

Laboratory **Unistar Environment and Research Labs Pvt Ltd. (Laboratory Division-Dahej), Plot No. D-II, E-177 & 178, Dahej-II Industrial Estate, GIDC Dahej, Dist.-Bharuch, Gujarat**

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

Certificate Number **TC-7652**

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Validity **06.08.2018 to 05.08.2020**

Last Amended on --

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	Particulate matter as PM ₁₀	IS 5182 (Part 23)	10 µg/m ³ to 1000 µg/m ³
		Particulate matter as PM _{2.5}	UERL-D/AIR/SOP/002, Issue No.01 & date.01.06.2017	10 µg/m ³ to 500 µg/m ³
		Sulphur Dioxide	IS 5182 (Part 2) Colorimetric Method	5 µg/m ³ to 1050 µg/m ³
		Oxide of Nitrogen	IS 5182 (Part 6) Colorimetric Method	5 µg/m ³ to 750 µg/m ³
		Ammonia	UERL-D/AIR/SOP/005 Issue No.01 & date.01.06.2017	5 µg/m ³ to 500 µg/m ³
		Ozone	IS 5182 (Part 09)	0.01 µg/m ³ to 5000 µg/m ³
		Hydrogen Fluoride	IS 5182 (Part 13) Zirconium-Spand method	5 µg/m ³ to 500 µg/m ³
		Chlorine	IS 5182 (Part 19) Methyl Orange method	5 µg/m ³ to 100 µg/m ³
		Carbon Disulphide	IS 5182 (Part 20)	5 µg/m ³ to 500 µg/m ³
		Hydrogen Sulphide	IS 5182 (Part 7)	5 µg/m ³ to 600 µg/m ³
2.	Stack Emission	Particulate matter	IS 11255 (Part 1)	1.0 mg/Nm ³ to 5000 mg/Nm ³
		Sulphur Dioxide	IS 11255 (Part 2) Titration Method Flue gas analyzer	4 mg/Nm ³ to 5000 mg/Nm ³ Upto 5000 mg/L
		Oxide of Nitrogen	IS 11255 (Part 7) Amd:1, Colorimetric Method Flue gas analyzer	5 mg/Nm ³ to 4000 mg/Nm ³ Upto 5000 mg/L

**Amit Kumar
Convenor**

**Anuja Anand
Program Manager**

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		Ammonia	IS 11255 (Part 6) Nessler Reagent Method	5 mg/Nm ³ to 300 mg/Nm ³
		Chlorine	UERL-D/AIR/SOP/016 Issue No.01 & date.01.06.2017	5 mg/Nm ³ to 500 mg/Nm ³
		Carbon Disulphide	IS 11255 (Part 4) Titration Method	5 mg/Nm ³ to 100 mg/Nm ³
		Hydro carbon	IS 13270 Flue gas analyzer	10 mg/L to 21000 mg/L
		Hydrogen Sulphide	IS 11255 (Part 4) Titration Method	5 mg/Nm ³ to 100 mg/Nm ³
II.	WATER			
1.	Drinking Water	pH	APHA, 23 rd Ed, 4500-H+ B. Electrometric Method, IS 3025 (Part 11) By pH Meter	2 to 12
		Turbidity	IS 3025(Part 10) Nephelometer Method	1 NTU to 100 NTU
		Total dissolved solids	APHA, 23 rd Ed, 2540 C., IS 3025(Part 16): Amnd.1 Filtration/Gravimetric Method	5 mg/L to 25000 mg/L
		Total Alkalinity	IS 3025(Part 23), Amnd. 2 Titration Method	5 mg/L to 500 mg/L
		Total Hardness	APHA, 23 rd Ed, 2340, C. EDTA Titrimetric method, IS 3025 (Part 21) By Titrimetric Method	2 mg/L to 1500 mg/L
		Calcium or Calcium Hardness as CaCO ₃	APHA, 23 rd Ed, 3500 Ca-B. EDTA Titrimetric Method	1 mg/L to 1000 mg/L

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		Magnesium as Mg	APHA, 23 rd Ed, 3500-Mg, B. Calculation Method	5 mg/L to 500 mg/L
		Chloride	APHA, 23 rd Ed, 4500-Cl ⁻ , B. Argentometric Method, IS 3025(Part 32)	1 mg/L to 100 mg/L
		Free Residual chlorine	APHA, 23 rd Ed, 4500-Cl-B. Iodometric Method, IS 3025 (Part 26), Amnd.1, Iodometric Method	0.2 mg/L to 10 mg/L
		Nitrite (as NO ₂)	APHA, 23 rd Ed, 4500-NO ₂ ⁻ B. Colorimetric Method,	0.005 mg/L to 10 mg/L
		Nitrate (as NO ₃)	APHA, 23 rd Ed, 4500-NO ₃ ⁻ B. Ultraviolet spectrophotometric Screening method	0.1 mg/L to 10 mg/L
		Fluoride	APHA, 23 rd Ed, 4500-F ⁻ D. SPAND Method	0.05 mg/L to 10 mg/L
		Sulphate	IS 3025(Part 24) Turbidity Method	1 mg/L to 1000 mg/L
		Sulphide	APHA, 23 rd Ed, 4500-S ²⁻ F. Iodometric Method	0.05 mg/L to 10 mg/L
		Ammonia	IS 3025 (part 34) By Titrimetric Method, APHA, 23 rd Ed, 4500-NH ₃ B. Preliminary Distillation Step, C. Titrimetric Method	0.5 mg/L to 100 mg/L

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2.	Potable and domestic water Ground water Surface water (Rivers, lakes)	pH	APHA, 23 rd Ed, 4500-H+ B. Electrometric Method, IS 3025 (Part 11) By pH Meter	2 to 12
		Turbidity	IS 3025(Part 10) Nephelometer Method	0.1 NTU to 200 NTU
		Electrical Conductivity	IS 3025 (Part 14) By Conductivity Meter	1 μ S/cm to 20000 μ S/cm
		Total Solids	APHA 23 rd Ed., 2540, B. IS 3025 (Part 15) Amnd.1, Gravimetric Method	5 mg/L to 1000 mg/L
		Total dissolved solids	APHA, 23 rd Ed., 2540 C., IS 3025(Part 16) Amnd.1 Filtration/Gravimetric Method	5 mg/L to 1000 mg/L
		Total Suspended Solids	APHA, 23 rd Ed., 2540-D., IS 3025(Part 17) Amnd.1 Filtration/Gravimetric Method	5 mg/L to 1000 mg/L
		Total Alkalinity	IS 3025(Part 23) Amnd. 2 Titration Method	5 mg/L to 500 mg/L
		Total Hardness	APHA, 23 rd Ed, 2340, C. EDTA Titrimetric method, IS 3025 (Part 21) By Titrimetric Method	2 mg/L to 500 mg/L
		Calcium or Calcium Hardness as CaCO ₃	APHA, 23 rd Ed, 3500 Ca-B. EDTA Titrimetric Method	5 mg/L to 500 mg/L
		Magnesium as Mg	APHA, 23 rd Ed., 3500-Mg, B. Calculation Method	1 mg/L to 500 mg/L

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		Chloride	APHA, 23 rd Ed, 4500-Cl ⁻ , B. Argentometric Method, IS 3025 (Part 32)	1 mg/L to 1000 mg/L
		Free Residual chlorine	APHA, 23 rd Ed, 4500-Cl-B. Iodometric Method I, IS 3025 (Part 26) Amnd.1 Iodometric Method	0.2 mg/L to 10 mg/L
		Nitrite (as NO ₂)	APHA, 23 rd Ed, 4500-NO ₂ ⁻ B. Colorimetric Method	0.01 mg/L to 100 mg/L
		Nitrate (as NO ₃)	APHA, 23 rd Ed, 4500-NO ₃ ⁻ B. Ultraviolet spectrophotometric Screening method	0.1 mg/L to 100 mg/L
		Fluoride	APHA, 23 rd Ed, 4500-F ⁻ D. SPAND Method	1 mg/L to 10 mg/L
		Sulphate	IS 3025(Part 24) Turbidity Method	1 mg/L to 1000 mg/L
		Sulphide	APHA, 23 rd Ed, 4500-S ²⁻ F. Iodometric Method	1 mg/L to 10 mg/L
		Acidity	IS 3025 (Part 22) Indicator and Titration Method APHA, 23 rd Ed, B. Titrimetric Method	5 mg/L to 500 mg/L
		Total Kjeldahl Nitrogen (TKN)	APHA, 23 rd Ed., 4500-Norg B. Macro-Kjeldahl	5 mg/L to 100 mg/L

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			Method 4500-NH3 B. Preliminary Distillation Step, C. Titrimetric Method	
		Chemical Oxygen Demand	IS 3025(Part 58) APHA, 23 rd Ed, 5220-B. Open Reflux Method	5 mg/L to 1000 mg/L
		Chromium (Hexavalent)	APHA, 23 rd Ed, 3500-Cr,B. Colorimetric Method	1 mg/L to 10 mg/L
		Dissolved Oxygen	APHA, 23 rd Ed., 4500-Oxygen (Dissolved), B, IS 3025 (Part 38) By Iodometric Method	0.5 mg/L to 8 mg/L
		Oil & Grease	IS 3025 (Part 39) Amnd. 2 Liquid-liquid, Partition-Gravimetric Method	4 mg/L to 100 mg/L
		Phosphate	APHA, 23 rd Ed, 4500-P,D. Stannous Chloride Method	0.1 mg/L to 10 mg/L
		Silica	APHA, 23 rd Ed, 4500-SiO2,D. Hetero Poly Blue Method, IS 3025(Part 35)	0.1 mg/L to 50 mg/L
		Phenol	APHA, 23 rd Ed,5530-D. Direct Photometric Method	0.01 mg/L to 5 mg/L
		Ammonical Nitrogen	APHA, 23 rd Ed, 4500-NH3 B. Preliminary Distillation Step, C. Titrimetric Method, IS 3025 (part 34) By Titrimetric Method	5 mg/L to 100 mg/L

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		Carbonate	IS 3025(Part 51) By Calculation Method	5 mg/L to 500 mg/L
		Bicarbonate	IS 3025(Part 51) By Calculation Method	5 mg/L to 500 mg/L
III.	POLLUTION & ENVIRONMENT			
1.	Waste Water (Effluents/ Sewage)	pH	APHA, 23 rd Ed, 4500-H+ B. Electrometric Method, IS 3025 (Part 11) By pH Meter	2 to 12
		Total Solids	APHA 23 rd Ed., 2540, B., IS 3025 (Part 15), Amnd.1 Gravimetric Method	5 mg/L to 25000 mg/L
		Total dissolved solids	APHA, 23 rd Ed., 2540 C., IS 3025 (Part 16) Amnd.1, Filtration/Gravimetric Method	5 mg/L to 25000 mg/L
		Total Suspended Solid	APHA, 23 rd Ed, 2540-D., IS 3025 (Part 17) Amnd.1 Filtration/Gravimetric Method	5 mg/L to 1000 mg/L
		Chloride	APHA, 23 rd Ed., 4500-Cl ⁻ , Argentometric Method, IS 3025 (Part 32)	1 mg/L to 10000 mg/L
		Calcium or Calcium Hardness as CaCO ₃	APHA, 23 rd Ed., 3500 Ca-B. EDTA Titrimetric Method	1 mg/L to 500 mg/L
		Magnesium as Mg	APHA, 23 rd Ed, 3500-Mg, B. Calculation	1 mg/L to 500 mg/L

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		Nitrite (as NO ₂)	APHA, 23 rd Ed, 4500-NO ₂ ⁻ B, Colorimetric Method	0.005 mg/L to 1000 mg/L
		Nitrate (as NO ₃)	APHA, 23 rd Ed, 4500-NO ₃ ⁻ B. Ultraviolet spectrophotometric Screening method	0.1 mg/L to 5000 mg/L
		Fluoride	APHA, 23 rd Ed, 4500-F ⁻ D. SPAND, Method	0.1 mg/L to 10 mg/L
		Sulphate	IS 3025(Part 24) Turbidity Method	1.0 mg/L to 1000 mg/L
		Chromium (Hexavalent)	APHA, 23 rd Ed, 3500-Cr, B. Colorimetric Method	0.1 mg/L to 10 mg/L
		Phosphate	APHA, 23 rd Ed, 4500-P, D. Stannous Chloride Method	0.1 mg/L to 10 mg/L
		Phenol	APHA, 23 rd Ed., 5530-D. Direct Photometric Method	0.1 mg/L to 10 mg/L
		Dissolved Oxygen	APHA, 23 rd Ed., 4500-Oxygen (Dissolved), B IS 3025 (Part 38) By Iodometric Method	0.5 mg/L to 8 mg/L
		Chemical Oxygen Demand	IS 3025(Part 58) APHA, 23 rd Ed., 5220-B. Open Reflux Method	5 mg/L to 20000 mg/L
		Sulphide	APHA, 23 rd Ed., 4500-S ²⁻ F. Iodometric Method	1 mg/L to 10 mg/L

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		Oil & Grease	IS 3025 (Part 39) Amdn.2 Liquid-liquid, Partition-Gravimetric Method	4 mg/L to 100 mg/L
		Ammonical Nitrogen (NH ₃ -N)	APHA, 23 rd Ed., 4500-NH ₃ .Preliminary Distillation Step, C. Titrimetric Method, IS 3025 (Part 34), By Titrimetric Method	5 mg/L to 100 mg/L
		Total Kjeldahl Nitrogen(TKN)	APHA, 23 rd Ed., 4500-Norg B. Macro-Kjeldahl Method 4500-NH ₃ B. Preliminary Distillation Step, C. Titrimetric Method	5 mg/L to 100 mg/L
		Free Residual chlorine	APHA, 23 rd Ed., 4500-Cl-B. Iodometric Method I, IS 3025 (Part 26) Amnd.1 Iodometric Method	0.2 mg/L to 10 mg/L

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CHEMICAL TESTING

AT SITE				
I.	ATMOSPHERIC POLLUTION			
1.	Noise	Source Noise Monitoring	IS 4758 CPCB Protocol for Ambient level Noise monitoring, July 2015	34 dB to 134 dB
		Ambient Noise Monitoring	IS 9989 CPCB Protocol for Ambient level Noise monitoring, July 2015	34 dB to 134 dB

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