CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2016
DateRun:	12/21/2016
Experimenters:	George Liang, James Keats, Thalia BracamonteMoreno
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #11
Substrates:	Liquid
PartType:	Coupon
Contaminants:	Odor
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Smell
Purpose:	To evaluate supplied products for malodor elimination

Experimental Procedure:

Clean carpet was cut into seven 2 in x 4 in rectangular strips. A panel of three then examined the odors to determine the baseline values using seven bottles, including a control. These strips were placed into glass bottles and the cat urine was directly applied to the carpet to determine baseline dirty odor characteristics. The contaminated carpets were aged for a day.

Each panelist was asked to describe the odor and rank the level of intensity of the malodor after the overnight aging of the carpets. Each carpet was subjected to a cleaning agent and each panelist was used to assess the malodor levels after each treatment. Each carpet was treated by lightly sprinkling a cleaning agent directly onto the carpet. The treated carpets were left to age for 5 minutes before vacuuming.

The set of three panelist was asked to rate the malodor level of the treated carpets from 1 to 5; where 1 is close to no smell of malodor and 5 being the worse malodor level. Treatment of the contaminated carpets was stopped after the 3rd cycle of treatment. An effective cleaner will have a malodor level of under 2 after its 3rd round of treatment. The treated carpets were then reassessed after 1 hour; 4 hours to see if there was any rise in malodor level after the treatment process.

The malodor was allowed to sit overnight to determine if there was any change of malodor levels. If there is a high increase in malodor level that results in a malodor level of 2 and higher; an additional spray of treatment is applied onto the carpet to see if the cleaning agent can eliminate the increased malodor from the overnight sit.

Results:

Cleaner	Pardon My Pet	Original		Average
Bottle 1	2.5	2.5	1	2
Bottle 2	2	2	1	1.7
Bottle 3	2	2	1	1.7
				Overall Average: 1.8
Cleaner	Pardon My Pet	Sprays: 2		Average
Bottle 1	1	1.5	1	1.2
Bottle 2	1	1	1	1
Bottle 3	2.5	1.5	1	1.7
				Overall Average: 1.3
Cleaner	Pardon My Pet	Sprays: 4		Average
Bottle 1	1	1.5	1	1.2
Bottle 2	1	1	1	1
Bottle 3	1.2	1.5	1.2	1.3
				Overall Average: 1.2

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Cleaner	Pardon My Pet	Sprays: 6		Average
Bottle 1	1	1	1	1
Bottle 2	1	1	1	1
Bottle 3	1	1.5	1	1.2
				Overall Average: 1.1
Cleaner	Fraganzia	Original		Average
Bottle 1	1.9	2	1	1.6
Bottle 2	1.8	2	1	1.6
Bottle 3	2	2	1	1.7
				Overall Average: 1.6
Cleaner	Fraganzia	Sprays: 2		Average
Bottle 1	1.2	2	1	1.4
Bottle 2	1.3	2	1.5	1.6
Bottle 3	1.5	2	2	1.8
				Overall Average: 1.6
Cleaner	Fraganzia	Sprays: 4		Average
Bottle 1	1	2	3	2
Bottle 2	1.2	2	1.2	1.5
Bottle 3	1	2	1.3	1.4
				Overall Average: 1.6
Cleaner	Fraganzia	Sprays: 6		Average
Bottle 1	1.2	1.5	1.2	1.3
Bottle 2	1	1.5	1.2	1.2
Bottle 3	1	1.5	1.2	1.2
				Overall Average: 1.3

Summary Table

Cleaner	Cycle	Overall Avg.
Pardon My Pet	3	1.1
Fraganzia	3	1.3

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Cleaner	Pardon My Pet	Original		
Cleaner	Pardon My Pet	Wait Time: 30 minutes		Average
Bottle 1	1	1	1	1
	1	1.5	1.3	1.3

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Bottle 2				
Bottle 3	1.5	1.5	1.5	1.5
				Overall Average: 1.3
Cleaner	Pardon My Pet	Wait Time: 1 hour		Average
Bottle 1	1	1	1	1
Bottle 2	1.2	1.5	1.4	1.4
Bottle 3	1	1.5	1.5	1.3
				Overall Average: 1.2
Cleaner	Pardon My Pet	Wait Time: 4 hour		Average
Bottle 1	1.2	1	1	1.1
Bottle 2	1	1	1	1
Bottle 3	1.5	1.3	1.5	1.4
				Overall Average: 1.2
Cleaner	Pardon My Pet	Wait Time: 30 min		Average
Bottle 1	1	2	1.5	1.5
Bottle 2	1	1.5	1.3	1.3
Bottle 3	1	1.5	1.3	1.3
				Overall Average: 1.3
Cleaner	Pardon My Pet	Wait Time: 1 hour		Average
Bottle 1	1	1.5	1.5	1.3
Bottle 2	1	1.5	1.3	1.3
Bottle 3	1	1.2	1.2	1.1
				Overall Average: 1.2
Cleaner	Pardon My Pet	Wait Time: 4 hour		Average
Bottle 1	1.2	1.5	1.5	1.4
Bottle 2	1.5	1.5	1.5	1.5
Bottle 3	1	1	1	1
				Overall Average: 1.3

Wait Time Summary Table

Cleaner	30 min.	1 hour	4 hour
Pardon My Pet	1.3	1.2	1.2

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Fraganzia	1.3	1.2	1.3

Overnight Results:

Cleaner	Pardon My Pet	Overnight		Average
Bottle 1	1.2	1	1	1.1
Bottle 2	1.5	1.5	2.5	1.8
Bottle 3	1.2	1.5	2	1.6
				Overall Average: 1.5
Cleaner	Pardon My Pet	Sprays: 2 Overnight		Average
Bottle 1	1.2	1.2	1.3	1.2
Bottle 2	1.2	1.2	1.2	1.2
Bottle 3	1	1.3	2	1.4
				Overall Average: 1.3
Cleaner	Fraganzia	Overnight		Average
Bottle 1	1	1.2	1	1.1
Bottle 2	1.2	1.2	1.3	1.2
Bottle 3	1	1.2	1.3	1.2
				Overall Average: 1.2
Cleaner	Fraganzia	Sprays: 2 Overnight		Average
Bottle 1	1.5	1.2	1	1.2
Bottle 2	1	1.2	1	1.1
Bottle 3	1	1.2	2	1.4
				Overall Average: 1.2

Overnight Summary Table

Cleaner	Overnight	After Treatment
Pardon My Pet	1.5	1.3
Fraganzia	1.2	1.2

Summary:

Substrates:	Liquid				
Contaminants:	Odor				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Fisher Scientific	Absolute Ethanol	100	0.00	☑	It is effective in eliminating the malodor.
Fisher Scientific	Absolute Ethanol	0	0.00	☐	
Reckitt Benckiser	Love My Carpet Pardon My Pet	100	0.00	☑	It is effective in eliminating the malodor.
Clorox Company	Fraganza Lavender Carpet Deodorizer	100	0.00	☑	It is effective in eliminating the malodor.

Conclusion:

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A cleaner is considered effective once it has reached a malodor level that is under 2 within 3 cycles of treatment. The malodor level is rated from 1 to 5; where 1 is close to no smell of malodor and 5 being the worse malodor level. Both cleaning agents were effective in eliminating the malodor. However, the contaminated carpets tested were not at the initial desired malodor level of 4 and above after the aging process of the carpets because the cat urine samples provided were diluted with cat litter that neutralizes malodor. Nonetheless, the cleaned carpets could still be used as comparisons to rate the effectiveness of the cleaning agents; Pardon My Pet was slightly more effective than Fraganzia in eliminating the malodor level, with respective malodor levels of 1.1 and 1.3 after its 3rd treatment cycle.

The treated carpets were re-assessed for malodor level after treating the carpets with the respective cleaning agent in time intervals. Carpets treated with the cleaning agent: Pardon My Pet had a slight increase in malodor level after just 30 minutes from treating it with the cleaning agent. After the overnight sit, carpets treated with Pardon My Pet had a significant increase in malodor level. However, with one treatment, the malodor level was slightly reduced back to its prior malodor level from the day before. Whereas, there was no increase in malodor level for carpets treated with Fraganzia at all.

Overall, the most effective cleaning agent for eliminating malodor level from carpets is listed as the following: Fraganzia; Pardon My Pet because carpets treated with Fraganzia had no rise in malodor level after treatment.