



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH

(A unit of Shriram Scientific and Industrial Research Foundation)

19, University Road, Delhi – 110007 (India)
An ISO - 9001, 14001 & OHSAS 18001 Certified Institute

Website : www.shriraminstitute.org
E-mail id : customercare@shriraminstitute.org

TEST CERTIFICATE

NO : C1/0000231109

Issued To :

Client Code : (MUMB01D1378)
DISINFECT SALES AND MARKETING LLP
13B GROUND FLOOR, 5B DATTANI APARTMENT CHS LTD.
SHIVAJI ROAD OPP. THAKUR SHIVAJI ROAD, OPP. THAKUR
INTERNATIONAL SCHOOL
KANDIVALI WEST
MUMBAI -400067

Date : 12-10-2020
Job No : 2010-1-111-747
Booking No : RG2021/1/5106
Booking Date : 05-10-2020
Customer Ref No. : EMAIL
Customer Ref Dt. : 05-10-2020

MUMBAI
MAHARASHTRA-400067

Sample Particulars:

One sample of Disinfect Chlorine dioxide tablet (10g x 2 tablets), Batch no-T2020/05/09, Mfg date-31/05/2020, DOE- 12 Months from DOM was received.

"The sampling was not carried out by Shriram Institute for Industrial Research. The sample details provided in test certificate are based on declaration by the party."

TEST RESULTS

Microbiological Efficacy test

Protocol : As per guidelines of BS EN 1276-2009
Test Organisms : *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*,
Aspergillus niger and *Candida albicans*

Concentration of : 100 ppm

Chlorine dioxide
tablet solution

Contact Time : 15 minutes

Microbiological analysis

S.No.	Test Microorganisms used	0 min count, cfu/ml	15 min count, cfu/ml	Log Reduction	% reduction
1	<i>Escherichia coli</i>	1.1×10^7	<1	7.04	99.999
2	<i>Staphylococcus aureus</i>	1.3×10^7	<1	7.11	99.999
3	<i>Pseudomonas aeruginosa</i>	1.4×10^7	<1	7.14	99.999
4	<i>Aspergillus niger</i>	9.1×10^6	<1	6.95	99.999
5	<i>Candida albicans</i>	1.2×10^7	<1	7.07	99.999

Interpretation: The Disinfect Chlorine Dioxide Tablet (100 ppm) meets the acceptance criteria of BS EN 1276-2009 which is more than 5 log reduction against *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Aspergillus niger* and *Candida albicans*.

DOR: 05.10.2020

DOC: 12.10.2020

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EMPLOYEE CODE: (5419)

GC-01(Rev-05)

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Website : www.shriraminstitute.org
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TEST CERTIFICATE

NO : C1/0000229941

Issued To :

Client Code : (MUMB01D1378)
DISINFECT SALES AND MARKETING LLP
13B GROUND FLOOR, 5B DATTANI APARTMENT CHS LTD.
SHIVAJI ROAD OPP. THAKUR SHIVAJI ROAD, OPP. THAKUR
INTERNATIONAL SCHOOL
KANDIVALI WEST
MUMBAI -400067

Date : 30-09-2020
Job No : 2009-1-111-2179
Booking No : RG2021/1/4513
Booking Date : 21-09-2020
Customer Ref No. : EMAIL
Customer Ref Dt. : 21-09-2020

MUMBAI
MAHARASHTRA-400067

Sample Particulars:

One sample of Disinfect Chlorine dioxide tablet (10g X 2 tablets), Batch no-T2020/05/09, Mfg date-31/05/2020, DOE- 12 Months from DOM was received.

"The sampling was not carried out by Shriram Institute for Industrial Research. The sample details provided in test certificate are based on declaration by the party."

Test-

Protocol-

Test conditions-

Microbiological Efficacy Test

As per ISO 18593: 2018 & SOP No: SRI/MICRO/028

Defined area with controlled temperature $27 \pm 2^\circ\text{C}$ and
humidity $55 \pm 5\%$ RH

TEST RESULTS

A) Microbiological Efficacy test (% reduction) by swab method:

S.No.	Time Intervals for exposure of Disinfect Chlorine dioxide tablet	Test Parameter	Total Bacterial Count/swab
1	Baseline count (0 hour)	Test Value % Reduction	43000 cfu -
2	After 1 hour exposure of Disinfect Chlorine dioxide tablet	Test Value % Reduction	24000 cfu 44
3	After 2 hour exposure of Disinfect Chlorine dioxide tablet	Test Value % Reduction	1100 cfu 97
4	After 4 hour exposure of Disinfect Chlorine dioxide tablet	Test Value % Reduction	<1 cfu 99.99 (Complete removal)


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TEST CERTIFICATE

NO : C1/0000229941

B) Microbiological Efficacy test (% reduction) by Indoor Air sampling method:

S.No.	Time Intervals for exposure of Disinfect Chlorine dioxide tablet	Test Parameter	Total Bacterial Count/m ³
1	Baseline count (0 hour)	Test Value % Reduction	67 cfu -
2	After 1 hour exposure of Disinfect Chlorine dioxide tablet	Test Value % Reduction	50 cfu 25
3	After 2 hour exposure of Disinfect Chlorine dioxide tablet	Test Value % Reduction	2 cfu 97
4	After 4 hour exposure of Disinfect Chlorine dioxide tablet	Test Value % Reduction	No colony observed 99.99 (Complete removal)

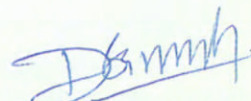
Computational formula for both method:

$$\% \text{ Reduction} = \frac{A - B}{A} \times 100$$

Where: A = The bacterial count at 0 hour

B = The bacterial count at defined time intervals

Interpretation: No colony observed in Total bacterial Count after 4 hrs of study as compared to above baseline (0 hr) count, hence the sample Disinfect Chlorine dioxide tablet is efficient for complete removal of bacteria at 4 hrs for the above set baseline count for both test methods.



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C) Microbiological Efficacy test

Protocol- As per guidelines of BS EN 1276-2009

Test Organisms- *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*,
Aspergillus niger and *Candida albicans*

Contact Time- 15 minute

TEST RESULTS

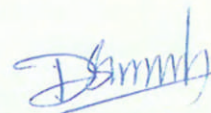
A) Microbiological analysis

S.No.	Test Microorganisms used	'0' min count, cfu/ml	15 min' count, cfu/ml	Log Reduction	% reduction
1	<i>Escherichia coli</i>	1.0×10^7	<1	7.00	99.999
2	<i>Staphylococcus aureus</i>	1.0×10^7	<1	7.00	99.999
3	<i>Pseudomonas aeruginosa</i>	1.0×10^7	<1	7.00	99.999
4	<i>Aspergillus niger</i>	8.7×10^6	<1	6.93	99.999
5	<i>Candida albicans</i>	1.2×10^7	<1	7.07	99.999

Interpretation: The Disinfect Chlorine Dioxide Tablet meets the acceptance criteria of BS EN 1276-2009 which is more than 5 log reduction against *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Aspergillus niger* and *Candida albicans*.

DOR: 21.09.2020

DOC: 30.09.2020



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Website : www.shriraminstitute.org
E-mail id : customercare@shriraminstitute.org

TEST CERTIFICATE

NO : C1/0000237225

Issued To :

Client Code : (PUNE01S3588)
SVS AQUA TECHNOLOGIES
520, MAHAVIR CHAMBERS, NEW RASTA PETH,
PUNE
PUNE
MAHARASHTRA-411011
Kind Attn: -

Date : 27-11-2020
Job No : 2010-1-111-775
Booking No : RG2021/1/5117
Booking Date : 05-10-2020
Customer Ref No. : PURCHASE ORDER NO. 103
Customer Ref DI. : 05-10-2020

Sample Particulars:

One sample of described as product name: **ClO₂ GEL**, Batch No.: G2020/08/38, DOM: Aug-2020, DOE: 12 months from date of manufacturing, Manufacturing by **SVS AQUA Technologies**, Application: use for Indoor Air Decontamination, was received.

"The sample details provided in test certificate are based on declaration by the party."

Test- Air Fumigation Gel Microbiological Efficacy Test
Test Article- ClO₂ GEL
Protocol- As per Sponsors protocol
Test Organisms- Bacteria: *Staphylococcus aureus* (ATCC 6538)
Fungus: *Candida albicans* (ATCC 10231)
Test conditions- Defined area (Approx. 100 square feet) with controlled temperature 27 ± 2°C and humidity 55 ± 5 % RH

TEST RESULTS

A) Air Fumigation Gel Microbiological Efficacy Test : *Staphylococcus aureus*

S.No.	Time Interval for exposure of ClO ₂ GEL	Test Value (in cfu)		Log Reduction	Percent Reduction
		Count before exposure	Count after exposure		
1	Baseline count (0 day)	5.1 x 10 ⁴	-	-	-
2	After day 1 exposure	5.2 x 10 ⁴	3.3 x 10 ²	2.20	99.36
3	After day 3 exposure	5.1 x 10 ⁴	<1	4.70	99.99
4	After day 10 exposure	4.9 x 10 ⁴	<1	4.69	99.99
5	After day 15 exposure	5.3 x 10 ⁴	<1	4.72	99.99
6	After day 20 exposure	5.0 x 10 ⁴	<1	4.69	99.99
7	After day 25 exposure	5.1 x 10 ⁴	<1	4.70	99.99
8	After day 30 exposure	5.2 x 10 ⁴	<1	4.71	99.99

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B) Air Fumigation Gel Microbiological Efficacy Test: *Candida albicans*

S.No.	Time Interval for exposure of ClO ₂ GEL	Test Value (in cfu)		Log Reduction	Percent Reduction
		Count before exposure	Count after exposure		
1	Baseline count (0 day)	3.8×10^4	-	-	-
2	After day 1 exposure	3.7×10^4	1.2×10^2	2.49	99.67
3	After day 3 exposure	3.9×10^4	<1	4.59	99.99
4	After day 10 exposure	3.7×10^4	<1	4.56	99.99
5	After day 15 exposure	3.8×10^4	<1	4.57	99.99
6	After day 20 exposure	3.6×10^4	<1	4.55	99.99
7	After day 25 exposure	3.7×10^4	<1	4.56	99.99
8	After day 30 exposure	3.5×10^4	<1	4.54	99.99

Computational formula for both method:

$$\% \text{ Reduction} = \frac{A - B}{A} \times 100$$

Where: A = The test organism count before exposure

B = The test organism count after exposure

$$\text{Log Reduction} = \log_{10}(A) - \log_{10}(B)$$

Where: A = The test organism log value before exposure

B = The test organism log value after exposure

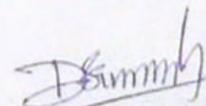
Interpretation: The ClO₂ GEL showed 99.99 % and more than 4 log reduction upto day 30 exposure against *Staphylococcus aureus* and *Candida albicans*. Hence tested sample is efficient for Indoor Air Fumigation with respect above test method.

DOR: 05.10.2020

DOC: 27.11.2020

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