CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	10/21/2014
Experimenters:	Loc Nguyen, George Liang, Russell Curtis, Nicholas Landberg
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Liquid
PartType:	Coupon
Contaminants:	Odor
Cleaning Methods:	Low Pressure Spray
Analytical Methods:	Smell
Purpose:	To evaluate supplied products for odor elimination

Experimental Procedure:

Glass bottles (250ml) were filled with 1ml of milk each and left to spoil over a 3 day period. A panel of three then examined the odors to determine baseline values using 6 bottles, including a control.

The bottles were then treated with the cleaners at the recommended dilutions. Each panelist was asked to describe odor and rank the level of intensity of the malodor 1 being the worst smell and 5 being the best. After the panelists observed the initial odors, bottles were recapped and observations were recorded. Bottles were reopened and more cleaners were applied. Each bottle was subjected to additional rounds of treatment and each panelist was used to assess malodor levels. Additional observations were made the following day to check malodor elimination efficiency. When the intensity of malodor level has reached a rating of 4 or higher; any additional sprays in the contaminated bottles are unnecessary as the malodor level is no longer noticeable.

On the 4th day of the test; an additional test was conducted to see if the contaminated bottles have reached back to its original malodor level. Only contaminated bottles that indicated an increase in malodor level of a rating below a 4 was retested with two more sprays to see if the cleaner can effectively remove the increased overnight malodor level.

Rating key:	
1	Severe Malodor
2	Considerable Malodor
3	Noticeable Malodor
4	Slight Malodor
5	No Malodor

Results:

Each of the three panelists observed decreases in the malodor. The non-treated sample was nearly unchanged from the start of the testing.

Cleaner	Tester #	# Of Sprays	Bottle 1	Bottle 2	Bottle 3	Average
Polbioenzysan 2000	1	0	1	1	1	1
		2	3.5	3.2	4	3.6
		4	3.8	4.5	4	4.1
		6	N/A	N/A	N/A	N/A
		8	N/A	N/A	N/A	N/A
	2	0	1	1	1	1
		2	5	4	4	4.3
		4	4.5	4	4	4.2
		6	N/A	N/A	N/A	N/A
		8	N/A	N/A	N/A	N/A
	3	0	1	1	1	1
		2	3.5	3	4	3.5
		4	4.5	4	4	4.2
		6	N/A	N/A	N/A	N/A
		8	N/A	N/A	N/A	N/A
Febreeze Free Nature	1	0	1	1	1	1
		2	2.6	3	2.9	2.8
		4	3	3.5	3.5	3.3
		6	3.2	3.5	3.5	3.4

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		8	N/A	N/A	N/A	N/A
	2	0	1	1	1	1
		2	1.5	3	2	2.2
		4	2.5	3	2.5	2.7
		6	4	4	3.5	3.8
		8	N/A	N/A	N/A	N/A
	3	0	1	1	1	1
		2	2.5	2	2.5	2.3
		4	3	3	3	3
		6	3	3	3	3
		8	N/A	N/A	N/A	N/A

Ratings after 4th Day

Cleaner	Tester #	# Of Sprays	Bottle 1	Bottle 2	Bottle 3	Average
Polbioenzysan 2000	1	0	3.2	3.6	3.4	3.4
		2	3.8	4	4	3.9
	2	0	3.5	3.5	3	3.3
		2	3.8	4.1	3.9	3.9
	3	0	3.8	3.5	2.5	3.3
		2	3.7	4	4.1	3.9
Febreeze Free Nature	1	0	2	2	2.7	2.2
		2	2.5	2.8	2.7	2.7
	2	0	2	2.5	2.5	2.3
		2	2.5	2	2.3	2.3
	3	0	2	2	2	2
		2	2.6	2	2.8	2.5

Summary:

Substrates:	Liquid				
Contaminants:	Odor				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Pollet	Polbioenzysan 2000	100	0.00	☑	
Procter & Gamble	Febreze Free Nature	100	0.00	☑	

Conclusion:

Based on our observed results Polbioenzysan 2000 was better at odor elimination than Febreeze Free Nature. Polbioenzysan 2000was able to almost completely eliminate the milk malodor with the initial 2 sprays. Polbioenzysan 2000eliminated milk malodor within 4 sprays while Febreeze Free Nature was not able to even after 8 sprays. On the 4th day observations showed that Polbioenzysan 2000 still was effective at malodor elimination but Febreeze Free Nature had declined in effectiveness.