

Laboratory **Bangalore Analytical Research Center Pvt. Ltd., 37/143, 9<sup>th</sup> Main, 3<sup>rd</sup> Phase, Peenya Industrial Area, Bangalore, Karnataka**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7125**

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Validity **13.04.2018 to 12.04.2020**

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Sl.	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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**BIOLOGICAL TESTING**

<b>I.</b>	<b>WATER</b>			
<b>1</b>	<b>Drinking water</b>	Coliform	IS 1622-1981 (RA 2014)	≥1MPN/100ml
		Faecal Coliform	IS 1622-1981 (RA 2014)	≥1MPN/100ml
		Escherichia coli	IS 1622-1981 (RA 2014)	≥1MPN/100ml
		Standard plate count	IS 1622-1981 (RA 2014)	≥ 1 cfu/ml
<b>2</b>	<b>Ground Water/ Surface Water</b>	Standard plate count	IS 1622-1981 (RA 2014)	≥ 1 cfu/ml
		Coliform	IS 1622-1981 (RA 2014)	≥1MPN/100ml
		Faecal Coliform	IS 1622-1981 (RA 2014)	≥1MPN/100ml
		Escherichia coli	IS 1622-1981 (RA 2014)	≥1MPN/100ml
<b>3</b>	<b>Water for Swimming Pool and Spas</b>	Standard plate count	IS 3328-1993 (RA2013)	≥ 1 cfu/ml
		Coliform bacteria	IS 1622-1981 (RA 2014)	≥1MPN/100ml
		Escherichia coli	IS 1622-1981 (RA 2014)	≥1MPN/100ml
<b>4</b>	<b>Water for Processed Food Industry</b>	Standard plate count	IS 1622-1981 (RA 2014)	≥ 1 cfu/ml
		Coliform	IS 1622-1981 (RA2014)	≥1MPN/100ml
		Proteolytic bacteria count	IS 4251-1967 (RA 2009)	≥ 1 cfu/ml
		Lipolytic bacteria count	IS 4251-1967 (RA 2009)	≥ 1 cfu/ml
<b>5</b>	<b>Liquid effluent water (Treated water)</b>	Coliform	IS 1622-1981 (RA 2014)	≥1MPN/100ml
		Faecal Coliform	IS 1622-1981 (RA 2014)	≥1MPN/100ml
		Escherichia coli	IS 1622-1981 (RA 2014)	≥1MPN/100ml
<b>II.</b>	<b>FOOD &amp; AGRICULTURAL PRODUCTS</b>			

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1.	<b>Canned &amp; Processed foods (Ready to drink beverages, dehydrated fruit cubes, canned vegetables, canned fruits)</b>	Aerobic Microbial Count / Total Plate Count	APHA 5 <sup>th</sup> Edition, 2015, Chapter 8, Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast & Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013	Detected or not Detected
			IS 5887(Part-3):1999 ISO 6579:1993 (RA 2013)	Present or Absent in 25g/ml
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5 <sup>th</sup> Edition,2015 Chapter 31. IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999Reaff.2013	Present or Absent in 25g
		Enterobacteriaceae	APHA 5 <sup>th</sup> Edition 2001, chapter 9	≥ 1 cfu/ml ≥ 10 cfu/g

**Ashok Kumar**  
Convenor

**N. Venkateswaran**  
Program Director

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		C.perfringens	APHA 5 <sup>th</sup> Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
7.	<b>Tea &amp; Tea products (Tea leaves, Tea powder, flavoured tea)</b>	Aerobic Microbial Count / Total Plate Count	APHA 5 <sup>th</sup> Edition, 2015, Chapter 8, Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast & Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013	Detected or not Detected
			IS 5887(Part-3):1999 ISO 6579:1993 (RA 2013)	Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999 (RA.2013)	Present or Absent in 25g
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g

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		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
8.	<b>Meat and Meat Products (mutton products, beef products)</b>	Aerobic Microbial Count / Total Plate Count	APHA 5th Edition, 2015,Chapter 8, Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast &Mould Count	IS 5403:1999 (RA: 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS:5887(Part I ) :1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993(RA 2013)	Detected or not Detected Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999 (RA 2013)	Present or Absent in 25g/ml
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2015, chapter 33	Detected or not Detected 2g/ml
9.	<b>Milk &amp; Dairy</b>	Aerobic Microbial	APHA 5th Edition,	≥ 1 cfu/ml

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	<b>products(Skimmed Milk powder/Whole milk powder, curd, Ice cream, cream Ice cream mix ,butter, cheese, paneer Dairy whitener, Milk Condensed milk, Partly skimmed &amp; skimmed condensed milk, packaged pasteurized milk.)</b>	Count / Total Plate Count	2015,Chapter 8,Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 10 cfu/g
		Yeast &Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993(RA 2013)	Detected or not Detected Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999 (RA 2013)	Present or Absent in 25g
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
<b>10.</b>	<b>Poultry &amp; poultry products .(Raw chicken, frozen chicken, eggs, Chicken sausage)</b>	Aerobic Microbial Count / Total Plate Count	APHA 5th Edition, 2015, Chapter 8,Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast &Mould Count	IS 5403:1999	≥ 1 cfu/ml

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Convenor

**N. Venkateswaran**  
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			(RA 2013)	≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993 (RA 2013)	Detected or not Detected Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
			IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999Reaff.2013	Present or Absent in 25g
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
11.	<b>Snacks &amp; Instant mixes (Ready to eat extruded snacks)</b>	Aerobic Microbial Count / Total Plate Count	APHA 5th Edition, 2015,Chapter 8,Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast &Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g

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		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993(RA 2013)	Detected or not Detected Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999 (RA 2013)	Present or Absent in 25g
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
12.	Coffee & cocoa products (Coffee seeds, coffee powders, cocoa powder, instant coffee, cocoa syrup)	Aerobic Microbial Count / Total Plate Count	APHA 5th Edition, 2015,Chapter 8,Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast &Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml

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				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993 (RA 2013)	Detected or not Detected Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999Reaff.2013	Present or Absent in 25g
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
13.	<b>cereals, pulses &amp; cereal products (Atta, Maida, Ragi flour, Jawar Flour, Rice flour, dal)</b>	Aerobic Microbial Count / Total Plate Count	APHA 5th Edition, 2015, Chapter 8,Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast &Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993(RA 2013)	Detected or not Detected Present or Absent in 25g



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		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999Reaff.2013	Present or Absent in 25g
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
14.	<b>Herbs, spices &amp; condiments (Whole / ground Spices, herbs Condiments Chili powder, Garam masala, Coriander Powder, Turmeric powder)</b>	Aerobic Microbial Count / Total Plate Count	APHA 5th Edition, 2015, Chapter 8, Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast & Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993(RA 2013)	Detected or not Detected Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012)	≥ 100 cfu/g

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			ISO 6888-2:1999	
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999 (RA 2013)	Present or Absent in 25g
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
15.	vegetable & vegetable products (Fresh vegetables, Frozen Green Peas, vegetable salads, vegetable juices)	Aerobic Microbial Count / Total Plate Count	APHA 5th Edition, 2015,Chapter 8,Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast &Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993(RA 2013)	Detected or not Detected Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g

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		Shigella	IS 5887 (Part 7): 1999 (RA 2013)	Present or Absent in 25g
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
16.	Fruits & fruit products (Fresh fruit juices,jam, jellies, cut fruits, squashes, syrups, fruit pulp.)	Aerobic Microbial Count / Total Plate Count	APHA 5th Edition, 2015,Chapter 8,Clause 8.72 IS 5402:2012 ISO 4833:2003	≥ 1 cfu/ml ≥ 10 cfu/g
		Yeast &Mould Count	IS 5403:1999 (RA 2013)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Coliform Count	IS: 5401 (Part 1): 2012 ISO 4832 :2006	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS: 5887 (Part I)1976 (RA 2013)	Present or Absent in g/ml
				≥ 1 cfu/ml ≥ 10 cfu/g
		Salmonella	BARC/TP/MB-013 IS 5887(Part-3):1999 ISO 6579:1993 (RA 2013)	Detected or not Detected Present or Absent in 25g
		Staphylococcus aureus	BARC/TP/MB-019	≥ 1 cfu/ml ≥ 10 cfu/g
			IS 5887(Part 8/ Sec 2):2002 (RA 2012) ISO 6888-2:1999	≥ 100 cfu/g
		B. cereus	APHA 5th Edition, 2015 Chapter31, Clause 31.61 IS 5887 (Part 6): 2012 ISO 7932:2004	≥ 1 cfu/ml ≥ 10 cfu/g ≥ 100 cfu/g
		Shigella	IS 5887 (Part 7): 1999Reaff.2013	Present or Absent in 25g

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		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥ 1 cfu/ml ≥ 10 cfu/g
		C.perfringens	APHA 5th Edition 2001, chapter 33, Clause 33.71	Detected or not Detected 2g/ml
17.	Ready to Eat & Cooked Foods (Cooked rice, sabji, vegetable curry, salad, etc)	Aerobic Microbial count / Total plate count	IS:5402:2012	≥1 cfu/ml ≥10 cfu/g
			APHA 5th Edition, 2015, Chapter 8, Clause 8.72	≥1 cfu/ml ≥10 cfu/g
		Total yeast and mould count	IS:5403:1999 (RA 2013)	≥1 cfu/ml ≥10 cfu/g
		Escherichia coli	IS 5887(Part -1): 1976	Present or Absent in g/ml
				≥10 cfu/g ≥100 cfu/g
		Total coliforms count	IS:5401(Part-1):2012 ISO 4832:2006	≥1 cfu/ml ≥10 cfu/g
		Staphylococcus aureus	IS:5887(Part 8/sec 1)2002 (RA 2012) , ISO 6888-2: 1999	≥100 cfu/g
			BARC/TP/MB-019	≥10 cfu/g ≥100 cfu/g
		Detection of Salmonella sp.	IS :5887(Part 3)1999 (RA 2009)	Present /Absent in 25gm
			BARC/TP/MB-013	Detected or not Detected 25gm
		Detection of Shigella sp.	IS :5887(Part 7)1999 (RA 2009)	Present /Absent in 25gm
		Bacillus cereus	APHA 5th Edition, 2015 Chapter 31, Clause 31.61	≥10 cfu/g ≥100 cfu/g
			IS :5887(Part 6)1999 (RA 2013) ISO 7932:2004	≥10 cfu/g ≥100 cfu/g
		C.perfringens	APHA 5th Edition 2001,	Detected or not Detected

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			chapter 33, Clause 33.71	25g/ml
		Enterobacteriaceae	APHA 5th Edition 2015, chapter 9, Clause 9.62	≥1 cfu/ml ≥10 cfu/g
18.	<b>Cosmetics &amp; Cosmetics products (creams, Face powder, Face wash, Moisturizer, Kajal, Lips stick &amp; lotions)</b>	Total Bacterial Count	IS 14648:2011 (RA 2016)	≥ 1 cfu/ml ≥ 10 cfu/g
		Total Fungal count	IS 14648:2011 (RA 2016)	≥ 1 cfu/ml ≥ 10 cfu/g
		E. coli	IS 14648:2011(RA 2016)	Present or Absent /g
		Pseudomonas aeruginosa	IS 14648:2011(RA 2016)	Present or Absent /g
		Staphylococcus aureus	IS 14648:2011(RA 2016)	Present or Absent /g
		Candida albicans	IS 14648:2011(RA 2016)	Present or Absent /g
19.	<b>Swabs</b>	Aerobic Microbial count / Total plate count	IS:5402:2012	≥1 cfu/ swab
			APHA 5th Edition, 2015, Chapter 8, Clause 8.72	≥1 cfu/ swab
		Total coliforms count	IS:5401(Part-1):2012 ISO 4832:2006	≥1 cfu/ swab
		Escherichia coli	IS 5887(Part -1): 1976	Present or Absent /swab
		Staphylococcus aureus	IS:5887(Part 8/sec 1)2002 (RA 2012) , ISO 6888-2: 1999	≥1 cfu / swab
			BARC/TP/MB-019	≥1 cfu/ swab
20.	<b>Environmental Testing (Settle plate method)</b>	Aerobic Microbial count / Total plate count	IS:5402:2012	cfu per 15 minutes of plate exposure
		Total yeast and mould count	IS:5403:1999 Reaff 2013	cfu per 15 minutes of plate exposure

### CHEMICAL TESTING

I.	<b>WATER</b>			
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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
1.	Drinking water	Specific conductance / Electrical conductivity at 25 <sup>o</sup> C	IS 3025 (Part 14):1984 (Reaff:2013)	50 µmhos/cm to 10000 µmhos/cm
		P <sup>H</sup> at 25 <sup>o</sup> C	IS 3025 (Part 11):1983 ( Reaff:2017)	3.0 to 10
		Odour	IS 3025 (Part 5):1983 ( Reaff:2017)	Agreeable / disagreeable
		Turbidity,	IS 3025 (Part 10):1984 (Reaff:2017)	0.1 NTU to 50 NTU
		Total Hardness as CaCO <sub>3</sub>	IS 3025(Part 21) (RA 2014)	5 mg/L to 3000 mg/L
		Iron as Fe	IS 3025(Part 53):2003 (RA 2014)	0.1 mg/L to 10 mg/L
			APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.030 mg/L to 20 mg/L
		Calcium as Ca	IS 3025 (Part40): 1991(RA 2014)	5 mg/L to 2000 mg/L
		Magnesium as Mg	IS 3025(Part 46): 1994 (RA 2014)	5 mg/L to 1500 mg/L
		Chloride as Cl	IS 3025(Part 32): 1988 (RA 2014)	10 mg/L to 3000 mg/L
		Total alkalinity as CaCO <sub>3</sub>	IS 3025(Part 23): 1986 (RA 2014)	10 mg/L to 2000 mg/L
		Free residual chlorine as Cl <sub>2</sub>	IS 3025(Part 26): 1984 (RA 2014)	0.1 mg/L to 10 mg/L
		Nitrate as NO <sub>3</sub>	IS 3025(Part 34): 1988 (RA 2014)	0.05 mg/L to 100 mg/L
			APHA 23 <sup>rd</sup> Edition 4500-NO3 : 2017	0.22 mg/L to 11 mg/L
		Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 4500-E : 2017	5 mg/L to 500 mg/L
		Total Dissolved Solids	IS 3025(Part 16): 1984 (RA 2017)	25 mg/L to 5000 mg/L

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		Fluoride as F	APHA 23 <sup>rd</sup> Edition 4500-F : 2017	0.05 mg/L to 5 mg/L
		Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.02 mg/L to 10 mg/L
		Cadmium as Cd	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Lead as Pb	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Total chromium as Cr	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Copper as Cu	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Arsenic as As	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Hexavalent chromium as Cr <sup>6+</sup> ,	IS 3025(Part-52)-2014	0.05 mg/L to 20 mg/L
		Aluminum as Al	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.022 mg/L to 10 mg/L
		Silver as Ag	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.30 mg/L to 10 mg/L
		Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.3 mg/L to 10 mg/L
		Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.020 mg/L to 10 mg/L
		Selenium as Se	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.010 mg/L to 10 mg/L
		Cobalt as Co	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.030 mg/L to 10 mg/L
		Barium as Ba	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.030 mg/L to 10 mg/L
		Molybdenum as Mo	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.030 mg/L to 10 mg/L
		Boron as B	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.030 mg/L to 10 mg/L

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2.	Swimming pool water	PH at 25 <sup>o</sup> C	IS 3025(Part 11): 1983 (Reaff:2017)	0.5 to 9.5
		Odour	IS 3025(Part 5): 1983 (RA 2017)	Agreeable/ Disagreeable
		Turbidity	IS 3025(Part 10): 1984 (RA 2017)	0.1 to 1000 NTU
		Chloride as Cl	IS 3025(Part 32): 1988 (RA 2014)	10 to 3000 mg/L
		Total alkalinity as CaCO <sub>3</sub> , mg/L	IS 3025(Part 23): 1986 (RA 2014)	5 to 2000 mg/L
		Free residual chlorine as Cl <sub>2</sub> , mg/L	IS 3025(Part 26): 1984 (RA 2014)	0.1 to 10 mg/L
		Total dissolved solids, mg/L	IS 3025(Part 16): 1984 (RA 2017)	100 to 5000 mg/L
		Lead as Pb, mg/L	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 to 10 mg/L
		Aluminium as Al	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 to 10 mg/L
		Oxygen absorbed in 4 hrs	IS 3025 (Part 63): 2013	0.5 to 150 mg/L
3.	Liquid effluents (effluent water, STP water, waste water, Treated water)	Specific conductance/Electrical conductivity at 25 <sup>o</sup> C	IS 3025(Part 14): 1984 (RA 2013)	100 µmhos/cm to 5000 µmhos/cm
		PH at 25 <sup>o</sup> C	IS 3025(Part 11): 1983 (Reaff:2017)	0.5 to 13.5
		Turbidity	IS 3025(Part 10): 1984 (RA 2017)	0.5 NTU to 1000 NTU
		Total Hardness as CaCO <sub>3</sub>	IS 3025(Part 21) (RA 2014)	100 to 5000 mg/L
		Iron as Fe	IS 3025(Part 53):2003 (RA 2014)	0.1 to 10 mg/L
			APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.22 mg/L to 11 mg/L

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		Calcium as Ca	IS 3025(Part 40):1991 (RA 2014)	30 mg/L to 5000 mg/L
		Magnesium as Mg	IS 3025(Part 46): 1994 (RA 2014)	30 mg/L to 5000 mg/L
		Chloride as Cl	IS 3025(Part 32): 1988 (RA 2014)	25 mg/L to 1000 mg/L
		Total alkalinity as CaCO <sub>3</sub>	IS 3025(Part 23): 1986 (RA 2014)	30 mg/L to 2500 mg/L
		Phenolphthalein alkalinity as CaCO <sub>3</sub>	IS 3025(Part 23): 1986 (RA 2014)	5 mg/L to 2500 mg/L
		Methyl orange alkalinity as CaCO <sub>3</sub>	IS 3025(Part 23): 1986 (RA 2014)	5 mg/L to 2500 mg/L
		Free residual chlorine as Cl <sub>2</sub>	IS 3025(Part 26): 1984 (RA 2014)	0.1 mg/L to 10 mg/L
		Nitrate as NO <sub>3</sub>	IS 3025(Part 34): 1988 (RA 2014)	1 mg/L to 500 mg/L
		Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 4500-E	10 mg/L to 500 mg/L
		Total dissolved solids	IS 3025(Part 16): 1984 (RA 2017)	5 mg/L to 5000 mg/L
		Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Cadmium as Cd	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.02 mg/L to 10 mg/L
		Lead as Pb	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.030 mg/L to 10 mg/L
		Total chromium as Cr	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.01mg/L to 10 mg/L
		Total solids	IS 3025(Part 15):1983 (Reaff:2014)	100 mg/L to 5000 mg/L
		Oil and grease	IS 3025(Part 39):1991 (Reaff:2014)	1 mg/L to 500 mg/L
		Total suspended solids	IS 3025(Part 17): 1996 (Reaff:2017)	1 to 1000 mg/L

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		Fluoride as F	APHA 23 <sup>rd</sup> Edition 4500-F-	0.1 to 5 mg/L
		Residual sodium carbonate as Na <sub>2</sub> CO <sub>3</sub>	IS 11624:1986 (RA 2009)	0.1 m.eq/L to 25 m.eq/L
		% Sodium , %	IS 2488(Part-5)	1 %to 55%
		Sodium absorption ratio	IS 11624-1986(RA 2009)	0.1 to 25
		Sodium as Na	IS 3025(Part 45): 1993 (RA 2014)	0.1 mg/L to 500 mg/L
		Potassium as K	IS 3025(Part 45): 1993 (RA 2014)	0.1 mg/L to 500 mg/L
		Biological oxygen demand @27°C 3days	IS 3025(Part 44): 1993 (RA 2014)	1 mg/L to 3000 mg/L
		Chemical oxygen demand	IS 3025(Part 58): 2006 (RA 2017)	1 mg/L to 5000 mg/L
		Boron as B	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.05 mg/L to 10 mg/L
		Dissolved phosphorous as P	IS 3025(Part 31):1988 (RA 2014)	0.1 mg/L to 20 mg/L
		Ammonical Nitrogen as N	IS 3025(Part 34): 1988 (RA 2014)	2 mg/L to 100 mg/L
		Copper as Cu	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.02 mg/L to 10 mg/L
		Arsenic as As	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Hexavalent chromium as Cr <sup>6+</sup> .	IS 3025(Part-52)-2014	0.05 mg/L to 20 mg/L
		Silver as Ag	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Aluminium as Al	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.03 mg/L to 10 mg/L
		Barium as Ba	APHA 23 <sup>rd</sup> Edition 3120 B : 2017 (By ICP-OES)	0.05mg/L to 10 mg/L

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	<b>Stack Monitoring</b>	Temperature, °C	IS:11255(Part3):2008	Ambient Temperature to 600 °C
		Velocity	IS:11255(Part3):2008	6.1 m/s to 22.0 m/s
		Particulate Matter	IS:11255(Part-1):1985 (RA 2014)	5.2 to 200 mg/Nm <sup>3</sup>
		Sulphur Dioxide	IS:11255(Part2):1985 (RA 2014)	5.3 mg/Nm <sup>3</sup> to 100 mg/Nm <sup>3</sup>
			Flue Gas Analyser (Instrument Manual)	2 mg/Nm <sup>3</sup> to 5140 mg/Nm <sup>3</sup>
		Oxides of Nitrogen	IS:11255(Part7):1985 (RA 2017)	5.1 mg/Nm <sup>3</sup> to 1000 mg/Nm <sup>3</sup>
			Flue Gas Analyser (Instrument Manual)	
		Rate of Discharge	IS:11255(Part3):2008	200 mg/Nm <sup>3</sup> to 5000 mg/Nm <sup>3</sup>
	Emission Rate, Kg/Hr	IS:11255(Part3):2008	0.01 Kg/Hr to 0.1 Kg/Hr	
5.	<b>Ambient Air Monitoring</b>	Sulphur Dioxide	IS 5182 (Part 2) :2001 (RA 2017)	5.2 µg/m <sup>3</sup> to 120 µg/m <sup>3</sup>
		Oxides of Nitrogen	IS 5182 (Part 6) :2006 (RA 2017)	5.4 µg/m <sup>3</sup> to 120 µg/m <sup>3</sup>
		Particulate Matter PM10,	IS 5182(Part 23) :2006 (RA:2017)	5.1 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup>
		Ammonia	METHOD 401 AWMA 3 <sup>rd</sup> edition	5.5 µg/m <sup>3</sup> to 400 µg/m <sup>3</sup>
		Particulate Matter (PM2.5)	CFR 40 (Part – 50) Appendix L- 2006	11.6 µg/m <sup>3</sup> to 500 µg/m <sup>3</sup>
		Nickel	BARC/TP/C – 039	2.1 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>
		Arsenic	BARC / TP /C – 038	2.3 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>
		Lead	IS 5182(Part 22) :2004 (Reaff:2014)	0.01 µg/m <sup>3</sup> to 500 µg/m <sup>3</sup>

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		Benzene	IS 5182(Part 11) :2006 (RA 2017)	1 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup>
6.	Noise Monitoring	Ambient Noise dB (A)	IS 9989 – 1981 (RA 2008)	30 dB (A) to 120 dB (A)

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