

Laboratory	Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	31.07.2015
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	POLLUTION & ENVIRONMENT			
1.	Liquid Effluents (waste water, ,ETP Water, STP Water)	Color	IS 3025 (Part 4): 1983 (RA 2002) APHA (22 nd Edition) 2120 B: 2012	2 Hazen to 100 Hazen
		Odor	IS 3025 (Part 5): 1983 (RA 2002)	Qualitative (Agreeable/Disagreeable)
		Suspended Solids	IS 3025 (Part 17): 1984 (RA 1996)	5 mg/l to 1000 mg/l
		Particle Size of suspended Solid (850 Micron)	IS 6339: 1971 (RA 2001)	Quantitative
		pH at 25°C	IS 3025 (Part 11): 1983 (RA 2002) APHA (22 nd Edition) 4500-H ⁺ B: 2012	2 to 12
		Electrical Conductivity 25°C	IS 3025 (Part 14): 1984 (RA 2002) APHA (22 nd Edition) 2510 B: 2012	(2 µmhos to 50000 µmhos)/cm
		Total Dissolved Solids (TDS)	IS 3025 (Part 16): 1984 (RA 2006) APHA (22 nd Edition) 2540 C: 2012	5 mg/l to 10000 mg/l
		Temperature	IS 3025 (Part 9): 1984 (RA 2002) APHA (22 nd Edition) 2550 B: 2012	Ambient – 50 °C
		Oil & Grease	IS 3025 (Part 39): 1991 (RA 2003) APHA (22 nd Edition) 5520 – B: 2012	2 mg/l to 1000 mg/l
		Total Residual chlorine as Cl-	IS 3025 (Part 26): 1986 (RA 2003) APHA (22 nd Edition) 4500 Cl ⁻ B: 2012	0.2 mg/l to 100 mg/l

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	Liquid Effluents (waste water, ,ETP Water, STP Water)	Ammonical Nitrogen	IS 3025 (Part 34): 1988 (RA 2003) APHA (22 nd Edition) 4500NH ₃ -C: 2012	1 mg/l to 1000 mg/l
		Total Kjeldal Nitrogen	IS 3025 (Part 34): 1988 (RA 2003)	1 mg/l to 2000 mg/l
		Free Ammonia as NH ₃	IS 3025 (Part 34): 1988 (RA 2003)	0.1 mg/l to 500 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2006 APHA (22 nd Edition) 5220-B: 2012	4 mg/l to 50000 mg/l
		Biochemical oxygen demand (BOD)	IS 3025 (Part 44): 1993 (RA 2003) APHA (22 nd Edition) 5210-B: 2012	2 mg/l to 20000 mg/l
		Borates as B	IS 13428 Annexure H APHA (22 nd Edition) 4500-B B: 2012	0.1 mg/l to 10 mg/l
		Residual Sodium Carbonate (RSC)	IS 11624: 1986 (RA 2001)	1 meq/l to 100 meq/l
		Percent Sodium %	CEC-SOP WATER-47, Issue No. 01, Issue Dated – 15-06-2011	1 meq/l to 100 meq/l
		Chloride as Cl ⁻	IS 3025 (Part 32): 1988 (RA 2003) APHA (22 nd Edition) 4500 Cl ⁻ B: 2012	0.5 mg/l to 10000 mg/l
		Fluoride as F ⁻	IS 3025 (Part 60): 2008 APHA (22 nd Edition) 4500 F ⁻ D: 2012	0.1 mg/l to 10 mg/l

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Liquid Effluents (waste water, ,ETP Water, STP Water)	Sulphates as SO_4^{2-}	IS 3025 (Part 24): 1986 (RA 2003) APHA (22 nd Edition) 4500 SO_4^{2-} E: 2012	5 mg/l to 50000 mg/l
		Sulphide as S	IS 3025 (Part 29): 1986 (RA 2003) APHA (22 nd Edition) 4500 S^{2-} F: 2012	0.1 mg/l to 100 mg/l
		Dissolved Phosphorus as P	IS 3025 (Part 31): 1988 (RA 2003) APHA (22 nd Edition) 4500 – P B: 2012	0.1 mg/l to 0.05 mg/l
		Total Phosphorus as P	IS 3025 (Part 31): 1988 (RA 2003) APHA (22 nd Edition) 4500 – P B: 2012	0.05 mg/l to 50 mg/l
		Manganese as Mn	IS 3025 (Part 59): 2006 APHA (22 nd Edition) 3500 Mn-B: 2012 APHA (22 nd Edition) 3111 B: 2012	0.05 mg/l to 5.0 mg/l
		Nitrate Nitrogen as $\text{NO}_3\text{-N}$	IS 3025 (Part 34): 1988 (RA 2003) APHA (22 nd Edition) 4500 $\text{NO}_3\text{-B}$: 2012	0.5 mg/l to 200 mg/l
		Total Acidity as CaCO_3	IS 3025 (Part 22): 1986 (RA 2003)	1 mg/l to 10000 mg/l
		Cyanide	APHA (21 nd Edition) 4500-CN-E: 2005 (by UV)	0.05 mg/l to 30 mg/l
		Arsenic as As	IS 3025 (Part 37): 1988 (RA 2003) APHA (22 nd Edition) 3114 B: 2012	0.01 mg/l to 5 mg/l
		Lead as Pb	APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 10 mg/l

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	Liquid Effluents (waste water, ,ETP Water, STP Water)	Mercury as Hg	IS 3025 (Part 48): 1994 (RA 2003) APHA (22 nd Edition) 3112 B: 2012	0.001 mg/l to 5 mg/l
		Cadmium as Cd	IS 3025 (Part 41): 1992 (RA 2009) APHA (22 nd Edition) 3111 B: 2012	0.01 mg/l to 5 mg/l
		Total Chromium as Cr	IS 3025 (Part 52): 2003	0.05 mg/l to 5.0 mg/l
		Hexavalent chromium as Cr ⁶⁺	IS 3025 (Part 52): 2003 by UV APHA (22 nd Edition) 3500 Cr-B: 2012	0.05 mg/l to 50 mg/l
		Selenium as Se	IS 3025 (Part 56) (RA 2003) APHA (22 nd Edition) 3114 B: 2012	0.02 mg/l to 5 mg/l
		copper as cu	APHA (22 nd Edition) 3111B: 2012	0.02 mg/l to 5 mg/l
		Zinc as Zn	IS 3025 (Part 49): 1994 (RA 2003) APHA (22 nd Edition) 3111B: 2012	0.02 mg/l to 5 mg/l
		Nickel as Ni	APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 10 mg/l
		Iron as Fe	IS 3025 (Part 53) (RA 2003) APHA (22 nd Edition) 3500 Fe B: 2012 APHA (22 nd Edition) 3111 B: 2012 by UV	0.01 mg/l to 20 mg/l 0.01 mg/l to 20 mg/l
2.	Solid Waste	pH @ 25 °C	IS 10158: 1982 (RA 2003)	1 to 14
		Moisture content	IS 9235: 1979	1.0 % to 100 %
		Total Kjeldhal Nitrogen	IS 10158: 1982 (RA 2003)	10 mg/kg to 50000 mg/kg

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	Solid Waste	Phosphorus	IS 10158: 1982 (RA 2003)	0.05 mg/kg to 5000 mg/kg
3.	Soil	pH @ 25 °C	IS 2720 (Part 26): 1987 (RA 2002)	2 to 12
		Dry Matter	IS 15106: 2002	50 % to 100 %
		Water Content	IS 15106: 2002	1 % to 50 %
		Specific Electrical Conductivity	IS 14767: 2000	(1 µmhos to 1000 µmhos)/cm
		Total Sulphur	FAO 2007	0.02 % to 10 %
		Calcium Carbonates	IS 2720 (Part 23): 1976 (RA 2006)	0.005 % to 30 %
		Total Soluble Solids	IS 2720 (Part 21): 1977 (RA 2006)	0.01 % to 5 %
		Organic matter	IS 2720 (Part 22): 1972 (RA 2001)	0.1 % to 10 %
		Nitrogen and Nitrogenous compounds	IS 14684: 1999 (RA 2005)	2 mg/kg to 5000 mg/kg
		Oil and grease	APHA (22 nd Edition) 5520-E: 2012	1 to 1000
		Texture	USEPA Soil Screening Guidance:	
		Clay	User's Guide Soil sci. soc.AMJ.,	1 % to 100 %
		Sand	VOL.65,may-june 2001	1 % to 100 %
		Slit		1 % to 100 %
		Sodium as Na	USEPA 3050 B	5 mg/kg to 5000 mg/kg
		Potassium as K	USEPA 3050 B	5 mg/kg to 5000 mg/kg
		Phosphorus as P	IS 10158: 1982 (RA 2003)	0.05 mg/kg to 5000 mg/kg

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II. AIR , GASES & ATMOSPHERE				
1.	Ambient Air Monitoring	Total Suspended Particulate Matter	IS 5182 (Part 4): 2005	10 µg/m ³ to 1000µg/m ³
		Particulate Matter less than 10 micron size (PM10)	IS 5182 (Part 23): 2006	5 µg/m ³ to 1000 µg/m ³
		Particulate Matter less than 2.5 micron size (PM2.5.)	CEC-SOPart AIR -03 Issue No -01 Dated -02/10/2009 In-house method based on CPCB Manual, Vol-1, 2011-2012	5 µg/m ³ to 200 µg/m ³
		Sulphur Dioxide (as SO ₂)	IS 5182 (Part 2): 2001 (RA 2012)	3 µg/m ³ to 100 µg/m ³
		Nitrogen dioxide (as NO ₂)	IS 5182 (Part 6): 2006 (RA 2012)	3 µg/m ³ to 100 µg/m ³
		Carbon Monoxide (as CO)	CEC-SOP AIR-06 Issue No -01 Dated -02/10/2009 In-house method based on Gas Analyzer Manual	1.1 µg/m ³ to 100 mg/m ³
		Ammonia (as NH ₃)	AWMA Method 401	10 µg/m ³ to 400 µg/m ³
		Ozone (as O ₃)	IS 5182 (Part 9): 1999 (AWMA Method 417)	10 µg/m ³ to 200 µg/m ³
		Lead as Pb	IS 5182 (Part 22): 2004	0.001 µg/m ³ to 10 µg/m ³
		Arsenic as As	AWMA Method 302	1 ng/m ³ to 30 ng/m ³
		Nickel as Ni	USEPA IO3.2	3 ng/m ³ to 50 ng/m ³
		Mercury as Hg	AWMA Method 317	0.5 ng/m ³ to 30 ng/m ³

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	Ambient Air Monitoring	Benzene	IS 5182 (Part 11): 2006	1 µg/m ³ to 50 µg/m ³
		Benzo(a) pyrene	IS 5182 (Part 12): 2004 (RA 2009)	0.8 µg/m ³ to 50 µg/m ³
2.	Indoor Air monitoring	Total Suspended Particulate Matter	NIOSH 500	20 µg/m ³ to 15000 µg/m ³
		Particulate Matter less than 10 micron size (PM10)	NIOSH 600	20 µg/m ³ to 8000 µg/m ³
		Sulphur Dioxide (as SO ₂)	IS 5182 (Part 2): 2001 (RA 2012)	3 µg/m ³ to 1000 µg/m ³
		Nitrogen dioxide (as NO ₂)	IS 5182 (Part 6): 2006 (RA 2012) & NIOSH 6014	3 µg/m ³ to 10000 µg/m ³
		Carbon Monoxide (as CO)	CEC-SOP IAQ-07 – Issue No – 01 Dated -14.04.2015 In-house method based on Gas Analyzer Manual	1.1 mg/m ³ to 100 mg/m ³
		Ammonia (as NH ₃)	AWMA Method 401	10 µg/m ³ to 30000 µg/m ³
		Lead as Pb	NIOSH – 7082	0.001 µg/m ³ to 150 µg/m ³
		Arsenic as As	USEPA IO3.2	0.001 µg/m ³ to 300 µg/m ³
		Nickel as Ni	USEPA IO3.2	0.003 µg/m ³ to 500 µg/m ³
3.	Ambient Air & Indoor Air monitoring	Silica	NIOSH 7601	0.05 mg/m ³ to 2.5 mg/m ³

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4.	Volatile Organic Compounds	Toluene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Trans-1,3-Dichloropropene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,1,2-Trichloroethene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,3 Dichloropropene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Di bromochloromethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,2-Dibromo ethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Chlorobenzene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Ethyl benzene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,1,1,2-Trichloroethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		m-Xylene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Part xylene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		o-Xylene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Strene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Bromoform	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Isopropylbenzene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,1,2,2-Tetrachloroethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,2,3-Trichloropropane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³

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Volatile Organic Compounds	Bromobenzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	n-Propylbenzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	2-Chlorotoluene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	1,3,5-Trimethylbenzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	4-Chlorotoluene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	Tert-Butyl benzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	1,2,4-Trimethyl benzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	Butyl benzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	Part Isopropyltoluene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	1,3-Di chlorobenzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	1,4-Di chlorobenzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	n-Butyl benzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	1,2-Dichlorobenzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	1,2-Dibromo-3-chloropropane		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	1,2,4-Trichlorobenzene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	Hexachlorobutadiene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
	Naphthalene		EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³

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	Volatile Organic Compounds	1,2,3-Trichlorobenzene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Benzene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Methylene Chloride	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Trichloro ethylene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,2-Di chloro propane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Bromodichloromethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Dibromomethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Cis-1,3-Dichloropropene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Chloroform	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Bromochloromethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,1,1-Trichloroethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,1-Dichloro propene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Carbon Tetra chloride	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,2-Dichloroethane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		1,1-DiChloroethylene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Trans 1,2 Di chloroethylene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³

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	Volatile Organic Compounds	2,2-Di chloro propane	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
		Cis-1,2 Dichloroethylene	EPA TO – 17/ ASTM D 3687	1.00 µg/m ³ to 500 µg/m ³
5.	Stack Emission Monitoring	Particulate Matter	IS 11255 (Part 1) (RA 2003)	5 mg/Nm ³ to 500 mg/Nm ³
		Oxygen (as O ₂)	IS 13270: 2003 / OCP No. CEC-OCP 10 – In house method based on Flue gas analyser manual	1 % to 25 %
		Carbon Dioxide (as CO ₂)	IS 13270: 2003 / OCP No. CEC-OCP 10 – In house method based on Flue gas analyser manual	1 % to 20 %
		Carbon Monoxide (as CO)	IS 13270: 2003 / OCP No. CEC-OCP 10 – In house method based on Flue gas analyser manual	1 % to 10 %
		Sulphur Dioxide (as SO ₂)	IS 11255 (Part 2): 2003 / OCP No. CEC-OCP 10 – In house method based on Flue gas analyser manual	4 mg/m ³ to 400 mg/m ³
		Oxides of Nitrogen (as NO _x)	IS 11255 (Part 7): 2005 / OCP No. CEC-OCP 10 - In house method based on Flue gas analyser manual	4 mg/m ³ to 200 mg/m ³
		Ammonia	IS 11255 (Part 6): 1999	10 mg/m ³ to 80 mg/m ³
6.	Noise Level Measurement	Sound Level	CEC-OCP 11 - CPCB Method & In house method based on Instrument manual Issue No - 01 Dated : 04/11/2009	30 dB to 130 dB(A)

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7.	Illumination	Illumination	In house method based on instrument manual, CEC-OCP 14, Issue No - 01 Dated : 04/11/2009	30 Lux to 400000 Lux
III. WATER				
1.	Water	Color	IS 3025 (Part 4): 1983 (RA 2002) APHA (22 nd Edition) 2120 B: 2012	2 Hazen to 100 Hazen
		Odour	IS 3025 (Part 5): 1983 (RA 2002)	Qualitative (Agreeable/Disagreeable)
		Taste	IS 3025 (Part 7): 1984 (RA 2002)	Qualitative (Agreeable/Disagreeable)
		Turbidity	IS 3025 (Part 10): 1984 (RA 2002) APHA (22 nd Edition) 2130 B: 2012	1 NTU to 400 NTU
		pH at 25 °C	IS 3025 (Part 11): 1983 (RA 2002) APHA (22 nd Edition) 4500-H ⁺ B: 2012	2 to 12
		Total Dissolved Solids (TDS)	IS 3025 (Part 16): 1984 (RA 2006) APHA (22 nd Edition) 2540 C: 2012	2 mg/l to 10000 mg/l
		Electrical Conductivity	IS 3025 (Part 14): 1984 (RA 2002) APHA (22 nd Edition) 2510 B: 2012	2 µmhos/cm to 20000 µmhos/cm
		Total suspended solids	IS 3025 (Part 17): 1984 (RA 1996) APHA (22 nd Edition) 2540-D: 2012	2 mg/l to 300 mg/l

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	Water	Sulphates as SO_4^{2-}	IS 3025 (Part 24): 1986 (RA 2003) APHA (22 nd Edition) 4500 SO_4^{2-} E: 2012	5 mg/l to 2000 mg/l
		Sulphide as S	IS 3025 (Part 29): 1986 (RA 2003) APHA (22 nd Edition) 4500 S^{2-} F: 2012	0.05 mg/l to 50 mg/l
		Total hardness as CaCO_3	IS 3025 (Part 21): 1983 (RA 2002) APHA (22 nd Edition) 2340 C: 2012	1 mg/l to 5000 mg/l
		Calcium hardness as CaCO_3	APHA (22 nd Edition) 3500 Ca B: 2012	1 mg/l to 3000 mg/l
		Magnesium hardness as CaCO_3	APHA (22 nd Edition) 3500 Mg B: 2012	1 mg/l to 3000 mg/l
		Magnesium as Mg	IS 3025 (Part 46): 1994 (RA 2003) APHA (22 nd Edition) 3500 Mg B: 2012	1 mg/l to 720 mg/l
		Calcium as Ca	IS 3025 (Part 40): 1991 (RA 2003)	1 mg/l to 1200 mg/l
		Chloride as Cl^-	IS 3025 (Part 32): 1988 (RA 2003) APHA (22 nd Edition) 4500 Cl^- B: 2012	0.5 mg/l to 2000 mg/l
		P. Alkalinity as CaCO_3	IS 3025 (Part 23): 1986 (RA 2003) APHA (22 nd Edition) 2320 B: 2012	100 mg/l
		Total alkalinity as CaCO_3	IS 3025 (Part 23): 1986 (RA 2003) APHA (22 nd Edition) 2320 B: 2012	1000 mg/l

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	Water	Nitrite nitrogen as NO ₂ -N	IS 3025 (Part 34): 1988 (RA 2003)	0.01 mg/l to 100 mg/l
		Nitrate nitrogen as NO ₃ -N	IS 3025 (Part 34): 1988 (RA 2003) APHA (22 nd Edition) 4500 NO ₃ -B: 2012	1 mg/l to 100 mg/l
		Fluoride as F ⁻	IS 3025 (Part 60): 2008 APHA (22 nd Edition) 4500 F ⁻ D: 2012	0.1 mg/l to 50 mg/l
		Free Residual chlorine as Cl ⁻	IS 3025 (Part 26): 1986 (RA 2003) APHA (22 nd Edition) 4500 Cl ⁻ B: 2012	0.2 mg/l to 20 mg/l
		Phenolic Compounds as C ₆ H ₅ OH	IS 3025 (Part 43): 1992 (RA 2003) APHA (22 nd Edition) 5530 D: 2012	0.1 mg/l to 1 mg/l
		Anionic surface active agents as MBAS	IS 13428: 2005 Annexure K APHA (22 nd Edition) 5540 C: 2012	0.1 mg/l to 5 mg/l
		Reactive Silica	IS 3025 (Part 35): 1988 (RA 2003) APHA (22 nd Edition) 4500-SiO ₂ - C, D: 2012	0.02 mg/l to 100 mg/l
		Borates as B	IS 13428: 2005 Annexure H APHA (22 nd Edition) 4500-B B: 2012	0.1 mg/l to 10 mg/l
		Cyanide as CN	APHA (22 nd Edition) 4500-CN- E: 2012	0.05 mg/l to 30 mg/l
		Mineral Oil	IS 3025 (Part 39): 1991 (RA 2003) by FTIR	100 mg/l

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	Water	Total Chromium as Cr	IS 3025 (Part 52): 2003 (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.05 mg/l to 20 mg/l
		Hexavalent chromium as Cr ⁶⁺	IS 3025 (Part 52): 2003 APHA (22 nd Edition) 3500 Cr-B: 2012	0.05 mg/l to 50 mg/l
		Organic Solids	IS 3025 (Part 18): 1984 (RA 2002)	2 mg/l to 10000 mg/l
		Inorganic Solids	IS 3025 (Part 18): 1984 (RA 2002)	2 mg/l to 10000 mg/l
		Suspended Matter	IS 3025 (Part 17): 1984 (RA 1996)	2 mg/l to 3000 mg/l
		To neutralize 100 ml sample of water using phenolphthalein as an indicator with 0.02 N NaOH	IS 3025 (Part 22): 1986 (RA 2003)	1 ml to 50 ml
		To neutralize 100 ml sample of water using mixed indicator with 0.02 N H ₂ SO ₄	IS 3025 (Part 23): 1986 (RA 2003)	1 ml to 100 ml
		Oxygen absorbed in 4 hrs	IS 3025 (Part 63): 2007	0.1 mg/l to 100 mg/l
		Total Solids (TS)	IS 3025 (Part 15): 1984 (RA 2003) APHA (22 nd Edition) 2540 B: 2012	2 mg/l to 10000 mg/l
		Aluminium as Al	IS 3025 (Part 55) (RA 2003) IS 15302: 2003	0.03 mg/l to 20 mg/l
		Copper as Cu	IS 3025 (Part 42): 1992 (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 5 mg/l

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	Water	Manganese as Mn	IS 3025 (Part 59): 2006 APHA (22 nd Edition) 3111 B: 2012	0.05 mg/l to 5.0 mg/l
		Sodium as Na	IS 3025 (Part 45): 1993 (RA 2003) APHA (22 nd Edition) 3500 Na-B: 2012	2 mg/l to 1000 mg/l
		Mercury as Hg	IS 3025 (Part 48): 1994 (RA 2003) APHA (22 nd Edition) 3112 B: 2012	0.001 mg/l to 5 mg/l
		Nickel as Ni	APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 10 mg/l
		Zinc as Zn	IS 3025 (Part 49): 1994 (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 5 mg/l
		Arsenic as As	IS 3025 (Part 37): 1988 (RA 2003) APHA (22 nd Edition) 3114 B: 2012	0.01 mg/l to 5 mg/l
		Total iron as Fe	APHA (22 nd Edition) 3111 B: 2012 (AAS)	0.01 mg/l to 20 mg/l
			APHA (22 nd Edition) 3500 Fe B: 2012 (UV Spectro)	0.01 mg/l to 20 mg/l
		Antimony as Sb	APHA (22 nd Edition) 3111 B: 2012	0.005 mg/l to 5 mg/l
		Potassium as K	IS 3025 (Part 45): 1993 (RA 2003) APHA (22 nd Edition) 3500 K-B: 2012	1 mg/l to 500 mg/l
		Lead as Pb	APHA (22 nd Edition) 3111 B: 2012	0.01 mg/l to 10 mg/l
		Cadmium as Cd	IS 3025 (Part 41): 1992 (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.01 mg/l to 5 mg/l

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	Water	Silver as Ag	APHA (22 nd Edition) 3111 B: 2012	0.01 mg/l to 5 mg/l
		Selenium as Se	IS 3025 (Part 56): 2003 APHA (22 nd Edition) 3114 B: 2012	0.005 mg/l to 5 mg/l
		Barium as Ba	IS 15302: 2003 APHA (22 nd Edition) 3111 D: 2012	0.5 mg/l to 10 mg/l
2.	Pesticide Residues	o,p DDT	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		p,p DDT	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		o,p DDE	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		p,p DDE	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		o,p DDD	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		p,p DDD	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Gamma HCH(Lindane)	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Alpha HCH	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Beta HCH	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Delta HCH	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Alpha Endosulfan	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Beta Endosulfan	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		EndosulfanSulphate	USEPA 525.2: 1995	0.05 µg/l to 100 µg/l

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	Pesticide Residues	Monocrotophos	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Ethion	USEPA 525.2: 1995	0.05 µg/l to 100 µg/l
		Chlorpyrifos	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Phorate	USEPA 525.2: 1995	0.05 µg/l to 100 µg/l
		PhorateSulphoxide	USEPA 525.2: 1995	0.03 µg/l to 100 µg/l
		PhorateSulphone	USEPA 525.2: 1995	0.02 µg/l to 100 µg/l
		Butachlor	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Isoproturon	USEPA 525.2: 1995	0.05 µg/l to 100 µg/l
		Alachor	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Atrazine	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Methyl Parathion	USEPA 525.2: 1995	0.05 µg/l to 100 µg/l
		Methyl Paraoxon	USEPA 525.2: 1995	0.05 µg/l to 100 µg/l
		Malathion	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Malaoxon	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Aldrin	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l
		Dieldrin	USEPA 525.2: 1995	0.01 µg/l to 100 µg/l

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3.	Polynuclear Aromatic Hydrocarbons (PAH)	Acenaphthene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Acenaphthylene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Anthracene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Benzo (A) anthracene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Benzo (A) pyrene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Benzo (B) Fluoranthene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Benzo(G,H,I) Perylene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Chrysene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Dibenz (A,H)anthracene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Fluoranthene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Fluorene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Indeno(1,2,3-CD)Pyrene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Naphthalene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Phenanthrene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		Pyrene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		2-Bromonaphthalene	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l

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4.	Polychlorinated Biphenyl (PCB)	2,4,4'-Trichlorobiphenyl (Aroclor – 1016)	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		2,2',5,5'-Tetrachlorobiphenyl (Aroclor – 1221)	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		2,2',4,5,5'-Pentachlorobiphenyl (Aroclor – 1232)	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		2,2',3,4,4'-Hexachlorobiphenyl (Aroclor – 1242)	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		2,2',4,4',5,5'-Hexachlorobiphenyl (Aroclor – 1248)	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
		2,2',3,4,4',5,5'-Heptachlorobiphenyl (Aroclor – 1254)	USEPA 525.2: 1995	0.1 µg/l to 100 µg/l
5.	Sea water	Color	IS 3025 (Part 4): 1983 (RA 2002) APHA (22 nd Edition) 2120 B: 2012	2 Hazen to 100 Hazen
		Odour	IS 3025 (Part 5): 1983 (RA 2002)	Qualitative (Agreeable/Disagreeable)
		Turbidity	IS 3025 (Part 10): 1984 (RA 2002) APHA (22 nd Edition) 2130 B: 2012	1 NTU to 400 NTU
		pH at 25 °C	IS 3025(Part 11): 1983 (RA 2002) APHA (22 nd Edition) 4500-H ⁺ B: 2012	5 to 10

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	Sea water	Electrical Conductivity	IS 3025 (Part 14): 1984 (RA 2002) APHA (22 nd Edition) 2510 B: 2012	(2 µmhos to 70000 µmhos)/cm
		Total Dissolved Solids (TDS)	IS 3025 (Part 16): 1984 (RA 2006) APHA (22 nd Edition) 2540 C: 2012	2 mg/l to 50000 mg/l
		Total suspended solids	IS 3025 (Part 17): 1984 (RA 1996)	2 mg/l to 10000 mg/l
		Magnesium as Mg	IS 3025 (Part 46): 1994 (RA 2003) APHA (22 nd Edition) 3500 Mg B: 2012	1 mg/l to 3000 mg/l
		Calcium as Ca	IS 3025 (Part 40): 1991 (RA 2003)	1 mg/l to 3000 mg/l
		Sulphates as SO ₄ ²⁻	IS 3025 (Part 24): 1986 (RA 2003) APHA (22 nd Edition) 4500 SO ₄ ²⁻ E: 2012	5 mg/l to 4000 mg/l
		Chloride as Cl ⁻	IS 3025 (Part 32): 1988 (RA 2003) APHA (22 nd Edition) 4500 Cl ⁻ B: 2012	0.5 mg/l to 25000 mg/l
		P.Alkalinity as CaCO ₃	IS 3025 (Part 23): 1986 (RA 2003) APHA (22 nd Edition) 2320B: 2012	1.0 mg/l to 5000 mg/l
		Total alkalinity as CaCO ₃	IS 3025 (Part 23): 1986 (RA 2003) APHA (22 nd Edition) 2320 B: 2012	-5000 mg/l
		Reactive silica	IS 3025 Part 35 1988 (RA 2003) APHA (22 nd Edition) 4500-SiO ₂ – C, D: 2012	0.02 mg/l to 100 mg/l
		Free carbon dioxide as CO ₂	APHA (22 nd Edition) 4500 CO ₂ -C: 2012	1 mg/l to 100 mg/l

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	Sea water	Dissolved iron as Fe	IS 3025 (Part 53): 2003 APHA (22 nd Edition) 3111 B: 2012	0.01 mg/l to 20 mg/l
		Sodium as Na	IS 3025 (Part 45): 1993 (RA 2003) APHA (22 nd Edition) 3500 Na-B: 2012	2 mg/l to 50000 mg/l
		Potassium as K	IS 3025 (Part 45): 1993 APHA (22 nd Edition) 3500 K-B: 2012	1 mg/l to 5000 mg/l
		Oil & Grease	IS 3025 (Part 39): 1991 (RA 2003) APHA (22 nd Edition) 5520-B: 2012	2 mg/l to 100 mg/l
		Biochemical oxygen demand (BOD)	IS 3025 (Part 44): 1993 (RA 2003) APHA (22 nd Edition) 5210-B: 2012	2 mg/l to 2000 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2006 APHA (22 nd Edition) 5220-B: 2012	4 mg/l to 5000 mg/l
		Sulphide as S	IS 3025 (Part 29): 1986 (RA -2009) APHA (22 nd Edition) 4500 S ²⁻ F: 2012	0.05 mg/l to 100 mg/l
		Anionic surface active agents as MBAS	IS 13428 (RA 2009) Annexure K APHA (22 nd Edition) 5540 C: 2012	0.1 mg/l to 5 mg/l
		Phenolic Compounds as C ₆ H ₅ OH	IS 3025 (Part 43): 1992 (RA 2003) APHA (22 nd Edition) 5530 D: 2012	0.1 mg/l to 1.0 mg/l
		Borates as B	IS 13428 Annexure H APHA (22 nd Edition) 4500-B: 2012	0.3 mg/l to 10 mg/l

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	Sea water	Aluminium as Al	IS 3025 (Part 55): 2003 IS 15302: 2003 APHA (22 nd Edition) 3500 B: 2012	0.1 mg/l to 20 mg/l
		Arsenic as As	IS 3025 (Part 37): 1988 (RA 2003) APHA (22 nd Edition) 3114 B: 2012	0.01 mg/l to 5 mg/l
		Barium as Ba	IS 15302: 2003 APHA (22 nd Edition) 3111 D: 2012	0.3 mg/l to 10 mg/l
		Cadmium as Cd	IS 3025 (Part 41): 1992 (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.01 mg/l to 5 mg/l
		Chromium as Cr	IS 3025 (Part 52) (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.05 mg/l to 50 mg/l
		Hexavalent chromium as Cr ⁶⁺	IS 3025 (Part 52) (RA 2003) APHA (22 nd Edition) 3500 Cr-B: 2012	0.05 mg/l to 50 mg/l
		Copper as cu	IS 3025 (Part 42): 1992 (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 5 mg/l
		Lead as Pb	IS 3025 (Part 47): 1994 (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 10 mg/l
		Manganese as Mn	IS 3025 (Part 59): 2006 APHA (22 nd Edition) 3111 B: 2012	0.05 mg/l to 5.0 mg/l
		Silver as Ag	APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 5 mg/l
		Zinc as Zn	IS 3025 (Part 49): 1994 (RA 2003) APHA (22 nd Edition) 3111 B: 2012	0.02 mg/l to 5 mg/l

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	Sea water	Mercury as Hg	IS 3025 (Part 48): 1994 (RA 2003) APHA (22 nd Edition) 3112 B: 2012	0.002 mg/l to 5 mg/l
		Selenium as Se	IS 3025 (Part 56) (RA 2003) APHA (22 nd Edition) 3114 B: 2012	0.02 mg/l to 5 mg/l

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