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Water Research & Technology Centre
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AQUADIAGNOSTICS WATER RESEARCH & TECHNOLOGY CENTRE LIMITED
CIN:U73100KA2008PLC045994 | An IAPMO Group – USA Company
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GSTIN: 29AAHCAO185G1ZP

TEST REPORT

Report No: AWRTCL/PRTR/ 17361/20-21 **Date: 27.05.2020**

CUSTOMER DETAILS	SAMPLE DETAILS	TEST DETAILS
Name & Address : **Mr.Umesh Agrawal** **Watch Water INDIA (Watch Water Treatment Pvt Ltd.)** **B-11 SHANKAR GARDEN** **VIKAS PURI,** **NEW DELHI - 110018, INDIA**	**Sample received: 18.05.2020** **Sample code no: AWRTCL/17361/20-21** **Sample Description: Virol-Oxy Disinfectant** **Sample Quantity for Testing: 1 Kg powder** **Submitted by :M/s. Pure N Safe Pvt Ltd** **Date of Analysis started : 19.05.2020** **Date of Analysis Completed: 26.05.2020** **Subcontract : Not Applicable** **Sample condition when received: Intact**	**Method:** **As agreed between the Testing Laboratory and the customer**

EXECUTIVE SUMMARY:

A project was taken up to assess Microbial decontamination of hands with induced microbial contamination using Virol-Oxy disinfectant solution. Virol-Oxy disinfectant powder, manufactured by Watch Water GMBH, Germany and marketed by M/s Pure N Safe Pvt Limited was tested at 0.5% solution (2.5 gr in 500 ml of Tap water) for its capability to reduce induced microbial contamination on Hands (palms) with an exposure time of 1 minute duration. The tested disinfectant solution was found to be **effective in reducing 11 different microbial species (constituting 8 bacterial species one Surrogate Virus, one Mold and one Yeast species) to the tune of ≥99.9999%.**

PICTURE OF VIROL-OXY DISINFECTANT PACK

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METHODOLOGY:

Two palms were smeared with 1 ml 24 hr old broth culture of a known microbial species. The contents were allowed to air dry for 10 minutes. One of the palm smears was swabbed and transferred to 9 ml of 0.9% physiological saline. Serial dilutions were made and 1 ml inoculum was plated out on selective agars. Incubation was done at 37 ^{0}C / 24-48 hr. Colonies were enumerated. **This is BEFORE TREATMENT**

The second palm smear was exposed to 1 ml of 0.5% solution of Virol-Oxy disinfectant liquid and allowed for air drying for 1 minute. The treated smear of palm was swabbed and transferred to 9 ml of 0.9% physiological saline. Serial dilutions were made and 1 ml inoculum was plated out on selective agars. Incubation was done at 37 ^{0}C / 24-48 hr. Colonies were enumerated. **This is AFTER TREATMENT**

Note: Yeast & Mold plates were incubated at 25^{0}C/3-5 days.

% Reduction was calculated by taking microbial counts Before Treatment as reference.

The Tap water used for preparing Virol-Oxy Solution : TDS 435 mg/L, pH: 7.52, Temperature: : 25 ^{0}C

TEST DATA: Microbial reduction on Hands with Induced microorganisms)

Name of the organism	Microbial counts BeforeTreatment	Microbial counts After Treatment	% Reduction
BACTERIA			
E.coli MTCC 68	8.0x 10^6 cfu/ Swab	NVC /swab	≥99.9999
Salmonella typhimurium MTCC 98	15.0 x 10^6 cfu/ Swab	NVC /swab	≥99.9999
Shigella flexneri MTCC 1457	5.0 x 10^6 cfu/ Swab	NVC /swab	≥99.9999
Staphylococcus aureus MTCC 87	9.0 x 10^6 cfu/ Swab	NVC/swab	≥99.9999
Enterococcus fecalis MTCC 439	8.0 x 10^6 cfu/ Swab	NVC/swab	≥99.9999
Pseudomonas aeruginosa MTCC 424	9.0 x 10^6 cfu/ Swab	NVC/swab	≥99.9999
Vibrio Cholera MTCC 3906	8.0 x 10^6 cfu/ Swab	NVC/swab	≥99.9999
Clostridium perfringens MTCC 450	12.0 x10^6 cfu/ Swab	NVC/ swab	≥99.9999
VIRUS- Bacteriophage			
MS2 phage ATCC15597B1	8.0x 10^6pfu/ Swab	NPFU/swab	≥99.9999
MOLD			
Aspergillus niger MTCC282	8.0 x 10^6 cfu/ Swab	NVC /swab	≥99.9999
YEAST			
Saccharomyces cerevisiae MTCC 2569	6.0 x 10^6 cfu/ Swab	NVC /swab	≥99.9999

Cfu:Colony forming units, Pfu:Plaque forming units, NVC: No viable colony, NPFU: No plaque forming unit

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RESULTS & CONCLUSION:

The test data obtained from various tests conducted using 0.5% solution of Virol-Oxy disinfectant to decontaminate hands (palms) having contamination of know microbial cultures reveals that Virol-Oxy is effective in 60 seconds exposure to bring about at least 99.9999% reduction of microorganisms belonging to bacteria, Yeast and Mold groups.

MICROBIOLOGICAL MEDIA USED

Name of Microorganism	Growth Media used
BACTERIA	
E.coli MTCC 68	M Endo agar medium
Pseudomonas aeruginosa MTCC 424	Cetrimide agar medium
Enterococcus faecalis MTCC 439	Slanetz Bartely agar medium
Vibrio Cholera MTCC 3906	Thiosulphate Citrate Bile slats sucrose agar medium
Salmonella typhimurium MTCC 98	Xylose Lysine Dextrose agar medium
Shigella flexneri MTCC 1457	Deoxycholate Citrate agar
Clostridium perfringens MTCC 450	Differential reinforced clostridial agar
Staphylococcus aureus MTCC 87	Baired parker agar
VIRUS – Bacteriophage	
MS2 phage ATCC15597B1	Tryptone Soya agar
MOLD	
Aspergillus niger MTCC282	Chloramphenicol Yeast Glucose agar
YEAST	
Saccharomyces cerevisiae MTCC 2569	Chloramphenicol Yeast Glucose agar

IMPORTANT

ANALYTICAL METHODS: Standard Methods from IS, APHA and USEPA published documents.
CHEMICALS: All chemicals used are Analytical grade.
LAB EQIPMENT: All equipment used, as applicable, are calibrated by NABL accredited laboratories
WATER: Reagent grade water
MICROBIAL CULTURES: MTCC and ATCC standard cultures

Dr S.MURALIDHARA RAO
Head – Laboratory

00--------End of the Test Report --------00