

Laboratory Varshinis En-Test Laboratories (P) Ltd., New No. 869, Old No. 279, II Floor, K.C.S. Kasi Nadar Complex, T.H. Road, Old Washermenpet, Chennai, Tamil Nadu

Accreditation Standard ISO/IEC 17025: 2005

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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.	WATER			
1.	Surface Water Ground Water Drinking Water	Color	IS: 3025 (Part 4) Platinum cobalt (Visual Comparison Method)	1 Hazen Units to 500 Hazen Units
		Odour	IS:3025 (Part 5)	Qualitative
		Temperature	IS:3025 (Part 9)	20 °C to 45 °C
		Turbidity	IS:3025 (Part 10)	0.1 NTU to 400 NTU
		pH @ 25°C	IS:3025 (Part 11)	1 to 12
		Conductivity @ 25°C	IS:3025 (Part 14)	1.0 µS/cm to 200000 µS/cm
		Total Solids	IS:3025 (Part 15)	10 mg/L to 50000 mg/L
		Total Dissolved Solids	IS:3025 (Part 16)	10 mg/L to 50000 mg/L
		Total Suspended Solids	IS:3025 (Part 17)	10 mg/L to 1000 mg/L
		Acidity as CaCO ₃	IS:3025 (Part 22)	10 mg/L to 1000 mg/L
		Total Alkalinity as CaCO ₃	IS:3025(Part 23)	2.0 mg/L to 1000 mg/L
		Total Hardness as CaCO ₃	APHA 23 rd Edition 2340 – C	2.0 mg/L to 1000 mg/L
		Carbonate Hardness as CaCO ₃	APHA 23 rd Edition 2340 – A & C, 2320 B	2.0 mg/L to 1000 mg/L
		Non-Carbonate Hardness as CaCO ₃	APHA 23 rd Edition 2340 – A & C, 2320 B	2.0 mg/L to 1000 mg/L
		Calcium Hardness as CaCO ₃	APHA 23 rd Edition 3500 - Ca –B	2.0 mg/L to 1000 mg/L
		Magnesium Hardness as CaCO ₃	APHA 23 rd Edition 3500 - Mg –B	2.0 mg/L to 1000 mg/L
		Calcium as Ca	APHA 23 rd Edition 3500-Ca - B	1.0 mg/L to 1000 mg/L
		Magnesium as Mg	APHA 23 rd Edition 3500 - Mg –B	1.0 mg/L to 1000 mg/L

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		Sodium as Na	IS:3025 (Part 45) (Flame Photometry method)	1.0 mg/L to 1000 mg/L
		Potassium as K	IS:3025 (Part 45) (Flame Photometry method)	1.0 mg/L to 100 mg/L
		Chloride as Cl	APHA 23 rd Edition 4500-Cl ⁻ / B	2.0 mg/L to 3000 mg/L
		Sulphate as SO ₄	IS:3025 (Part 24) (Turbidity method)	1.0 mg/L to 3000 mg/L
		Iron as Fe	APHA 23 rd Edition 3500 - Fe / B (Phenanthroline method)	0.1 mg/L to 30 mg/L
		Fluoride as F	APHA 23 rd Edition 4500- F / D	0.1 mg/L to 10 mg/L
		Total Silica as SiO ₂	APHA 23 rd Edition 4500- SiO ₂ / C	1.0 mg/L to 100 mg/L
		Chlorine (Residual) as Cl	APHA 23 rd Edition 4500 - Cl / B	0.1 mg/L to 10 mg/L
2.	Construction Water	Chloride as Cl	APHA 23 rd Edition 4500-Cl ⁻ / B	2.0 mg/L to 3000 mg/L
		Sulphate as SO ₄	IS:3025 (Part 24) (Turbidity method)	1.0 mg/L to 3000 mg/L
		Total Suspended Solids	IS:3025 (Part 17)	10 mg/L to 1000 mg/L
		pH @ 25°C	IS:3025 (Part 11)	1 to 12
II.	POLLUTION & ENVIRONMENT			
1.	Waste water	Color	IS: 3025 (Part 4) Platinum cobalt (Visual Comparison Method)	1 to 500 Hazen Units
		Odour	IS:3025 (Part 5)	Qualitative
		Temperature	IS:3025 (Part 9)	20 °C to 45 °C
		Turbidity as NTU	IS:3025 (Part 10)	0.1 NTU to 400 NTU
		pH @ 25°C	IS:3025(Part 11)	1 to 12

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Convenor

N. Venkateswaran
Program Director

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		Conductivity @ 25° C	IS:3025(Part 14)	1.0 µS/cm to 20000 µS/cm
		Total Solids	IS:3025 (Part 15)	10 mg/L to 50000 mg/L
		Total Dissolved Solids	IS:3025 (Part 16)	10 mg/L to 50000 mg/L
		Total Suspended Solids	IS:3025 (Part 17)	10 mg/L to 1000 mg/L
		Sludge Volume Index	APHA 23rd Edition 2710 – D	25 to 250
		Volatile Solids	IS:3025 (Part 18)	10 mg/L to 10000 mg/L
		Fixed Solids	IS:3025 (Part 18)	10 mg/L to 10000 mg/L
		Settleable Matter	IS:3025 (Part 19)	10 ml/L to 40 ml/L
		Sodium as Na	IS:3025 (Part 45) (Flame Photometry method)	1.0 mg/L to 1000 mg/L
		Potassium as K	IS:3025 (Part 45) (Flame Photometry method)	1.0 mg/L to 100 mg/L
		Acidity as CaCO ₃	IS:3025 (Part 22)	2.0 mg/L to 1000 mg/L
		Total Alkalinity as CaCO ₃	IS:3025 (Part 23)	2.0 mg/L to 1000 mg/L
		Calcium as Ca	APHA 23 rd Edition 3500-Ca - B	1.0 mg/L to 1000 mg/L
		Magnesium as Mg	APHA 23 rd Edition 3500 - Mg –B	1.0 mg/L to 1000 mg/L
		Total Chromium as Cr	IS:3025 (Part 52) (Diphenyl carbazide method)	0.05 mg/L to 100 mg/L
		Hexavalent Chromium as Cr ⁶⁺	IS:3025 (Part 52) (Diphenyl carbazide method)	0.05 mg/L to 100 mg/L
		Manganese as Mn	APHA 23 rd Edition 3500 - Mn / B (Persulphate method)	0.1 mg/L to 100 mg/L
		Cadmium as Cd	APHA 23 rd Edition 3500 - Cd (Dithizone method)	0.1 mg/L to 10 mg/L
		Nickel as Ni	IS:3025(Part 54) 2014 (Dimethyl glyoxime method)	0.1 mg/L to 100 mg/L
		Copper as Cu	APHA 23rd Edition 3500 - Cu / B (Neocuproine method)	0.1 mg/L to 100 mg/L

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		Zinc as Zn	APHA 23 rd Edition 3500-Zn / B (Zincon method)	0.05 mg/L to 100 mg/L
		Lead as Pb	APHA 23 rd Edition 3500 - Pb / B (Dithizone method)	0.05 mg/L to 100 mg/L
		Iron as Fe	APHA 23 rd Edition 3500 - Fe / B (Phenanthroline method)	0.1 mg/L to 30 mg/L
		Cyanide as CN	IS:3025(Part 27) (Colorimetric method)	0.05 mg/L to 5.0 mg/L
		Sulphate as SO ₄	IS:3025(Part 24) (Turbidity method)	1.0 mg/L to 5000 mg/L
		Sulphide as S	IS:3025 (Part 29) (Iodometric method)	1.0 mg/L to 50 mg/L
		Total Phosphorus as PO ₄	APHA 23 rd Edition 4500- P / D	0.1 mg/L to 500 mg/L
		Chloride as Cl	APHA 23 rd Edition 4500-Cl- / B	1.0 mg/L to 5000 mg/L
		Chlorine (Residual)as Cl	APHA 23 rd Edition 4500 - Cl / B	0.1 mg/L to 10 mg/L
		Fluoride as F	APHA 23 rd Edition 4500- F /B, D	0.1 mg/L to 10 mg/L
		Boron as B	APHA 23 rd Edition 4500 - B / B	0.1 mg/L to 10 mg/L
		Ammoniacal -Nitrogen as NH ₃ -N	IS:3025	2.0 mg/L to 500 mg/L
		Total Kjeldahal Nitrogen as N	APHA 23 rd Edition 4500-Norg A,B& 4500 NH ₃ -B	2.0 mg/L to 500 mg/L
		Free Ammonia as NH ₃	IS:3025 (Part 34) (Nesslerisation method)	0.5 mg/L to 20 mg/L
		Total Silica as SiO ₂	APHA 23 rd Edition 4500-SiO ₂ / C	1.0 mg/L to 100 mg/L
		Oil & Grease	IS:3025 (Part 39) (Partition gravimetric method)	5.0 mg/L to 200 mg/L
		Dissolved Oxygen	IS:3025 (Part 38)	0.1 mg/L to 10 mg/L

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		Bio-chemical oxygen demand (3 days at 27°C)	IS:3025 (Part 44)	2.0 mg/L to 5000 mg/L
		Chemical Oxygen Demand(COD)	APHA 23 rd Edition 5220-B	10 mg/L to 5000 mg/L
		Percent Sodium	IS:3025 (Part 45) (Flame Photometry method) / APHA 23 rd Edition 3500-Ca – B / APHA 23 rd Edition 3500 - Mg –B, (By Calculation)	1.0 % to 50 %
		Residual sodium carbonate	IS 11624	0.1 meq/L to 100 meq/L
III.	ATMOSPHERIC POLLUTION			
1.	Ambient air	Respirable Suspended Particulate matter (PM10)	IS:5182(Part 23)	10 µg/m ³ to 500 µg/m ³
		Sulphur dioxide as SO ₂	IS:5182(Part 2)	4.0 µg/m ³ to 200 µg/m ³
		Oxides of Nitrogen as NOx	IS:5182 (Part 6)	6.0 µg/m ³ to 200 µg/m ³
		Carbon monoxide	IS:5182 (Part 10) (Indicator Tube method)	2.0 mg/m ³ to 100 mg/m ³
		Lead as Pb	IS:5182(Part 22) (Dithizone method)	0.1 µg/m ³ to 50 µg/m ³
2.	Stack emission	Stack Temperature	IS:11255 (Part 3)	25°C to 600°C
		Stack Velocity	IS:11255 (Part 3)	2 m/sec to 50 m/sec
		Particulate matter (PM)	IS:11255 (Part 1)	10 mg/Nm ³ to 2000 mg/Nm ³
		Sulphur dioxide as SO ₂	IS:11255 (Part 2) 1985 Reaffirmed 2014	1.0 mg/Nm ³ to 200 mg/Nm ³
		Volume of flue gas discharge	IS:11255 (Part 3)	100 Nm ³ /hr to 10000 Nm ³ /hr
		Oxygen(O ₂)	IS:13270	0.2 % to 21 %
		Carbon dioxide (CO ₂),	IS:13270	0.2 % to 16%

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		Carbon monoxide (CO)	IS:13270	0.2 % to 5 %
		Oxides of Nitrogen as NOx	IS:11255 (Part 7)	1.0 mg/Nm ³ to 200 mg/Nm ³

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