CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2023
DateRun:	03/21/2023
Experimenters:	Alicia McCarthy, Namrata Chauhan, Serena Burkinshaw, Mei Jin, Dylan Labonte
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Liquid
PartType:	Coupon
Contaminants:	Odor
Cleaning Methods:	Low Pressure Spray
Analytical Methods:	Smell
Purpose:	To assess the efficacy of malodor reduction.

Experimental Procedure:

Fifteen glass bottles, three per product, and a control were filled with 6ml of cat urine. The bottles were aged for three days at ambient room temperature (68°F) or until the bottles had the highest rating of malodor (see rating key below). A panel of three to five evaluators assessed the odors to determine the baseline values using the following rating key:

Rating	Description
1	No malodor
2	Slight malodor
3	Noticeable malodor
4	Strong malodor
5	Very strong malodor

The chemical products evaluated for this test were placed in spray bottles as a solution of 6.25ml product in 500ml of autoclaved minimal media. The protocol for minimal media is as follows:

Protocol for 1L of Minimal Media:

- 7.50 g Bacto peptone media
- 3.27g Bushnell Hass Broth
- 1 Liter DI Water
    - Adjust final pH between 6.8 to 7.2 with 1M HCl or 1% NaOH
    - Autoclave before use

Each bottle was subjected to rounds of product treatments and each evaluator was used to assess malodor levels after each cycle of treatment and placed in an incubator at 30°C to replicate a similar temperature to a septic system and holding tank. A cycle of treatment consists of two sprays of product directly into the bottle. Days 1-3 had single treatments with evaluations before and after treatment. The bottles were incubated without treatment or evaluation on the fourth day. Final evaluations were taken on the fifth day. An additional treatment spray is applied on the fifth day into the bottle to see if the cleaning agent can eliminate the increased malodor from Day 4 overnight rest.

Results:

The Instant Power products and Roebic comparative products had very similar average ratings after the initial two-spray treatment. On the second day, all four products that had been treated at least two times had an increase in malodor which only reduced in three of the four products with a third treatment. After heated incubation and no treatment on the fourth day, all four products had reductions in malodor when evaluated on the fifth day. The most effective product of the four was the Instant Power Septic Shock with a final 2.3 average rating and Instant Power RV & Marine Holding Tank was the second most effective at reducing malodor with a final 3.1 average rating.

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Product	Average Ratings (Four Panelists)							
	Day 1 (Initial)	1st Treatment	Day 2	2nd Treatment	Day 3	3rd Treatment	Day 5	Final Treatment
Instant Power RV & Marine Holding Tank	5	3.8	3.7	4.1	4.1	3.8	3.7	3.1
Roebic's RV & Marine Holding Tank	5	3.9	4.2	4	4.4	4.5	3.4	3.9
Instant Power Septic Shock	5	4.3	4.1	3.4	4.8	3.8	3.2	2.3
Roebic's K-37 Septic Tank Treatment	5	4.3	4.2	3.8	4.1	3.4	3.3	3.5

Summary:

Substrates:	Liquid
Contaminants:	Odor

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Instant Power	RV & Marine Tank Treatment	6.25ml/500ml Minimal Media		☑	Final Average Rating: 3.1
ROEBIC Laboratories, Inc.	RV and Marine Holding Tank Treatment	6.25ml/500ml Minimal Media		☐	Final Average Rating: 3.9
Instant Power	Septic Shock	6.25ml/500ml Minimal Media		☑	Final Average Rating: 2.3
ROEBIC Laboratories, Inc.	K-37 Septic Tank Treatment	6.25ml/500ml Minimal Media		☐	Final Average Rating: 3.5

Conclusion: Instant Power RV & Marine Holding Tank and Instant Power Septic Shock were more effective at reducing malodor than the Roebic comparative products.