

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2016  
DateRun: 10/11/2016  
Experimenters: George Liang, Vinh Tran, Alicia McCarthy, Austin Buda  
ClientType: Cleaner Manufacturer  
ProjectNumber: Project #1  
Substrates: Liquid  
PartType: Coupon  
Contaminants: Odor  
Cleaning Methods: Immersion/Soak  
Analytical Methods: Smell  
Purpose: To evaluate supplied products for malodor elimination

Experimental Procedure: Clean 250 ml glass bottles were filled with 6 ml of whole milk. The bottles were capped and stored at room temperature for three days. At the end of the 3rd day, the bottles were opened and observed for signs of malodor.

A panel of three was subjected to evaluating the untreated bottles after the 3rd day. Cleaning products were used at the recommended concentrations. Three bottles are treated for each supplied cleaning product for three treatment cycles. One treatment cycle consists of two sprays of the cleaning product directly into the contaminated milk bottle. Bottles were capped and swirled to mix the cleaner with the milk after each cycle.

The panel of three was subjected to rating the malodor in the bottle after each treatment cycle at random until all three treatment cycles were done.

After the panelists rated the odors, bottles were recapped and allowed to sit overnight. Bottles were reopened and assessed for malodor. An initial overnight rating of the contaminated bottles was done to see if the malodor has increased back to its initial malodor level from the overnight sit. Thereafter, each bottle was subjected to one treatment cycle and the same panelist from the day before gave a rating for each contaminated bottle. The rating was according to the scale set as 1 being the best and 5 being the worst.

An effective cleaning product would have a rating of two or below after its 3rd treatment cycle. The treatment of the contaminated bottles was stopped at a maximum of six sprays (three treatment cycles); the cleaning product is considered ineffective if the malodor rating is not 2 or below after its third cycle of treatment.

This report is the overnight results for the malodor rating of the contaminated spoiled milk bottles.

Results:

Cleaner	Post Clean	Overnight		Average
Bottle 1	2.5	3.0	4.0	4.1
Bottle 2	5.0	5.0	5.0	4.6
Bottle 3	4.5	4.0	4.0	4.2
				% Average: 4.3
Cleaner	Post Clean	Sprays: 2 Overnight		Average
Bottle 1	3.5	3	4.0	3.9
Bottle 2	4.5	4.0	4.5	4.7
Bottle 3	5.0	5.0	5.0	5.0
				% Average: 4.5
Cleaner	Pre Clean	Overnight		Average
Bottle 1	1.5	2.5	2.0	1.8
Bottle 2	1.5	1.5	2.0	1.5

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Bottle 3	2	1.0	1.0	1.3
				% Average: 1.6
Cleaner	Pre Clean	Sprays: 2 Overnight		Average
Bottle 1	2.5	1.0	2.0	1.7
Bottle 2	1.5	2.0	1.0	1.5
Bottle 3	1.0	2.5	1.0	1.5
				% Average: 1.6
Cleaner	Biological Liquid Odor Control/ Cleaner	Overnight		Average
Bottle 1	4.5	4.0	2.0	3.7
Bottle 2	4.3	4.2	3.0	4.2
Bottle 3	5.0	5.0	3.5	4.5
				% Average: 4.1
Cleaner	Biological Liquid Odor Control/ Cleaner	Sprays: 2 Overnight		Average
Bottle 1	3.0	3.5	4.0	3.8
Bottle 2	4.0	4.0	4.0	3.8
Bottle 3	3.5	4.0	3.5	3.7
				% Average: 3.8
Cleaner	Odor Eliminator (Spring Scent)	Overnight		Average
Bottle 1	1.0	1.0	1.0	1.3
Bottle 2	2.0	1.5	1.5	1.6
Bottle 3	2.5	1.0	1.0	1.5
				% Average: 1.5
Cleaner	Odor Eliminator (Spring Scent)	Sprays: 2 Overnight		Average
Bottle 1	1.0	1.0	1.5	1.1
Bottle 2	1.0	1.0	1.0	1.0
Bottle 3	1.0	1.0	1.0	1.0

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			% Average: 1.0
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Overnight Summary Table

Cleaner	Day Before	Overnight Avg.	After Spray
Post Clean	3.8	4.3	4.5
Pre Clean	1.2	1.6	1.6
Biological Liquid Odor Control/Cleaner	3.6	4.1	3.8
Odor Eliminator	1.1	1.5	1.0

Summary:

<b>Substrates:</b>		Liquid				
<b>Contaminants:</b>		Odor				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:	
Rochester Midland Corporation	PRS Water Damage Pre Clean	100		<input type="checkbox"/>	Minor malodor increase from overnight; no change after 1 treatment	
Rochester Midland Corporation	PRS Water Damage Post Clean	100		<input checked="" type="checkbox"/>	Rank 1.6	
Rochester Midland Corporation	Biological Liquid Odor Control Cleaner	100		<input type="checkbox"/>	Minor malodor increase from overnight; no change after 1 treatment	
Wurth	Odor Eliminator	100		<input checked="" type="checkbox"/>	Rank 1.0	

Conclusion:

Treatment of bottles is given a rating of 1 being the best to 5 being the worse malodor. The contaminated bottles had a minor increase in malodor rating after the overnight sit. A treatment cycle was applied to all bottles with the specified supplied cleaning product. Nevertheless, no significant decrease in the malodor was noticed except for the bottles treated with the cleaning product: Odor Eliminator. The overall best cleaning product is as follow: Odor Eliminator, Pre Clean, Biological Liquid Odor Control/Cleaner and Post Clean.