

Laboratory	Bhavan's Research Center (Microbiology), Barrack No. 11.5/6, Near Post Office, Bhavan's Campus, Munshi Nagar, Andheri (W), Mumbai		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	1 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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I. COSMETICS AND ESSENTIAL OILS

1.	Cosmetics and cosmetic raw materials	Total microbial count	IS: 14648:2011	≥ 1 cfu/ ml, ≥ 10 cfu/ g
		Detection of Gram negative enteric pathogens	IS: 14648:2011	Present/ Absent/g/ml
		Detection of <i>Staphylococcus aureus</i>	IS: 14648:2011	Present/ Absent/g/ml
		Effectiveness of antimicrobial preservative / Challenge test	CSP-007 BRC AOAC Official Method 998.10 Final Action 2009- AOAC International 2011	≥ 1 cfu/ ml, ≥ 10 cfu/ g
		Turbidometric or Tube assay Method	CSP-009 BRC IP 2010 chapter No. 2.2 Biological methods	≥ 0.0005 %
		Disc diffusion susceptibility test of Bauer Kirby	CSP-011 BRC www.cdc.gov/ Manual of Clinical Microbiology/ NCCLS	≥ 6 mm
		Assessment of Antimicrobial Activity using Time Kill Procedure/ Contact Kill Time 1. <i>Escherichia coli</i> ATCC 10536 2. <i>S. aureus</i> ATCC 6538 3. <i>P.aeruginosa</i> ATCC 15442 4. <i>S. epidermidis</i> ATCC 12228 5. <i>S. flexneri</i> ATCC 12022 6. <i>K. pneumoniae</i> ATCC 4352 7. <i>S. typhimurium</i> ATCC 13311 8. <i>Enterococcus hirae</i> ATCC 10541	ASTM Designation E 2315-03. Std guide for assessment of antimicrobial activity using a Time-kill Procedure CSP-008 BRC	≥ 1 cfu/ml, ≥ 10 cfu/ g

Laboratory	Bhavan's Research Center (Microbiology), Barrack No. 11.5/6, Near Post Office, Bhavan's Campus, Munshi Nagar, Andheri (W), Mumbai		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	2 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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Cosmetics and cosmetic raw materials	Cup plate Method	CSP-012 BRC IP 2010 Chapter No. 2.2 Biological methods	≥ 8 mm
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II. ENVIRONMENT AND POLLUTION

1. Bio burden Estimation of Classified and non classified area	Microbial quality of surface (Swab test)	Compend. of mthds. for the microbial. exam. of foods, APHA, 4th edition, 2001,Chapter 3 FS 004 BRC, CS 002 BRC	≥ 10 cfu of Total Bacterial Count/ 25 cm ² /50 cm ² / 100 cm ² ≥ 10 cfu of yeast and mold/25 cm ² /50 cm ² / 100 cm ²
	Microbiological examination of air (sedimentation plate method)	Compend. of mthds. for the microbial. exam. of foods, APHA, 4th edition, 2001,Chapter 3 FA 002 BRC, CA 001 BRC	≥ 1 cfu/ 90 mm diameter plate/ 30 mins
2. Air /surface	Microbial quality of surface (Swab test)	Compend. of mthds. for the microbial. exam. of foods, APHA, 4th edition, 2001,Chapter 3 FS 004 BRC, CS 002 BRC	≥ 10 cfu of Total Bacterial Count / 25 cm ² / 50 cm ² / 100 cm ² ≥ 10 cfu of yeast and mold / 25 cm ² / 50 cm ² / 100 cm ²
	Microbiological examination of air (sedimentation plate method)	Compend. of mthds. for the microbial. exam. of foods, APHA, 4th edition, 2001,Chapter 3 FA 002 BRC, CA 001 BRC	≥ 1 cfu/ 90 mm diameter plate/ 30 mins

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	3 of 12

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III. BIOCIDES

1. Antiseptics	Quantitative suspension test for the evaluation of basic bactericidal activity of chemical disinfectants and antiseptics	BS EN 1040:2005: E BB 001 BRC BF 001 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g
	1. <i>E. coli</i> ATCC 10536 2. <i>S. aureus</i> ATCC 6538 3. <i>P.aeruginosa</i> ATCC 15442 4. <i>S. epidermidis</i> ATCC 12228 5. <i>S. flexneri</i> ATCC 12022 6. <i>K. pneumoniae</i> ATCC 4352 7. <i>S. typhimurium</i> ATCC 13311 8. <i>E. hirae</i> ATCC 10541 9. <i>M. furfur</i> MTCC 1374		
	Quantitative suspension test for the evaluation of fungicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas	EN 1650: 1997 E BF 002 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g
	1. <i>A. niger (brasiliensis)</i> ATCC 16404 2. <i>C. albicans</i> ATCC 10231		

Laboratory	Bhavan's Research Center (Microbiology), Barrack No. 11.5/6, Near Post Office, Bhavan's Campus, Munshi Nagar, Andheri (W), Mumbai		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	4 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Antiseptics	Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas 1. <i>E. coli</i> ATCC 10536 2. <i>S. aureus</i> ATCC 6538 3. <i>P.aeruginosa</i> ATCC 15442 4. <i>S. epidermidis</i> ATCC 12228 5. <i>S. flexneri</i> ATCC 12022 6. <i>K. pneumoniae</i> ATCC 4352 7. <i>S. typhimurium</i> ATCC 13311 8. <i>Enterococcus hirae</i> ATCC 10541	EN 1276: 2009 E BB 002 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g
		Quantitative non porous surface test for the evaluation of bactericidal and / or fungicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas 1. <i>Escherichia coli</i> ATCC 10536 2. <i>S. aureus</i> ATCC 6538 3. <i>P.aeruginosa</i> ATCC 15442 4. <i>S. epidermidis</i> ATCC 12228 5. <i>S. flexneri</i> ATCC 12022 6. <i>K. pneumoniae</i> ATCC 4352 7. <i>S. typhimurium</i> ATCC 13311 8. <i>Enterococcus hirae</i> ATCC 10541	EN 13697: 2001 E BS 001 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	5 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		9. <i>A. niger (brasiliensis)</i> ATCC 16404 10. <i>Candida albicans</i> ATCC 10231		
2.	Sanitizers	Quantitative suspension test for the evaluation of basic bactericidal activity of chemical disinfectants and antiseptics 1. <i>E. coli</i> ATCC 10536 2. <i>S. aureus</i> ATCC 6538 3. <i>P.aeruginosa</i> ATCC 15442 4. <i>S. epidermidis</i> ATCC 12228 5. <i>S. flexneri</i> ATCC 12022 6. <i>K. pneumoniae</i> ATCC 4352 7. <i>S. typhimurium</i> 8. ATCC 13311 9. <i>E. hirae</i> ATCC 10541 10. <i>M. furfur</i> MTCC 1374	BS EN 1040:2005: E BB 001 BRC BF 001 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g
		Quantitative suspension test for the evaluation of fungicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas 1. <i>niger (brasiliensis)</i> ATCC 16404 2. <i>C. albicans</i> ATCC 10231	EN 1650: 1997 E BF 002 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	6 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Sanitizers	Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas 1. <i>E. coli</i> ATCC 10536 2. <i>S. aureus</i> ATCC 6538 3. <i>P.aeruginosa</i> ATCC 15442 4. <i>S. epidermidis</i> ATCC 12228 5. <i>S. flexneri</i> ATCC 12022 6. <i>K. pneumoniae</i> ATCC 4352 7. <i>S. typhimurium</i> ATCC 13311 8. <i>Enterococcus hirae</i> ATCC 10541	EN 1276: 2009 E BB 002 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g
		Quantitative suspension test for the evaluation of sporocidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas 1. <i>Bacillus subtilis</i> ATCC 6633	EN 13704: 2002 E BB 003 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g
		Quantitative non porous surface test for the evaluation of bactericidal and / or fungicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas 1. <i>E. coli</i> ATCC 10536 2. <i>S. aureus</i> ATCC 6538	EN 13697: 2001 E BS 001 BRC	≥ 1 cfu/ ml, ≥ 10 cfu/ g

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	7 of 12

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	Sanitizers	3. <i>P.aeruginosa</i> ATCC 15442 4. <i>S. epidermidis</i> ATCC 12228 5. <i>S. flexneri</i> ATCC 12022 6. <i>K. pneumoniae</i> ATCC 4352 7. <i>S. typhimurium</i> 8. ATCC 13311 9. <i>E. hirae</i> ATCC 10541 10. <i>A. niger (brasiliensis)</i> ATCC 16404 11. <i>C. albicans</i> ATCC 10231		
3.	Disinfectants	Phenol Coefficient Method- Testing disinfectants against <i>Salmonella typhi</i> Phenol Coefficient Method- Testing disinfectants against <i>Staphylococcus aureus</i> Phenol Coefficient Method- Testing disinfectants against <i>Pseudomonas aeruginosa</i> Germicidal and Detergent sanitizing action of disinfectants 1. <i>Escherichia coli</i> ATCC 11229 2. <i>S. aureus</i> ATCC 6538	AOAC Official Method 955.11 Final Action 1964- AOAC International 2011 BP 001 BRC AOAC Official Method 955.12 Final Action 1955- AOAC International 2011 BP 001 BRC AOAC Official Method 955.13 Final Action 1964- AOAC International 2011 BP 001 BRC AOAC Official Method 960.09 Final Action 1960- AOAC International 2011 BP 002 BRC	NA NA NA ≥ 1 cfu/ ml, ≥ 10 cfu/ g

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	8 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
IV. WATER				
1.	Drinking Water	Coliforms	IS: 15185:2002	≥ 1 coliform bacteria/ 100ml
		<i>E coli</i>	IS: 15185:2002	≥ 1 E.coli count /250ml
		<i>Intestinal Enterococci</i>	IS: 15186:2002	≥ 1 Fecal Streptococci / 100ml
		Heterotrophic plate count	Std. mthds. for the exam. of water and waster water, APHA 21 st edition, 2005, 9215	≥ 1 cfu/ ml
		<i>Pseudomonas aeruginosa</i>	IS: 13428: 2005: Annexure D	Absent/ Present/250 ml
		<i>Salmonella and Shigella</i>	IS: 15187: 2002 IS: 5887: Part 7: 1999	Absent/ Present/ 250 ml
		<i>S aureus</i>	IS:5887(Part 2)-1976 Reaffirmed 2005	Absent/ Present/ 250 ml
		Sulphite reducing anaerobes	IS: 13428: 2005: Annexure C	Absent/ Present/ 50 ml
		Standard plate count	IS: 1622: 1981	≥ 1 cfu/ ml
		<i>Vibrio cholera</i>	IS: 5887: PART 5: 1976	Absent/ Present/250 ml
		<i>Vibrio parahaemolyticus</i>	IS: 14987: 2001	Absent/ Present/250 ml
		Yeast and mold count	Std. mthds. for the exam. of water and wastewater, APHA 21 st edition, 2005, 9610	≥ 1 cfu/ ml

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	9 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Packaged Drinking Water	Coliforms	IS: 15185:2002	≥ 1 coliform bacteria/ 100ml
		<i>E coli</i>	IS: 15185:2002	≥ 1 E.coli count /100ml
		<i>Intestinal Enterococci</i>	IS: 15186:2002	≥ 1 Fecal Streptococci / 100ml
		Heterotrophic plate count	Std. mthds. for the exam. of water and wastewater, APHA 21 st edition, 2005, 9215	≥ 1 cfu/ ml
		<i>Pseudomonas aeruginosa</i>	IS: 13428: 2005: Annexure D	Absent/ Present/250 ml
		<i>Salmonella and Shigella</i>	IS: 15187: 2002 IS: 5887: Part 7: 1999	Absent/ Present/250 ml
		<i>S aureus</i>	IS:5887(Part2)-1976 Reaffirmed 2005	Absent/ Present/250 ml
		Sulphite reducing anaerobes	IS: 13428: 2005: Annexure C	Absent/ Present/ 50 ml
		Standard plate count	IS: 1622: 1981	≥ 1 cfu/ ml
		<i>Vibrio cholera</i>	IS: 5887: Part 5: 1976	Absent/ Present/250 ml
		<i>Vibrio parahaemolyticus</i>	IS: 14987: 2001	Absent/ Present/250 ml
		Yeast and mold count	Std. mthds. for the exam. of water and wastewater, APHA 21 st edition, 2005, 9610	≥ 1 cfu/ ml
3.	Packaged Natural Mineral Water	Coliforms	IS: 15185:2002	≥ 1 coliform bacteria/ 100 ml
		<i>E coli</i>	IS: 15185:2002	≥ 1 E.coli count /100ml

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	10 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Packaged Natural Mineral Water	<i>Intestinal Enterococci</i>	IS: 15186:2002	≥ 1 Fecal Streptococci / 100ml
		Heterotrophic plate count	Std. mthds. for the exam. of water and wastewater, APHA 21 st edition, 2005, 9215	≥ 1 cfu/ ml
		<i>Pseudomonas aeruginosa</i>	IS: 13428: 2005: Annexure D	Absent/ Present/250 ml
		<i>S aureus</i>	IS:5887(PART2)-1976 Reaffirmed 2005	Absent/ Present/250 ml
		<i>Salmonella and Shigella</i>	IS: 15187: 2002 IS: 5887: Part 7: 1999	Absent/ Present/250 ml
		Sulphite reducing anaerobes	IS: 13428: 2005: Annexure C	Absent/ Present/ 50 ml
		Standard plate count	IS: 1622: 1981	≥ 1 cfu/ ml
		<i>Vibrio cholera</i>	IS: 5887: Part 5: 1976	Absent/ Present/250 ml
		<i>Vibrio parahaemolyticus</i>	IS: 14987: 2001	Absent/ Present/250 ml
		Yeast and mold count	Std. mthds. for the exam. of water and wastewater, APHA 21 st edition, 2005, 9610	≥ 1 cfu/ ml
4.	Water for Processed Food Industry	Coliforms	IS: 15185:2002	≥ 1 coliform bacteria/ 100ml
		<i>E coli</i>	IS: 15185:2002	≥ 1 E. coli count / 100ml
		<i>Intestinal Enterococci</i>	IS: 15186:2002	≥ 1 Fecal Streptococci / 100ml

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	11 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Water for Processed Food Industry	<i>Pseudomonas aeruginosa</i>	IS: 13428: 2005: Annexure D	Absent/ Present/250 ml
		<i>S aureus</i>	IS:5887(Part2)-1976 Reaffirmed 2005	Absent/ Present/250 ml
		<i>Salmonella and Shigella</i>	IS: 15187: 2002 IS: 5887: Part 7: 1999	Absent/ Present/250 ml
		Sulphite reducing anaerobes	IS: 13428: 2005: Annexure C	Absent/ Present/ 50 ml
		Standard plate count	IS: 1622: 1981	≥ 1 cfu/ ml
		<i>Vibrio cholera</i>	IS: 5887: Part 5: 1976	Absent/ Present/250 ml
		<i>Vibrio parahaemolyticus</i>	IS: 14987: 2001	Absent/ Present/250 ml
		Yeast and mold count	Std. mthds. for the exam. of water and wastewater, APHA 21 st edition, 2005, 9610	≥ 1 cfu/ ml
5.	Water Purifier	Evaluation of drinking water treatment technology for microbiological reduction performance- Viruses- MS 2 Bacteriophage	WB-003 BRC National Sanitary Foundation (NSF) P248: 2008	≥ 1 pfu/ 100 ml
		Evaluation of drinking water treatment technology for microbiological reduction performance- Cysts- <i>Cryptosporidium</i>	WC-002 BRC National Sanitary Foundation (NSF)/ ANSI 53: 2011a	≥ 1 cyst / 1000 ml

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Biological Testing	Issue Date	04.09.2013
Certificate Number	T-1976	Valid Until	03.09.2015
Last Amended on	-	Page	12 of 12

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Water Purifier	Evaluation of drinking water treatment technology for microbiological reduction performance- Microspheres	WM-001 BRC National Sanitary Foundation (NSF)/ ANSI 53: 2011a / P231: 2003	\geq 1microsphere/1000 ml
		Evaluation of drinking water treatment technology for microbiological reduction performance- Bacteria- <i>Raoultella (Klebsiella) terrigena</i>	WB-002 BRC National Sanitary Foundation (NSF) P231: 2003/ P248: 2008	\geq 1 cfu/ 100 ml

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***NOTE:** The Laboratory has demonstrated competence for the stated scope for **WATER**. This however **does not fully cover** the specification requirements of **BIS for the Packaged Drinking Water as per IS:14543 and the Packaged Natural Mineral Water as per IS:13428**.