

SCIENTIFIC MATERIAL INTERNATIONAL INC.

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#07-07 City Industrial Building
71 Tannery Lane
Singapore 1334

17 Jan.,89

SMI/REF: 881212

Attn: Mr. B.A. Yea

Report of Test

Submitted: Kitz Aero 10

Requested: Test for Douglas CSD #3 Antimicrobial curve.

Dilution: Test as received Concentrate and diluted 6 parts dilution prime charge.

Result of Test

3.0 Test Procedure.

3.1 Germicidal activity. The germicidal activity of the samples submitted were tested at the following dilutions.

1. As received concentrated diluted to
2. 6 parts dilution (prime charge)
3. Prime charge diluted (1:5)
4. Prime charge diluted (1:10)

The compounds at these four dilutions were prepared in fresh raw sewage containing 10^9 organisms per ml. A control containing raw sewage without the test compound was included in each set of duplicate tests. The test solutions were incubated at 35°C for 72 hours and were agitated only prior to sampling for plate count.

3.2 Standard Plate Count. The bacterial density of the test solutions were made at 0, 1, 2, 3, 6, 24, 48, and 72 hour intervals using .1 and 1 ml dilutions. Tryptone glucose yeast extract agar was used as the plating medium (DIFCO 0123-01). All the plates were incubated at 35°C for 48 hours prior to counting of the colonies.

Taylor Stanley(Singapore) Pte Ltd
 Product: Kitz Aero 10
 Dilution: As received & diluted 6 parts prime charge
 SMI

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Sample Kitz Aero 10 MPN per 100ml (Coliform)

Sample	0hr	1hr	2hr	3hr	6hr	24hr	48hr	72hr
Undiluted	<3	<3	<3	<3	<3	<3	<3	<3
1:5	<3	<3	<3	<3	<3	<3	<3	5
1:10	<3	<3	<3	<3	<3	15	25	30
Prime	<3	<3	<3	<3	<3	5	15	25
Control	>2400	>2400	>2400	>2400	>2400	>2400	>2400	>2400

Sample Kitz Aero 10 SPC number of organisms per ml repeated organic loading Test

	Dilution	0 min	15 min	30min	45min	60min	75min	90 min
Prime Charge	1:5	-	<1	<1	<1	<1	<1	<1
	1:10				<1	20	30	70
Tap Water Control	-	250	250	300	>300	>300	>300	>300

Sample Kitz Aero 10 MPN

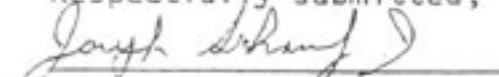
Sample	Dilution	0min	30min	60min	90min
Prime Charge	1:5	<3	<3	<3	<3
	1:10	<3	10	40	100

Odor evaluation rating

Prime charge	0
1:5	0
1:10	+

Summary: The samples submitted meet the requirements of CSD #3.

Respectfully submitted,


 Joseph Schrueter, Jr.

SMI

3.3 Standard Coliform MPN Test . Total coliform count was made on the undiluted compound using lactose broth (DIFCO 0004) by multiple tube fermentation technique per standard methods ,APHA 1971,407A.Duplicate sets of tubes in triplicate were inoculated with 10.0, 1.0 and .1 ml of the test solution. The tubes were incubated at 35°C for 48 hours and the MPN of Coliform bacteria per 100 ml of the sample was calculated from the Table 407 Standard Method (71).
 MPN = Most probable number.

3.4 Repeated organic loading test. Concentrated product and prime charge were prepared in tap water and a tap water control was also made for each test sample. At zero (0) time, 100 ml of fresh sewage was added to 200 ml of the test sample. 1:1½ dilution and the tap water control. After aliquots were removed for bacteriological analysis, the samples and control were incubated at 35°C during 1½ hour duration of the test. At 15 minutes, 100 ml of raw sewage and at 30 minutes 600 ml of raw sewage was added to the sample and control. At 30 minutes the sample was divided into two equal portions at 500 ml each and at 45 minutes 500 ml of raw sewage was added to only one of these portions.

Standard plate counts of the sample and controls were made at time 0,15,30, 45, 60, 75 and 90 minutes. Tryptone glucose yeast extract agar was used as the medium. Total coliform count was made at time 0, 30,60,90 minutes by multiple tube fermentation technique as described in 3.3 Initial plate count and coliform count at time Zero was done on the tap water control.

3.5 Odor Evaluation

The prime charge was diluted 1:5 and 1:10 with raw sewage concentration were tested for deodorizing properties and rated per CSD #3, paragraph 6.

Kitz Aero 10	<u>Result of Test</u>							
	SPC-number of organisms per ml							
Sample	0hr	1hr	2hr	3hr	6hr	24hr	48hr	72hr
1:5	<1	<1	<1	<1	<1	<1	5	11
1:10	<1	<1	<1	<1	<1	15	30	45
Prime Charge	<1	<1	<1	<1	<1	<1	15	25
Control	65	80	95	100	110	>300	>300	>300

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Taylor Stanley (Singapore) Pte Ltd.
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January 26, 1990
SMI/REF:

Attn: Mr. B.A. Yeo

Report of Test

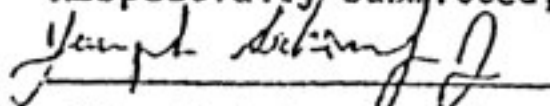
Requested Storage Stability Test Kitz Aero 10 ,November 1988, paragraph 3.2.7

Result of Test

3.2.7 Storage Stability: The product shall neither show separation from exposure to heat or cold nor show an increase in turbidity greater than a control sample equally diluted to use concentration with deionized water, determined in accordance with ASTM F 503.

Result Conform

Respectfully submitted,


Joseph Schrueter, Jr.