CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2015
DateRun:	06/29/2015
Experimenters:	Loc Nguyen, George Liang, Russell Curtis
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:	Clean 250 ml glass bottles were filled with six ml of whole milk. The bottles were capped and stored at room temperature for three days. At the end of the three days, the bottles were opened and observed for signs of spoiling odor. Cleaning products were used at the recommended concentrations. Three bottles were opened and treated with two sprays of one of the supplied cleaning products. Bottles were capped and swirled to mix the cleaner with the milk. A panel of three was initialized to the various odors of the untreated bottles. Then treated bottles were then presented uncapped to one member of the odor panel. The panelist was asked to describe odor and rank the level of intensity of the malodor. Each panelist was subjected to three bottles for each product/ milk mixture plus a selection of the initial odor bottles in random odor. After the panelists observed the odors, bottles were recapped and allowed to set overnight. Bottles were reopened and assessed for odors. Each bottle was subjected to a second round of treatment and each panelist rated the malodor stench. The rating was according to the scale set being 1 as best and 5 being the worse. Each bottle was treated with 2 sprays (1 cycle of spray). The treatment of the contaminated bottles was stopped at a maximum of 6 sprays (3 cycles of sprays). At the end of the 3rd cycle of treatment, a cleaning agent is considered to be effective if the bottle has reached a malodor level that is under a 2. The bottles were then left overnight to sit to assess if any malodor level would rise. If it did, another round of treatment was applied to see if it can get rid of the malodor. Chemistries Evaluated: Febreze G1; Good Riddance

Results:

Cleaner	Febreze G1	Original		Average
Bottle 1	4.8	5	5	4.9
Bottle 2	4.5	5	4.5	4.7
Bottle 3	4.5	5	4.5	4.7
			Overall Average:	
				4.8
Cleaner	Febreze G1	Sprays: 2		Average
Bottle 1	2	1	1.5	1.5
Bottle 2	1.5	1.5	1	1.3
Bottle 3	1.5	1.5	1.2	1.4
			Overall Average:	
				1.4
Cleaner	Febreze G1	Sprays: 4		Average
Bottle 1	2	1.5	1.2	1.6
Bottle 2	1.5	1	1.2	1.2
Bottle 3	1	1	1	1

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			Overall Average:	1.3
Cleaner	Febreze G1	Sprays: 6		Average
Bottle 1	2	1	1	1.3
Bottle 2	1	1	1.2	1.1
Bottle 3	1	1	1	1
			Overall Average:	1.1
Cleaner	Good Riddance	Original		Average
Bottle 1	4.7	5	4.5	4.7
Bottle 2	4.5	5	4.8	4.8
Bottle 3	5	5	4.7	4.9
			Overall Average:	4.8
Cleaner	Good Riddance	Sprays: 2		Average
Bottle 1	4	4.8	2	3.6
Bottle 2	2.5	3	2	2.5
Bottle 3	3	2	2	2.3
			Overall Average:	2.8
Cleaner	Good Riddance	Sprays: 4		Average
Bottle 1	2	2	2.5	2.2
Bottle 2	2	2	1	1.7
Bottle 3	1.5	1.2	1.2	1.3
			Overall Average:	1.7
Cleaner	Good Riddance	Sprays: 6		Average
Bottle 1	1	1.2	1.2	1.1
Bottle 2	1	1	1	1
Bottle 3	1	1	1	1
			Overall Average:	1

Summary Table		
Cleaner	Sprays	Average
Febreze G1	6	1.1
Good Riddance	6	1

Summary:

Substrates:	Liquid				
Contaminants:	Odor				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**

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Procter & Gamble	Febreze Free Nature	100	0.00	☑	
Maxim Technologies Inc.	Good Riddance Odor control	100	0.00	☑	

Conclusion: Both cleaners showed effectiveness in removing the malodor produced by the milk; Good Riddance slightly outperformed the comparative product in removing odors in the short term, and comparable control over the long-term removal of the odor.