

Laboratory MSV Analytical Laboratories, C.M.C Ward No. 18 & C.T.C W.No. 16,
T.S No. 695/A/32/B1, Block No. 19 (1st & 2nd Floor), Sanganakallu
Road, KEB Circle, Bellari, Karnataka

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7207 (in lieu of T-2789)

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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

I.	FOOD & AGRICULTURAL PRODUCTS			
1.	Fruits & Vegetables	Enumeration of micro-organism	IS 5402 (RA 2012)	≥10CFU/gm
		Coliforms	IS 5401 (Part 1): 2012	≥10CFU/gm
		Yeast and mould count	IS 5403:1999 (RA 2005)	≥10CFU/gm
2.	Food and Stuffs	Yeast and mould count	IS 5403:1999 (RA 2005)	≥10CFU/gm
		Coliforms	IS 5401 (Part 1): 2012	≥10CFU/ml
3.	Sugar & Sugar Products	Aerobic microbial count	IS 5402:2012	≥10CFU/gm
		Coliforms	IS 5401 (Part 1) (RA 2012)	≥10CFU/gm
4	Milk & Milk Products	Coliforms	IS 5401(Part 1) (RA 2012)	≥10CFU/ml
		Enumeration of micro-organism	IS 5402:2012	≥10CFU/gm
		Yeast and mould count	IS 5403:1999 (RA 2005)	≥10CFU/gm
5	Maida Atta	Enumeration of micro-organism	IS 5402:2012	≥10CFU/gm
		Coliform	IS 5401(Part 1): 2012	≥10CFU/gm
6	Meat and Meat Products	Enumeration of micro-organism	IS 5402:2012	≥10CFU/gm
		Coli forms	IS 5401(Part 1): 2012	≥1CFU/ml
		Yeast and mould count	IS 5403:1999 (RA 2005)	≥10CFU/gm
II.	WATER			
1.	Package Drinking Water	Enumeration of micro-organism	IS 5402:2012	≥1CFU/ml

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		Yeast and mould count	IS 13428:2005	Present / Absent per 250 ml
		Pseudomonas Aeruginosa	IS 13428 (Annexure D)	Present / Absent per 250 ml
		Sulphate reducing anaerobes	IS 13428 (Annexure C)	Present / Absent per 250 ml
		Coli forms	IS 15185:2002	Present / Absent per 50 ml
2.	Waste Water	Coliforms by multiple tube dilution method	IS 1622:1981 (RA 1996)	>1 MPN/100 ml
		Intestinal enterococci	IS 15186:2002 (RA 2009)	Absent/Present per 100 ml

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CHEMICAL TESTING

I.	FOOD & AGRICULTURAL PRODUCTS			
1.	Fruits & Vegetable	Titration Acidity (as Citric Acid)	IS 13844:2003	0.1 % to 10 %
		Soluble Solids	IS 13815:1993(RA 2003)	1 % to 80 %
		Calcium	IS 2860:1964(RA 2008)	5 mg/kg to 500 mg/kg
		Salt as NaCl	IS 2860:1964(RA 2008)	0.1 % to 25 %
		Moisture	IS 3543:1966(RA 2001)	1 % to 10 %
		Total Ash	IS 3543: 1966 (RA 2001)	1 % to 11 %
		Sulphur Dioxide	IS 4706 (Part 2): 1978 (RA 2005)	10 mg/kg to 5000 mg/kg
		Reducing Sugars	IS 6287:1985 (RA 1999)	0.1% to 60%
		Sucrose	IS 6287:1985 (RA 1999)	0.1% to 95%
		Acid Insoluble Ash	IS 3543:1966 (RA 2001)	0.1% to 1.0 %
		Alcoholic Soluble Extract	IS 3543:1966 (RA 2001)	1 % to 30%
		Ether Soluble Extract	IS 3543:1966 (RA 2001)	1 % to 8 %
		pH	IS 2860:1964 (RA 2008)	1 to 14
		Vitamin C	IS 2860:1964 (RA 2008)	0.01 % to 10 %
		Specific Gravity	IS 2860:1964 (RA 2008)	0.1 to 10
2.	Skimmed Milk Products	Fat	IS 11766:2013	0.1 % to 20 %
		Total Ash	IS 13334	0.1 % to 5 %
		Total Solids	IS 13334	0.1 % to 5 %
		Total Acidity	IS 11766:2013	0.1% to 5 %
		Total Nitrogen	IS 13334	0.1 % to 10 %
		Crude fiber	IS 13334	0.1 % to 10 %

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		Total Protein	IS 13334	1 % to 50 %
3.	Butter	Moisture	IS 3507:1966 Clause 4	1 % to 20 %
		Total Acidity	IS 3507:1966 Clause 8	0.1 % to 5 %
		Fat	IS 3507:1966 Clause 6	1 % to 90 %
		Salt as Nacl	IS 13690	0.1 % to 25 %
4.	Dairy Cream	Fat	IS 3509:1966 Clause 4	0.1 % to 50 %
		Total Acidity	IS 3509:1966 Clause 5	0.1 % to 1 %
5.	Sugar	Moisture	IS 1151-2003	0.1 % to 5 %
		Loss on dry	FSSAI MANUAL	1 % to 100 %
		Conductivity	IS 1151:2003	0.5 umhos to 100 umhos
		Reducing Sugars	IS 1151:2003	1 % to 90 %
		Sulphur Dioxide	IS 6287:1985	1 mg/kg to 1500 mg/kg
6.	Sugar Boiled Confectionary	Moisture	IS 6287:1985 (RA 1999) Clause 5	0.1 % to 10 %
		Sulphated Ash	IS 6287:1985 (RA 1999) Clause 6	0.1 % to 5 %
		Acid insoluble Ash	IS 6287:1985 (RA 1999) Clause 7	0.01 % to 1 %
		Total protein	IS 6287:1985 (RA 1999) Clause 11	0.1 % to 20 %
		Fat	IS 1163:1971 (RA 2002) Annexure.C-1	0.1 % to 40 %
		Sucrose	IS 4079:1967 (RA 2002) Annexure.C-2	0.1 % to 10 %
7.	Spices	Moisture	IS 1797:1985 (RA 2017)	0.2 % to 20 %
		Volatile Oil	IS 1797:1985 (RA 2017)	0.1 % to 5.0 %
		T-Ash	IS 1797:1985 (RA 2017)	0.1 % to 10 %
		Acid insoluble ash	IS 1797:1985 (RA 2017)	0.1 % to 5.0 %
		Crude Fiber	IS 1797:1985 (RA 2017)	0.1 % to 30 %
		Salt as Nacl (D.B)	IS 1797:1985 (RA 2017)	0.1 % to 10 %
8.	Maida and Wheat	Ash	IS 1155:1968 (RA 2015)	0.01 % to 10 %
		Moisture	IS 1009:1979 (RA 2015)	0.5 % to 50 %
		Acid insoluble ash	IS 1009:1979 (RA 2015)	0.01 % to 5 %

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		Protein	IS 1009:1979 (RA 2015)	0.1 % to 40 %
		Gluten	IS 1009:1979 (RA 2015)	1 % to 25 %
9.	Meat and Meat Products	Moisture	IS 5960 (Part 5): 2001	0.1 % to 50 %
		Crude Protein	IS 9808 :1981 (RA 2011)	0.1 % to 50 %
		Crude Fat	IS 9808 :1981 (RA 2011)	5 % to 100 %
		Total Ash	IS 9808 :1981 (RA 2011)	0.1 % to 10 %
		Acid Insoluble ash	IS 9808 :1981 (RA 2011)	0.01 % to 5 %
		Total Fat	IS 5960 (Part 3): 1970 (RA 1999)	0.1 % to 30 %
		Sodium Chloride	IS 5960 (Part 3): 1970 (RA 1999)	0.1 % to 10 %
		Nitrogen (as N)	IS 5960 (Part 1): 1976 (RA 2001)	0.1 % to 5 %
10.	Oils & Fat	Refractive Index	IS 548 (Part 1)	1.300 to 1.700
		Iodine Value	IS 548 (Part 1)	1 to 90
		Saponification Value	IS 548 (Part 1)	1 to 300
		Peroxide Value	IS 548 (Part 1)	0.01 to 10
		Free Fatty Acid	IS 548 (Part 1)	0.01 % to 75 %
		Volatile Oil	IS 548 (Part 1)	Qualitative (Absent/Present)
		Sesame Oil	IS 548 (Part 2)	Qualitative (Absent/Present)
		Cottonseed Oil	IS 548 (Part 2)	Qualitative (Absent/Present)
		Karanja Oil	IS 548 (Part 2)	Qualitative (Absent/Present)
		Castor oil	IS 548 (Part 2)	Qualitative (Absent/Present)
		Neem Oil	IS 548 (Part 2)	Qualitative (Absent/Present)
		Linseed Oil	IS 548 (Part 2)	Qualitative (Absent/Present)

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II.	ORES & MINERALS			
1.	Iron Ore	Total Fe	IS 1493 (Part 1): 1981 (RA 2001)	10 % to 70 %
		SiO ₂	IS 1493 (Part 1): 1981 (RA 2001)	0.5 % to 25 %
		Al ₂ O ₃	IS 1493 (Part 1): 1981 (RA 2001)	0.5 % to 20 %
		P	IS 1493 (Part 1): 1981 (RA 2001)	0.003 % to 0.100 %
		S	IS 1493 (Part 1): 1981 (RA 2001)	0.003 % to 0.01 %
		Loss On Ignition	IS 1760 (Part): 1991 (RA 2001)	0.5 % to 15 %
2.	Manganese Ore	Mn	IS 1473:2004 (RA 2008)	5 % to 50 %
		SiO ₂	IS 1473:2004 (RA 2008)	0.5 % to 15 %
		Fe	IS 1473:2004 (RA 2008)	1 % to 40 %
		Al ₂ O ₃	IS 1473:2004 (RA 2008)	0.5 % to 10 %
		P	IS 1473:2004 (RA 2008)	0.005 % to 0.100 %
		S	IS 1473:2004 (RA 2008)	0.005 % to 0.01 %
3.	Limestone & Dolomite	Loss on Ignition	IS 1760 (Part 1): 1991 (RA 2001)	1 % to 50 %
		SiO ₂	IS 1760 (Part 2): 1991 (RA 2001)	0.5 % to 15 %
		CaO	IS 1760 (Part 3): 1991 (RA 2001)	0.5 % to 60 %
		MgO	IS 1760 (Part 3): 1991 (RA 2001)	0.2 % to 40 %
		Al ₂ O ₃	IS 1760 (Part 3): 1991 (RA 2001)	0.2 % to 2 %
III.	SOLID FUELS			

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1.	Coal & Coke	Moisture	IS 1350 (Part 1): 1984	0.2 % to 50 %
		Ash Content	IS 1350 (Part 1): 1984	0.5 % to 60 %
		Volatile Matter	IS 1350 (Part 1): 1984	0.5 % to 30 %
		Fixed Carbon	IS 1350 (Part 1): 1984	1 % to 70 %
		Sulphur	IS 1350 (Part 3): 1969 (RA 2000)	0.1 % to 10 %
		Grass Colorific Value	IS 1350 (Part 2): 1970 (RA 2000)	30 Kcal to 10000 Kcal
IV.	ATMOSPHERIC POLLUTION			
1.	Ambient Air Quality Monitoring	Particulate matter less than 2.5µg(PM _{2.5})	MSVAL/SOP/A/005 Dated 02.07.2012	1 µg/m ³ to 500 µg/m ³
		Particulate matter less than 10µg (PM ₁₀)	IS 5182 (Part 23): 2006 (RA 2017)	1 µg/m ³ to 10000 µg/m ³
		Oxide of Nitrogen	IS 5182 (Part 6): 2006	3.0 µg/m ³ to 100 µg/m ³
		Sulphur dioxide	IS 5182 (Part 2): 2001	3.0 µg/m ³ to 100 µg/m ³
		Ammonia as NH ₃	Lab SOP No. MSVAL/SOP/A/006 Dated: 02.07.2012	5 µg/m ³ to 1000 µg/m ³
		Ozone as O ₃	IS 5182 (Part 9): 1974 (RA 2014)	5 µg/m ³ to 1000 µg/m ³
		Carbon Monoxide	CO Analyzer method based on electrochemical method (Lab SOP: MSVAL/ SOP/ A/ 007 Dated: 02.07.2012)	1.5 µg/m ³ to 40 µg/m ³
		Lead as Pb	IS 5182 (Part 22): 2004 (RA 2014)	0.04 µg/m ³ to 10 µg/m ³
		Nickel as Ni	Lab SOP No. MSVAL/ SOP/ A/008 ; Dated: 02.07.2012	10 µg/m ³ to 100 µg/m ³
2.	Stack Emission Monitoring	Velocity	IS 11255 (Part 3): 2008	1 m/s to 60 m/s
		Volume of gas discharge	IS 11255 (Part 3): 2008	20 Nm ³ /hr to 100000 Nm ³ /hr
		Particulate matter	IS 11255 (Part 1): 1985	1 mg/Nm ³ to 1000 mg/Nm ³

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			(RA 2003 & RA2014)	
		Sulphur dioxide	IS 11255 (Part 2): 1985 (RA 2003 & RA 2014)	3 mg/Nm ³ to 1000 mg/Nm ³
		Oxides of Nitrogen	IS 11255 (Part 7): 2005 (RA 2012 & RA 2017)	2 mg/Nm ³ to 500 mg/Nm ³
		Carbon Monoxide	IS 13270:1992 Orsat Apparatus USEPA 3A:1989	1 % to 20 %
		Carbon Dioxide as CO2	IS 13270:1992 Orsat Apparatus USEPA 3A:1989	1 % to 20 %
		Oxygen as O2	IS 13270:1992 Orsat Apparatus USEPA 3A:1989	1 % to 25 %
		Ammonia	IS 11255 (Part 6): 1999 (RA 2014)	1.0 mg/Nm ³ to 20 mg/Nm ³
		Moisture	IS 11255 (Part 3): 2008	1 % to 100 %
		Temperature	IS 11255 (Part 3): 2008	(-)10 °C to 1800 °C
		Acid mist	Lab SOP No. MSVAL/ SOP/ SE/002/Dated 02.07.2012	1 mg/Nm ³ to 500 mg/Nm ³
3.	Indoor Air Quality	PM10	Lab SOP No. MSVAL/SOP/IAQ/005 Dated 06.04.2018	0.1 µg/m ³ to 1000 µg/m ³
		PM2.5	Lab SOP NO MSVAL/SOP/IAQ/005 Dated 06.04.2018 IS 5182 (Part 23): 2006	0.1 µg/m ³ to 500 µg/m ³
		SO2	Instrument Manual Method Lab SOP No. MSVAL/SOP/IAQ/004 Dated 06.04.2018	0.1 mg/kg to 1000 mg/kg
		NOx	Instrument Manual Method Lab SOP No. MSVAL/SOP/IAQ/004 Dated 06.04.2018	0.1 mg/kg to 1000 mg/kg

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		CO	Instrument Manual Method Lab SOP No. MSVAL/SOP/IAQ/007 Dated 06.04.2018	0.1 mg/kg to 1000 mg/kg
		Ammonia	Instrument Manual Method Lab SOP No. MSVAL/SOP/IAQ/004	0 to 100 mg/kg
		VOC	Instrument Manual Method Lab SOP No. MSVAL/SOP/IAQ/005 Dated 06.04.2018	0 to 100 mg/kg
5.	Meteorological Studies	Temperature	MSVAL/SOP/M-01 by Automatic Weather Monitoring Station. Prepared based on EPA-454/R-99-005:2000 and manual of automatic weather station. ;Dated 06.04.2018	-10 to +60 °C
		Barometric Pressure		25 atm to 70 atm
		Humidity		0 to 100 %
		Rain Fall		0.1 to 10
		Wind Direction		0 to 360 degrees
		Wind Speed		0.5 m/s to 50 m/s
		Illumination	IS 3646-1:1992 by illumination	1 LUX to 50,000 LUX
6.	Ambient Noise	Ambient Noise	IS 9989:1981	30 dB(A) to 130 dB(A)
V.	SOIL AND ROCK			
1.	Soil	pH value	IS 2720 (Part 26): 1987 (RA 1997)	1 to 14
		Specific Electrical Conductivity@ 25 °C	IS 14767:2000	1 µS/cm to 500 µS/cm
		Organic matter	IS 2720 (Part 23): 1972 (RA 2010)	0.10 % to 10.0 %
		Water (Moisture) Content	IS 2720 (Part 2): 1973 (RA 2010)	0.1 % to 10 %

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		Water Holding Capacity	Lab SOP No: MSVL/SOP/S-04 Dated 05.01.2018	1 % to 100 %
		Cation Exchange capacity	Lab SOP No: MSVL/SOP/S-03; Dated 05.01.2018	0.2 meq/l to 50 meq/l
		Total Soluble Sulphate	Lab SOP No: MSVL/SOP/S-05 ; Dated 05.01.2018	5 mg/kg to 1000 mg/kg
		Available Phosphorous	Lab SOP No: MSVAL/SOP/S-06 ; Dated 05.01.2018	5 mg/kg to 1000 mg/kg
		Available Nitrogen	Lab SOP No: MSVAL/SOP/S-07 ; Dated 05.01.2018	1 mg/kg to 1000 mg/kg
		Ca in Soil saturation extract	Lab SOP No: MSVAL/SOP/S-08; Dated 05.01.2018	5 mg/kg to 5000 mg/kg
		Mg in Soil saturation extract	Lab SOP No: MSVAL/SOP/S-09; Dated 05.01.2018	5 mg/kg to 2000 mg/kg
		Lead	Lab SOP No: MSVAL/SOP/S-10; Dated 05.01.2018	0.1 µg/g to 5 µg/g
		Copper	Lab SOP No: MSVAL/SOP/S-10; Dated 05.01.2018	0.1 µg/g to 10 µg/g
		Zinc	Lab SOP No: MSVAL/SOP/S-10; Dated 05.01.2018	0.05 µg/g to 5 µg/g
		Cadmium	Lab SOP No: MSVAL/SOP/S-10; Dated	0.1 µg/g to 5 µg/g

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			05.01.2018	
		Iron	Lab SOP No: MSVAL/SOP/S-10; Dated 05.01.2018	1 µg/g to 10 µg/g
		Manganese	Lab SOP No: MSVAL/SOP/S-10; Dated 05.01.2018	1 µg/g to 10 µg/g
VI.	WATER			
1.	Surface Water/ Ground Water/ Portable Water	Color, color units	IS 3025 (Part 4): 1983 (RA 2017)	2 to 100
		Odour	IS 3025 (Part 5): 1983 (RA 2017)	Qualitative Agreeable/Disagreeable
		Taste	IS 3025 (Part 8): 1983 (RA 2017)	Qualitative Agreeable/Disagreeable
		Acidity (as CaCO ₃)	2310 B-APHA 23 rd Edn 2017 IS 3025 (Part 23): 1986 (RA 2009)	1 mg/l to 200 mg/l
		Alkalinity (as CaCO ₃)	2320 B-APHA 23 rd Edn 2017 IS 3025 (Part 23): 1986 (RA 2009)	1 mg/l to 500 mg/l
		Nitrate as NO ₃	4500-NO ₃ , B-APHA 23 rd Edn 2017	1 mg/l to 100 mg/l
		Nitrite as NO ₂	4500-NO ₂ , B-APHA 23 rd Edn 2017 IS 3025 (Part 34): 1998 (RA 2009)	0.01 mg/l to 5 mg/l
		Boron as B	4500-B, B-APHA 23 rd Edn 2017 IS 3025 (Part 57): 2005 (RA 2010)	0.1 mg/l to 100 mg/l

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		Chloride as Cl	4500-Cl, B-APHA 23 rd Edn 2017 IS 3025 (Part 32): 1988 (RA:2009)	1 mg/l to 5000 mg/l
		Hexavalent Chromium as Cr ⁺⁶	3500-Cr, B-APHA 23 rd Edn 2017 IS 3025 (Part 52): 1988 (RA 2009)	0.03 mg/l to 1 mg/l
		Electrical conductivity @25°C	2510 B-APHA 23 rd Edn 2017 IS 3025 (Part 14): 2013	1 µs/cm to 10000 µs/cm
		Dissolved Oxygen	4500-O, C-APHA 23 rd Edn 2017	1 mg/l to 8 mg/l
		Fluoride as F	4500-F ⁻ , D-APHA 23 rd Edn 2017	0.1 mg/l to 100 mg/l
		Calcium as Ca	3500 Ca, B-APHA 23 rd Edn 2017 IS 3025 (Part 40): 1991 (RA 2009)	1 mg/l to 1000 mg/l
		Total Hardness as (as CaCO ₃)	2340 C-APHA 23 rd Edn 2017 IS 3025 (Part 21): 2009	1 mg/l to 1000 mg/l
		Iron as Fe	3500-Fe, B-APHA 23 rd Edn 2017 IS 3025 (Part 53): 2003 (RA 2009)	0.05 mg/l to 10 mg/l
		Magnesium as Mg	3500-Mg, B-APHA 23 rd Edn 2017 IS 3025 (Part 46): 1994 (RA 2009)	1 mg/l to 500 mg/l
		Oil & Grease	5520 D-APHA 23 rd Edn 2017 IS 3025 (Part 39): 1991	1 mg/l to 100 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
			(RA 2009)	
		pH @25°C	4500 H ⁺ , B-APHA 23 rd Edn 2017/IS 3025 (Part11): 1983 (RA 2017)	1 to 14
		Dissolved Phosphate as P	4500-P, D-APHA 23 rd Edn 2017 IS 3025 (Part 31): 1988 (RA 2003)	0.05 mg/l to 50 mg/l
		Potassium as K	3500-K-APHA 23 rd Edn 2017 IS 3025 (Part 45): 1993 (RA 2009)	1 mg/l to 500 mg/l
		Sodium as Na	3500-Na, B-APHA 23 rd Edn 2017 IS 3025 (Part 45): 1993 (RA 2009)	1 mg/l to 500 mg/l
		Total Dissolved Solids	2540 C- APHA 23 rd Edn 2017 IS 3025 (Part 16): 1993 (RA 2017)	1 mg/l to 5000 mg/l
		Sulphate as SO ₄	4500-SO ₄ ²⁻ -APHA 23 rd Edn 2017	1 mg/l to 500 mg/l
		Temperature	2550 B-APHA 23 rd Edn 2017	Ambient - 50 °C
		Turbidity	2530 B-APHA 23 rd Edn 2017 IS 3025 (Part 10): 1984 (RA 2017)	1 NTU to 100 NTU
2.	Package Drinking Water	Color, color units	IS 3025 (Part 4): 1983 (RA 2017)	2 to 100
		Odour	IS 3025 (Part 5): 1983 (RA 2017)	Qualitative Agreeable/Disagreeable
		Taste	3025(part 8): 1984,	Qualitative

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			Reaffirmed 2017	Agreeable/Disagreeable
		Turbidity	2530 B-APHA 23 rd Edn 2017/IS 3025 (Part 10): 1984 (RA 2017)	1-100 NTU
		Total Dissolved Solids	2540 C- APHA 23 rd Edn 2017 IS 3025 (Part 16): 1993 (RA 2017)	1 mg/l to 5000 mg/l
		pH @25°C	4500 H ⁺ , B-APHA 23 rd Edn 2017 IS 3025 (Part 11): 1983 (RA 2017)	1 to 14
		Iron as Fe	3500-Fe ,B-APHA 23 rd Edn 2017 IS 3025 (Part53): 2003 (RA:2014)	0.05 mg/l to 5 mg/l
		Manganese (as Mn)	IS 3025 (Part 59) (RA 2016)	0.05 to 10 mg/l
		Nitrate as NO ₃	IS 3025 (Part34)	0.1 mg/l to100 mg/l
		Nitrite as NO ₂	4500-NO ₂ , B-APHA 23 rd Edn 2017 IS 3025 (Part 34): 1998 (RA 2014)	0.01 mg/l to 10 mg/l
		Fluoride as F	IS 3025 (Part 60)	0.01 mg/l to 1.5 mg/l
		Zinc (As Zn)	IS 3025 (Part 49)	0.05 mg/l to 5 mg/l
		Chloride as Cl	IS 3025 (Part 32) IS 3025 (Part 32): 1988 (RA 2014)	5 mg/l to 1000 mg/l
		Sulphate as SO ₄	IS 3025 (Part 24)4500- SO ₄ ²⁻ -APHA 23 rd Edn 2017	1 mg/l to 500 mg/l
		Alkalinity (as CaCO ₃)	2320 B-APHA 23 rd Edn 2017 IS 3025 (Part 23): 1986 (RA 2014)	1 mg/l to 1000 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
		Calcium as Ca	3500 Ca, B-APHA 23 rd Edn 2017 IS 3025 (Part 40): 1991 (RA 2014)	1 mg/l to 1000 mg/l
		Magnesium as Mg	3500-Mg, B-APHA 23 rd Edn 2017/IS 3025 (Part 46): 1994 (RA 2014)	1 mg/l to 1000 mg/l
		Sodium as Na	3500-Na, B-APHA 23 rd Edn 2017/IS 3025 (Part 45): 1993 (RA 2014)	1 mg/l to 1000 mg/l
		Residual Free Chlorine	IS 3025 (Part 26): 1986/ APHA (22 nd Edition) 4500-Cl G: 2012	0.05 mg/l to 10 mg/l
		Phenolic Compounds as phenols	IS 3025 (Part 43): 1992 (RA 2014)	0.001 mg/l to 1 mg/l
		Mercury (as Hg)	IS 3025 (Part 48) SOP No: MSVL/SOP/W-01 ;Dated 05.01.2018	0.001 mg/l to 0.1 mg/l
		Cadmium	IS 3025 (Part 41) 3111B-Mn, APHA 23 rd Edition, 2017	0.025 mg/l to 5 mg/l
		Lead	IS 3025 (Part 47) 3111B-Mn, APHA 23 rd Edition, 2017	0.5 mg/l to 10 mg/l
		Chromium	IS 3025 (Part 52) 3111B-Mn, APHA 23 rd Edition, 2017	0.1 mg/l to 50 mg/l
		Nickel as Ni	IS 3025 (Part 54) 3111B-Mn, APHA 23 rd Edition, 2017	0.1 mg/l to 50 mg/l
		Copper	IS 3025 (Part 42) 3111B-Mn, APHA 23 rd Edition, 2017	0.1 mg/l to 50 mg/l
		Temperature	2550 B-APHA 23 rd Edn 2017 Dated 02.07.2012	1 °C to 100 °C
VII.	POLLUTION & ENVIRONMENT			

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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.	Waste Water	Acidity (as CaCO ₃)	2310 B-APHA 23 nd Edn 2017	1 mg/l to 200 mg/l
		Alkalinity (as CaCO ₃)	IS 3025 (Part 23) 2320 B-APHA 23 nd Edn 2017	1 mg/l to 500 mg/l
		Ammonical Nitrogen as N	4500-NH ₃ , B, C-APHA 23 nd Edn 2017	1 mg/l to 500 mg/l
		Nitrite as NO ₂	4500-NO ₂ , B-APHA 23 nd Edn 2017	0.01 mg/l to 5 mg/l
		Total kjeldhal Nitrogen as N	4500-N org, B-APHA 23 nd Edn 2017	1 mg/l to 500 mg/l
		BOD at 27°C for 3days	IS 3025 (Part 44): 1993 (RA 2009)	2 mg/l to 5000 mg/l
		Chemical oxygen Demand	5230 B-APHA 23 nd Edn 2017 IS 3025 (Part 58): 2006	4 mg/l to 10000 mg/l
		Chloride as Cl	4500-Cl, B-APHA 23 nd Edn 2017	1 mg/l to 5000 mg/l
		Chlorine Residual	4500-Cl, I-APHA 23 nd Edn 2017	1 mg/l to 50 mg/l
		Hexavalent Chromium as Cr ⁺⁶	3500-Cr, B-APHA 23 nd Edn 2017	0.03 mg/l to 10 mg/l
		Electrical conductivity @25°C	2510 B-APHA 23 nd Edn 2017	1 to 10000 µs/cm
		Dissolved Oxygen	4500-O, C-APHA 23 nd Edn 2017	1 mg/l to 7 mg/l
		Fluoride as F	4500- F ⁻ , B, D-APHA 23 nd Edn 2017	0.1 mg/l to 100 mg/l
		Calcium as Ca	3500 Ca - APHA 23 nd Edn 2017	1 mg/l to 1000 mg/l
		Total Hardness as	2340 C - APHA 23 nd Edn	1 mg/l to 1000 mg/l

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		CaCO ₃	2017	
		Iron as Fe	3500-Fe ,B - APHA 23 nd Edn 2017	0.05 mg/l to 10 mg/l
		Magnesium as Mg	3500-Mg, B - APHA 23 nd Edn 2017	1 mg/l to 1000 mg/l
		Oil & Grease	5520 D - APHA 23 nd Edn 2017	1 mg/l to 100 mg/l
		pH@25°C	4500 H ⁺ , B-APHA 23 nd Edn 2017	1 to 14
		Dissolved Phosphate as P	4500-P,B,D-APHA 23 nd Edn 2017	0.05 mg/l to 50 mg/l
		Potassium	3500-K -APHA 23 nd Edn 2017	1 mg/l to 500 mg/l
		Sodium	3500-Na,B-APHA 23 nd Edn 2017	1 mg/l to 500 mg/l
		Total Dissolved Solids	2540 C- APHA 23 nd Edn 2017	1 mg/l to 5000 mg/l
		Sulphate	4500-SO ₄ ²⁻ - APHA 23 nd Edn 2017	1 mg/l to 500 mg/l
		Total Solids	2540 B - APHA 23 nd Edn 2017	1 mg/l to 5000 mg/l
		Total Suspended Solids	2540 F-APHA 23 nd Edn 2017	1 mg/l to 1000 mg/l
		Turbidity	2530 B-APHA 23 nd Edn 2017	1 NTU to 100 NTU