

Laboratory

Amulya Associates, #9, Amulya, 5th Main Road, Girinagar, BSK 3rd Stage, Bangalore, Karnataka

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7049

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Validity 16.03.2018 to 15.03.2020

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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.	Drinking Water/ ground Water/Well Water/ Industrial Water	Colour	IS: 3025 (Part-4) : Spectrometer method APHA -2120 C	2 Hazen units to 500 Hazen units
		Odour	IS: 3025 (Part-5) :	Qualitative Agreeable/not Agreeable
		Turbidity, NTU	IS: 3025 (Part-10) : APHA 2130-B	0.1 NTU to 500 NTU
		pH Value	IS: 3025 (P-11) : APHA 4500H,D	3 to 12
		Conductivity	IS: 3025 (Part-16) : APHA 2510-B	1.0 µS/cm to 3000 µS/cm
		Total Dissolved Solids	IS: 3025 (Part-16) -Gravimetric method: APHA 2540 B,C	2 mg/l to 3000 mg/l
		Phosphates as P	IS: 3025 (Part-31) : APHA 4500 P-D	0.1 mg/l to 20 mg/l
		Calcium (as Ca)	IS: 3025 (Part-40) – EDTA Titrimetric Method APHA 3500 Ca B	4.0 mg/l to 500 mg/l
		Chloride (as Cl)	IS: 3025 (Part- 2) : Argentometric Method : APHA 4500 Cl-B	2 mg/l to 1000 mg/l
		Fluoride (as F)	IS: 3025 (Part-60): SPADNS Method	0.1 mg/l to 5.0 mg/l

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		Free Residual Chlorine as Cl <sub>2</sub>	APHA 4500 F B, D IS: 3025 (Part-26) : Iodometric Method : APHA 4500 Cl,B	1 mg/l to 5 mg/l
		Iron (as Fe)	IS: 3025 (Part-53) 1,10 Phenantroline method and AAS method: APHA 3111A, 3500-Fe-B	0.1 mg/l to 10 mg/l
		Magnesium (as Mg)	IS: 3025 (Part-46) EDTA APHA 3111 A, 3500Mg A,B	0.10 mg/l to 150 mg/l
		Nitrate Nitrogen (as NO <sub>3</sub> )	IS: 3025 (Part-34) Chromotropic acid method APHA -4500 NO3 B	1 mg/l to 200 mg/l
		Sulphate (as SO <sub>4</sub> )	IS: 3025 (Part-24) Gravimetric method APHA -4500 SO4 C,D,E Turbidity method	1 mg/l to 200 mg/l
		Sulphide (as H <sub>2</sub> S)	IS: 3025 (Part-29 ) Spectrometric method APHA -4500.F	1 mg/l to 50.00 mg/l
		Total Alkalinity (as CaCO <sub>3</sub> )	IS: 3025 (Part-23) Indicator method	2 mg/l to 1000 mg/l
		Total Hardness (as CaCO <sub>3</sub> )	APHA - 2320B IS: 3025 (Par-21) EDTA Method	2 mg/l to 1000 mg/l
		Ammonia as Total Ammonia –NH <sub>3</sub>	IS: 3025 (Part-34) Ammonical Nitrogen method APHA -4500 NH <sub>3</sub> A	0.1 mg/l to 30.0 mg/l
		Mineral Oil	IS: 3025 (Part-39)	1 mg/l to 10.0 mg/l

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			Partition Gravimetric method	
		Copper (as Cu)	IS: 3025 (P-42) - cl 6 AAS direct method	0.2 mg/l to 5.0 mg/l
		Nickel (as Ni)	IS: 3025 (P-54) cl.7-AAS direct methods	0.2 mg/l to 5.0mg/l
		Zinc (as Zn)	IS: 3025 (P-49 ) cl.6 AAS method-direct	0.2 mg/l to 25.0 mg/l
		Lead ( as Pb)	IS: 3025 (P-47) -cl.7 AAS-Direct Method	0.2 mg/l to 5.0 mg/l
		Cadmium (as Cd)	IS: 3025 (P-41) AAS-Direct method-6	0.2 mg/l to 5.0 mg/l
		Total suspended solids	IS: 3025 (P-17): Gravimetric method APHA method -2540D Gravimetric method	2 mg/l to 500 mg/l
		Total Chromium (as Cr)	IS: 3025 (P-52) AAS Direct Method	0.2 mg/l to 5.0 mg/l
		Hexavalent Chromium (as Cr <sup>+6</sup> )	IS 3025 (P-52) Spectrometric method using diphenyl carbazide	0.01 mg/l to 5.0 mg/l
		Silica as (SiO <sub>2</sub> )	IS 3025 (Part 35) colorimetric method APHA4500.C. Molybdosilicate method	0.1 mg/l to 200.0 mg/l
		Boron (as B)	IS: 3025 (P-57) Colorimetric method: APHA -4500B- Curucumin method	0.1 mg/l to 5.00 mg/l
		Silver (as Ag)	Annex J of IS 13428: Direct AAS Method	0.1 mg to 5.0 mg

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II.	<b>POLLUTION &amp; ENVIRONMENT</b>			
1.	Effluent water/Waste water/Sewage water	Color, Hazen units,	IS: 3025 (P-4) Spectrophotometer method:APHA 2120C	2 HU to 500 HU
		Turbidity	IS: 3025 (P-11) APHA 2130B	4 NTU to 1000 NTU
		pH Value	IS: 3025 (P-11) APHA 4500 H,D	1 to 14
		Chlorides as Cl	IS: 3025 (P-32) Argentometric Method APHA 4500 Cl-B	2 mg/l to 2000 mg/l
		Residual Free Chlorine as Cl <sub>2</sub>	IS: 3025 (P-26) APHA 4500Cl.B	0.1 mg/l to 10 mg/l
		Total Dissolved Solids	IS: 3025 (P-16) Gravimetric method APHA 2540 B,C	2 mg to 5000 mg/l
		Sulphates as SO <sub>4</sub>	IS: 3025 (P-24) Turbidity method, APHA - 4500SO <sub>4</sub> C,D,E	1.0 mg/l to 1000 mg/l
		Chemical Oxygen Demand	IS: 3025 (P-58) APHA .-5220B	4 mg/l to 2000 mg/ l
		Biochemical Oxygen Demand (3 days27°C)	IS: 3025 (P-44) APHA .-5210B	2 mg/l to 2000 mg/l
		Nitrates as NO <sub>3</sub>	IS: 3025 (P-34) Chromotropic acid method APHA 4500 NO <sub>3</sub> B	1.0 mg/l to 250 mg/l
Ammonical Nitrogen As NH <sub>3</sub> -N	IS: 3025 (P-34) Ammonical nitrogen method	0.5 mg/l to 150 mg/l		

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		Total Kjeldal Nitrogen as N	APHA 4500NH3 A IS: 3025 (P-34) Kjeldal nitrogen method	0.5 mg/l to 150 mg/l
		Conductivity	APHA-4500N <sub>org</sub> B IS: 3025 (P-16)	1.0 µS /cm to 5000 µS /cm
		Oil and Grease	APHA .- 2510B IS: 3025 (P-39) Partition Gravimetric method	1.0 mg/l to 2000 mg/l
		Phosphates as P	IS 3025 (Part-31) Stannous chloride method	0.01 mg/l to 40 mg/l
		Copper (as Cu)	APHA .-4500P-D IS: 3025 (P-42) - cl.6 AAS direct method	0.2 mg/l to 5.0 mg/l
		Nickel (as Ni)	IS: 3025 (P-54) - cl.7AAS direct methods	0.2 mg/l to 5.0 mg/l
		Zinc (as Zn)	IS: 3025 (P-49 ) -cl.6 AAS method-direct	0.2 mg/l to 5.0 mg/l
		Lead ( as Pb)	IS: 3025 (P-47 ) cl-7 AAS-Direct Method	0.2 mg/l to 5.0 mg/l
		Cadmium (as Cd)	IS: 3025 (P-41) AAS-Direct method-6	0.2 mg/l to 5.0 mg/l
		Total Chromium (as Cr)	IS: 3025 (P-52) AAS Direct Method	0.2 mg/l to 5.0 mg/l
		Hexavalent Chromium (as Cr <sup>+6</sup> )	IS 3025 P-52 Spectrometric method using diphenyl carbazide	0.01 mg/l to 5.0 mg/l
		Silica as (SiO <sub>2</sub> )	APHA method 4500.C. Molybdosilicate method	0.1 mg/l to 200.0 mg/l

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		Boron (as B)	IS: 3025 (P-57) -Colorimetric method: APHA-4500B- Curcumin method	0.4 mg/l to 3.0 mg/l
		Silver (as Ag)	Annex J of IS 13428: Direct AAS Method IS: 3025 (P-43)	0.1 mg/l to 5.0 mg/l
		Total suspended solids	IS: 3025 (P-17) Gravimetric method APHA -2540D	2 mg/l to 500 mg/l
		Sodium as Na	IS 3025(P-45) APHA - 3500 Na B. Flame Photometric Method	1 mg/l to 100 mg/l
		Potassium as K	IS 3025(P-45) APHA 3500K B. Flame Photometric Method	1 mg/l to 100 mg/l
<b>III.</b>	<b>AIR GASES &amp; ATMOSPHERE AIR</b>			
<b>1.</b>	<b>Ambient Air</b>	Particulate Matter (size less than 10 µm) or (PM 10)	IS 5182 (Part-23)	5.0 µg/M <sup>3</sup> to 500 µg /M <sup>3</sup>
		Particulate Matter (size less than 2.5 µm) or (PM 2.5)	AML/SOP/36 Dated 12.01.2014 Version 1	5.0 µg/M <sup>3</sup> to 500 µg /M <sup>3</sup>
		Sulphur Dioxide as SO <sub>2</sub>	IS 5182 (Part-2)	4.0 µg/M <sup>3</sup> to 500 µg /M <sup>3</sup>
		Nitrogen Dioxide as NO <sub>2</sub>	IS: 5182 (Part-6)	9.0 µg/M <sup>3</sup> to 200 µg /M <sup>3</sup>
		Lead as Pb	IS 5182 (Part-22): (AAS Method)	3 µg /M <sup>3</sup> to 500 µg /M <sup>3</sup>

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		Ammonia- NH <sub>3</sub>	AML/SOP/37 Dated 4/12/2017 version 1 : Indophenol Blue method	20 µg /M <sup>3</sup> to 350 µg /M <sup>3</sup>
		Ozone – O <sub>3</sub>	IS 5182 (Part 9)	0.1 µg /M <sup>3</sup> to 15.0 µg /M <sup>3</sup>
2.	Stack Emission	Flow Rate	IS 11255 (Part-3)	1.0 m /s to 50 m /s
		Particulate Matter (PM)	IS 11255 (Part-1)	5.0 mg to 1000 mg / NM <sup>3</sup>
		Sulphur Dioxide as SO <sub>2</sub>	IS 11255 (Part-2)	1.0 mg/NM <sup>3</sup> to 500 mg/NM <sup>3</sup>
		Nitrogen dioxide as– NO <sub>2</sub>	IS 11255 (Part-7)	1.0 mg/NM <sup>3</sup> to 500 mg/NM <sup>3</sup>
		Acid mist	AML/SOP/SOP38 Dated 10/12/2017 version 1 : based on CPCB Guidelines	0.5 mg/NM <sup>3</sup> to 50 mg/NM <sup>3</sup>
		Carbon Monoxide as CO	AML/SOP/SOP39 Dated 10/12/2017 version 1: Flue gas analyzer	1.0 ppm to 1000 ppm
3.	Noise Level	Sound Pressure Level	IS 9989	40.0 to 120.0 dB(A)
4.	Illumination	Illumination	IS 3646 (Part-1)	10.0 to 10000 Lux/Fc

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