their SDs sheets, but it can be assumed that these ingredients may include bleach, hydrogen peroxide, or something similar. The Nature's Miracle Advanced Stain & Odor eliminator contains isopropyl alcohol that, while not having bleaching properties on its own, it can cause discoloration or fading of fabric substrates.

The Resolve Urine Destroyer shows percent detergency less than 0 for some of the carpet soil (synthetic dirt) stains. This means that the product actually darkened these stains.

Summary:

Substrates:	Carpet				
Contaminants:	Dirt, Hucker's Soil, Food, Urine, Dog Vomit				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Rocco & Roxie	Rocco & Roxie Stain & Odor Eliminator	RTU	58.36	☐	Cat Urine: 94.9% (Effective) Dog Vomit: 76.01% (Effective)
Nature's Miracle	Advanced Stain & Odor Eliminator	RTU	46.94	☐	Cat Urine: 95.35% (Effective)
Pets + People	A1 Enzymatic Pet Stain & Odor Remover	RTU	52.23	☐	Dog Vomit: 93.70% (Effective)
Rocco & Roxie	Rocco & Roxie Stain & Odor Eliminator Extreme	RTU	57.87	☐	Cat Urine: 101.84% (Effective) Dog Vomit: 87.08% (Effective)
Reckitt Benckiser	Resolve Urine Destroyer Spray Stain & Odor Remover	RTU	70.51	☐	Cat Urine: 244.68% (Effective) Dog Vomit: 73.14% (Almost effective)
Pets + People	B1 Enzymatic Pet Stain & Odor Remover	RTU	60.99	☐	Cat Urine: 149.29% (Effective) Dog Vomit: 89.66% (Effective)

Conclusion:

A percent detergency equal to or greater than 75% is considered effective. Both of the Pets + People products showed a near equal efficacy to the Roxie & Rocco products, and a slightly greater efficacy than the Nature's Miracle product based on the average percent detergency measurements of each product. All

products tested were highly effective in removing staining from cat urine and dog vomit. All products struggled the most to remove staining from feces (Hucker's soil) and carpet soil (synthetic dirt).