CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	01/26/2014
Experimenters:	Sam Kibirige, Francisco Abreau, Suman Das
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #2
Substrates:	Liquid
PartType:	Coupon
Contaminants:	Odor
Cleaning Methods:	Manual Wipe
Analytical Methods:	Smell
Purpose:	To evaluate supplied products for odor elimination

Experimental Procedure:

Testing followed the ASTM E1593 Assessing the Efficacy of Air Care Products in Reducing Sensorly Perceived Indoor Air Malodor Intensity which is a compendium of information or series of options that does not recommend a specific course of action. The user of the guidance document is responsible for identifying the most appropriate test design.

Clean 200 ml glass bottles were filled with five 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 four 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. An untreated bottle, a bottle with spoiled milk, a bottle with Product 1 solution, a bottle with Product 2, a bottle with Product 3, a bottle with water only, and a control with nothing added were presented to the panelists. The exposure was to set a bench mark for each possible odor contributor.

The 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 one panelist was used to assess malodor levels.

ChemistriesEvaluated: Formula 409 All Purpose Antibacterial; Gen Eon; DX-50; H2O (Water)

Results:

Each of the three panelists observed some level of malodor in the Gen Eon treated bottles. The water treated samples were nearly unchanged from the untreated spoiled milk benchmark bottles. The Gen Eon treated bottles had less malodor than the untreated milk bottles but the malodor was still prevalent. The DX-50 treated samples had the lowest level of the malodor and but it also had the most noticeable product scent prior to mixing with the milk malodor.

Observer	Formula 409	Gen Eon	DX-50	Water	Control
1	smelled like product	smelled like product	smelled like product	malodor	malodor
	smelled like product	product & malodor	smelled like product	malodor	malodor
	smelled like product	product & malodor	smelled like product	malodor	malodor
2	smelled like product	smelled like product	smelled like product	malodor	malodor
	smelled like product	malodor with product	smelled like product	malodor	malodor
	smelled like product	malodor with product	smelled like product	malodor	malodor
3				malodor	malodor

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	smelled like product	malodor present	smelled like product		
	smelled like product	malodor present	smelled like product	malodor	malodor
	smelled like product	malodor present	smelled like product	malodor	malodor

During the overnight the malodor levels increased to almost the initial level of the untreated milk bottles. A second application of each product did little to lessen the malodor in the Gen Eon product.

Second Spray

4	smelled like product	smelled like product	smelled like product
	product & malodor	product & malodor	product & malodor
	smelled like product	smelled like product	smelled like product

Summary:

Substrates:	Liquid				
Contaminants:	Odor				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Daycon	DX-50, Mal-odor & Stain Remover	100	0.00	☑	
Clorox Company	Formula 409 All Purpose Cleaner	100	0.00	☑	
GenEon	GenEon Solution	100	0.00	☐	

Conclusion:

The testing revealed that the best cleaner used to remove malodors proved to be the DX-50 product. It initially removed all of the malodor and when it was let sit overnight and on the next day it was found that it removed ALL of the malodor inside the bottle and it had a fresh clean scent. The cleaner which was found to be the least effective at removing malodors was the Gen Eon product. Even when it was applied initially the malodor was still prevalent in some of the bottles. When the Gen Eon set overnight, the malodor also returned on the next day. Cleaning Formula 409 was found to work well at removing the malodor but it wasn't as powerful as the DX-50 cleaner.