

Laboratory IVC Labs Private Limited, IVC House, No. 1048, Burma Colony, 2nd Street, Perungudi, Chennai, Tamil Nadu

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6462 (in lieu of T-2731)

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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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CHEMICAL TESTING

I.	ATMOSPHERIC POLLUTION			
1.	Ambient Air Monitoring	Suspended Particulate Matter	IS:5182 (Part-4) 1999 (RA:2010)	5 µg/m ³ to 1000 µg/m ³
		Particulate Matter (Less than 10µm) or PM ₁₀	IS:5182 (Part-23) 2006 (RA: 2012)	5 µg/m ³ to 1000 µg/m ³
		Particulate Matter (Less than 2.5µm) or PM _{2.5}	IVC/ SOP/21 (Issue Date: 04.06.2014)	15 µg/m ³ to 500 µg/m ³
		Sulphur Dioxide (SO ₂)	IS:5182 (Part-2) 2001 (RA:2012)	5 µg/m ³ to 1000 µg/m ³
		Oxides of Nitrogen (NO _x)	IS:5182 (Part-6) 2006 (RA:2012)	9 µg/m ³ to 750 µg/m ³
		Ammonia	IVC/ SOP/22 (Issue Date: 04.06.2014)	20 µg/m ³ to 500µg/m ³
		Nickel	USEPA Method IO 3.2 - 1999	3 ng/m ³ to 500 ng/m ³
		Lead	IS :5182 (Part- 22) :2004 (RA: 2009)	0.5 µg/m ³ to 5 µg/m ³
2.	Stack Emissions Monitoring	Particulate Matter	IS:11255 (Part 1)-1985 (RA:1998)	1 mg/Nm ³ to 1000 mg/Nm ³
		Sulphur Dioxide (SO ₂)	IS 11255 (Part 2)-1985 (RA: 2003)	1 mg/Nm ³ to 1000 mg/Nm ³
		Oxides of Nitrogen (NO _x)	IS:11255 (Part-7) 2005	1 mg/Nm ³ to 1000 mg/Nm ³
		Flue gas Velocity	IS:11255 (Part 3)- 2008	3 m/sec to 60 m/sec
		Flow Rate	IS 11255 (Part 3) – 2008	Min 10 Nm ³ /hr
		Temperature	IS 11255 (Part 3) – 2008	Ambient - 600°C
		Carbon Monoxide	IS:13270:1992 (RA:2009)	0.2% to 2%
		Carbon Dioxide	IS:13270:1992 (RA:2009)	0.2% to 15%
		Oxygen	IS:13270:1992 (RA:2009)	0.2% to 21%

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3.	Noise Level Monitoring	SPL dB(A)	IS:9989(Part-1)-1985 (RA:2008)	40 dB(A) to 110 dB(A)
II.	POLLUTION & ENVIRONMENT			
1.	Waste Water, Effluents,	Total Dissolved Solids	IS:3025 (Part-16) 1984 (RA: 2006) APHA 22nd Edn 2012 – 2540 C	1 mg/L to 20,000 mg/L
		Total Suspended Solids	IS:3025 (Part-17) 1984 (RA: 2002) APHA 22nd Edn 2012 -2540 D,	1 mg/L to 1000 mg/L
		Temperature	2550 B, APHA 22nd Edn 2012	30 °C to 60 °C
		Hexavalent Chromium as Cr ⁶⁺	IS:3025 (Part 52) : 2003 APHA 22nd Edn 2012 – 3500 Cr- B	0.01 mg/L to 20 mg/L
		Residual free chlorine	IS:3025 (Part-26) 1986 (RA:2003) APHA 22nd Edn 2012 - 4500-CI B	0.1 mg/L to 10 mg/L
		Chloride as Cl	IS:3025 (Part-32) 1988 (RA: 2003) APHA 22nd Edn 2012- 4500-CI- B	2 mg/L to 2000 mg/L
		Fluoride as F	IS:3025 (Part 60) :2008 APHA 22nd Edn 2012 - 4500-F D,	0.1 mg/L to 5 mg/L
		pH	IS:3025 (Part-11) 1983 (RA: 2002) APHA 22nd Edn 2012-4500-H+ B,	1 to 14
		Ammonical Nitrogen as N	IS:3025 (Part-34) 1988 (RA: 2003) APHA 22nd Edn 2012 -4500-NH ₃ C,	1 mg/L to 100 mg/L

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		Total Kjeldahl Nitrogen as N	IS:3025 (Part-34) 1988 (RA: 2003) APHA 22nd Edn 2012-4500-N(org) B,	1 mg/L to 500 mg/L
		Phosphorous as PO ₄	IS:3025 (Part-31) 1988 (RA:1999) APHA 22nd Edition 2012 -4500-P D,	0.1 mg/L to 100 mg/L
		Sulphide as H ₂ S	IS:3025 (Part-29) 1986 (RA: 2003) APHA 22nd Edn 2012-4500-S2-F	0.1 mg/L to 50 mg/L
		Sulphate as SO ₄	IS:3025 (Part-24) 1986 (RA:2003) APHA 22nd Edn 2012 - 4500-SO ₄ ,	1 mg/L to 1000 mg/L
		Biochemical Oxygen Demand (BOD)	IS:3025 (Part-44) 1993 (RA: 2003)	4 mg/L to 10,000 mg/L
		Chemical Oxygen Demand (COD)	IS:3025 (Part-58)- 2006 APHA 22nd Edn 2012 - 5220 B,	5 mg/L to 20,000 mg/L
		Oil and Grease	IS:3025 (Part-39) 1991 (RA: 2003) APHA 22nd Edn 2012 - 5520 C,	1 mg/L to 1000 mg/L
		Potassium as K	IS:3025 (Part-45) 1993 (RA: 2003)	1 mg/L to 400 mg/L
		Sodium as Na	IS:3025 (Part-45) 1993 (RA: 2003)	1 mg/L to 400 mg/L
		Lead as Pb	APHA 22 nd Edn 2012 - 3111B	0.2 mg/L to 100 mg/L
		Total Chromium as Cr	APHA 22 nd Edn 2012 - 3111B	0.1 mg/L to 100 mg/L
		Copper as Cu	APHA 22 nd Edn 2012 - 3111B	0.1 mg/L to 100 mg/L
		Zinc as Zn	APHA 22 nd Edn 2012 - 3111B	0.02 mg/L to 100 mg/L

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2.	Solid Waste & Sludge	pH	IS:2720 (Part-26) - 1987 (RA:2011)	1 to 14
		Conductivity	IS:14767-2000 (RA: 2010)	10 µS/cm to 10,000 µS/cm
		Water Content	IS:2720 (Part-2) -1973 (RA: 2010)	2 % to 75%
		Volatile substance 600°C	IS:10158-1982 (RA:2009)	0.5 % to 95%
		Non Volatile substance 600°C	IS:10158-1982 (RA:2009)	0.5% to 95%
		Sodium as Na	EPA Method 7000B - 2007	2 mg/kg to 1000 mg/kg
		Potassium as K	IS:10158-1982 (RA: 2009)	2 mg/kg to 1000 mg/kg
		Calcium as Ca	EPA Method 7000B - 2007	2 mg/kg to 1000 mg/kg
		Magnesium as Mg	EPA Method 7000B - 2007	1 mg/kg to 1000 mg/kg
		Total Nitrogen as N	IS:10158-1982 (RA: 2009)	5 mg/kg to 1000 mg/kg
		Phosphorous as P	IS:10158-1982 (RA: 2009)	0.5 mg/kg to 1000 mg/kg
		Soluble Sulphate as SO ₄	IS:2720 (Part 27)-1977 (RA:2006)	1 mg/kg to 10000 mg/kg
		Oil & Grease	9071B USEPA April 1998	2 mg/kg to 1000 mg/kg
		Total chromium	EPA METHOD 7000B - 2007	0.1 mg/kg to 1000 mg/kg
		Total Organic Carbon	IS:2720 (Part 22) 1972 (RA: 2010)	1 mg/kg to 1000 mg/kg
		Total Organic Matter	IS:2720 (Part 22) 1972 (RA:2010)	2 mg/kg to 1000 mg/kg
3.	Soil	pH	IS:2720 (Part-26) 1987 (RA:2011)	1 to 14
		Conductivity	IS:14767-2000 (RA: 2010)	10 µS/cm to 10,000 µS/cm
		Water Content	IS:2720 (Part-2) -1973 (RA: 2010)	2% to 75%
		Total Nitrogen as N	IS:10158-1982 (RA: 2009)	5 mg/kg to 1000 mg/kg
		Phosphorous as P	IS:10158-1982 (RA: 2009)	0.5 mg/kg to 1000 mg/kg
		Calcium as Ca	EPA Method 7000B - 2007	2 mg/kg to 1000 mg/kg
Magnesium as Mg	EPA Method 7000B - 2007	1 mg/kg to 1000 mg/kg		

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		Total chromium	EPA METHOD 7000B - 2007	0.1 mg/kg to 1000 mg/kg
		Sodium as Na	EPA Method 7000B - 2007	2 mg/kg to 1000 mg/kg
		Potassium as K	IS:10158-1982 (RA: 2009)	2 mg/kg to 1000 mg/kg
		Total Organic Carbon	IS:2720 (Part 22) -1972 (RA: 2010)	1 mg/kg to 1000 mg/kg
		Total Organic Matter	IS:2720 (Part 22) -1972 (RA:2010)	2 mg/kg to 1000 mg/kg
III.	WATER			
1.	Water (Ground water, Drinking Water, Bore well)	Color	IS:3025 (Part-4) 1983 (RA: 2002) APHA 22nd Edn 2012 - 2120 B,	5 to 100Hazen Units
		Odour	IS:3025 (Part-5) 1983 (RA: 2002)	Agreeable/Disagreeable
		Turbidity	IS:3025 (Part-10) 1984 (RA: 2002) APHA 22nd Edn 2012 – 2130 B	0.5 NTU to 400 NTU
		Total Dissolved Solids	IS:3025 (Part-16) 1984 (RA: 2006) APHA 22nd Edn 2012 – 2540 C	1 mg/L to 20,000 mg/L
		pH	IS:3025 (Part-11) 1983 (RA: 2002) APHA 22nd Edn 2012-4500-H+ B,	1 to 14
		Electrical Conductivity @ 25°C	IS:3025 (Part-14) 1984 (RA:2002) APHA 22nd Edn 2012 – 2510 B	2 µS/cm to 20,000 µS/cm
		Iron as Fe	IS:3025 (Part-53)2003/ APHA 22nd Edn 2012 - 3111 B, 3500-Fe B,	0.05 mg/L to 10 mg/L

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		Nitrate as NO ₃	IS:3025 (Part-34) 1988 (RA: 2003) APHA 22nd Edn 2012-4500-NO ₃ B,	1 mg/L to 50 mg/L
		Nitrite as NO ₂	IS:3025 (Part-34) 1988 (RA: 2003)	0.01 mg/L to 10 mg/L
		Fluoride as F	IS:3025 (Part 60) :2008 APHA 22nd Edn 2012 - 4500-F D,	0.1 mg/L to 5 mg/L
		Chloride as Cl	IS:3025 (Part-32) 1988 (RA: 2003) APHA 22nd Edn 2012-4500-Cl- B	2 mg/L to 2000 mg/L
		Sulphate as SO ₄	IS:3025 (Part-24) 1986 (RA:2003) APHA 22nd Edn 2012 - 4500-SO ₄ ,	1 mg/L to 1000 mg/L
		Total Alkalinity as CaCO ₃	IS:3025 (Part-23) 1986 (RA: 2003) APHA 22nd Edn 2012 - 2320 B,	1 mg/L to 1000 mg/L
		Total Hardness as CaCO ₃	IS:3025 (Part-21) 2009 APHA 22nd Edn 2012 - 2340 C,	1 mg/L to 8000 mg/L
		Calcium as Ca	IS:3025 (Part-40) 1991 (RA: 2003) APHA 22nd Edn 2012 - 3500-Ca B,	1 mg/L to 1000 mg/L
		Magnesium as Mg	IS:3025 (Part-46) 1994 (RA: 2003) APHA 22nd Edn 2012 - 3500-Mg B,	1 mg/L to 400 mg/L
		Sodium as Na	IS:3025 (Part-45) 1993 (RA: 2003) APHA 22nd Edn 2012 - 3500-Na B,	1 mg/L to 400 mg/L

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		Residual free chlorine	IS:3025 (Part-26) 1986 (RA:2003) APHA 22nd Edn 2012 - 4500-Cl B	0.1 mg/L to 10 mg/L
		Silica as SiO ₂	IS:3025 (Part-35) 1988 (RA: 2003)	0.1 mg/L to 100 mg/L
		Potassium as K	IS:3025 (Part-45) 1993 (RA: 2003)	1 mg/L to 400 mg/L
		Lead as Pb	APHA 22 nd Edn 2012 - 3111B	0.4 mg/L to 100 mg/L
		Total Chromium as Cr	APHA 22 nd Edn 2012 - 3111B	0.1 mg/L to 100 mg/L
		Copper as Cu	APHA 22 nd Edn 2012 - 3111B	0.1 mg/L to 100 mg/L
		Zinc as Zn	APHA 22 nd Edn 2012 - 3111B	0.04 mg/L to 100 mg/L

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