

Laboratory	Italab (Goa) Pvt. Ltd., Italab House, Apollo Victor Hospital Road, Malbhat, Margao, Goa		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.11.2014
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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. AIR GASES & ATMOSPHERE				
1. Ambient Air Quality/ Work Environment Monitoring		Sulphur Dioxide	IS 5182 (Part 2): 2001 (RA 2006)	0.1 µg/M ³ to 1050 µg/M ³
		Suspended Particulate Matter	IS 5182 (Part 4): 1999 (RA 2005)	5µg/M ³ to 2500 µg/M ³
		Respirable Particulate Matter/ PM 10	IS 5182 (Part 23): 2006	5µg/M ³ to 1000 µg/M ³
		Nitrogen Oxides	IS 5182 : Part 6 : 2006	0.10 µg/M ³ to 750 µg/M ³
		Ammonia	ITG/SOP/AA/005 (Indophenol Blue Method)	0.5µg/M ³ to 2500 µg/M ³
2. Noise Level Monitoring		Noise Level	IS 9989-1981(RA 2001)	35 dB(A) to 130 dB(A)
3. Stack / Stationary Source Monitoring		Particulate matter	IS 11255 (Part 1):1985 (RA 2003)	2 mg/m ³ to 1000 mg/m ³
		Sulphur dioxide	IS 11255 (Part 2): 1985 (RA 2003)	5 mg/M3 to 2000 mg/NM3
		Velocity	IS 11255 : Part 3 : 2008	1 m/sec to 60m/sec
		Temperature	IS 11255 : Part 3 : 2008	Max 500 °C
		Moisture	IS 11255 : Part 3 : 2008	1 % to 20 %
		Ammonia	IS 11255 : Part 6 : 1999	10mg/M3 to 100 mg/NM3
		Nitrogen Oxides	IS 11255 : Part 7 : 2005	10 mg/M3 to 13000 mg/M3
		Carbon Dioxide	IS 13720: 1992 (RA 2009)	0 % to 20 %
		Oxygen	IS 13720: 1992 (RA 2009)	0 % to 20 %

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II. BUILDING MATERIALS				
1.	Cement & other Mortars (Hydraulic/ Ordinary Portland cement)- OPC/PPC/ PSC	Loss on Ignition	IS 4032: 1985 (RA 2005)	0.1 % to 10.0%
		SiO ₂	IS 4032: 1985(RA 2005)	10.0 % to 30.0%
		Al ₂ O ₃	IS 4032: 1985 (RA 2005)	1.0 % to 20.0%
		Fe ₂ O ₃	IS 4032: 1985(RA 2005)	0.1 % to 10.0%
		CaO	IS 4032: 1985(RA 2005)	40.0 % to 70.0%
		MgO	IS 4032: 1985(RA 2005)	0.10 % to 10.0%
		SO ₃	IS 4032: 1985(RA 2005)	0.10 % to 10.0%
		Insoluble Residue	IS 4032: 1985(RA 2005)	0.10 % to 25.0%
2.	Hydrated Lime	Available lime as CaO	IS 1514: 1990 (RA 2010)	30.0 % to 70.0%
		Calcium Hydroxide as Ca (OH) ₂	IS 1514: 1990(RA 2010)	39 % to 100%
3.	Gypsum	Lime	IS 1288: 1982 (RA 1999)	10.0 % to 45%
		SO ₃	IS 1288-1982 (RA 1999)	10.0 % to 60.0%
		Purity (By calculation as SO ₃ basis)	IS 1288-1982 (RA 1999)	40.0 % to 100 %
		Insoluble residue	IS 1288-1982 (RA 1999)	0.5 % to 25 %

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4.	Soil/ Clays	pH	IS 2720 (Part 26): 1987	1 to 14
		Total Soluble Solids	IS 2720 (Part 21): 1977 (RA 2001)	0.05 % to 50 %
		Total Soluble Sulphates	IS 2720 (Part 27): 1977 (RA 2001)	0.004 % to 20 %
		Chlorides	Indian Bureau of Mines method (Argentometric Method) June 2014 Pg 219	0.0007 % to 5 %
		Nitrogen	IS 14684: 1999	0.15 % to 10 %
		Water Holding Capacity	Indian Bureau of Mines method June 2014 Pg 245	1 % to 90 %
		Potassium	Indian Bureau of Mines method June 2014 Pg 187	0.001% to 20 %
III. FERTILIZERS				
1.	Manure/ Fertilizers	Nitrogen	IS 6092 (Part 2): 1985 (RA 2000)	0.05 % to 60 %
		Phosphorous	IS 6092 (Part 3): 1985 (RA 2010)	0.002 % to 50.0 %
		Potassium	IS 6092(Part 4): 1985 (RA 2001)	0.01% to 20.0 %
		pH	FCO Method-1985	1 to 14
		Moisture	FCO Method-1985	1% to 75%

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IV. FOOD & AGRICULTURAL PRODUCTS				
1.	Milk & Dairy Products	pH	IS 1479 (Part 2):1960 (RA 2009)	1 to 14
		Fat	IS 1479 (Part 2):1960 (RA 2009)	0.5 % to 8 %
		Total Solids	IS 1479 (Part 2): 1960 (RA 2009)	0.5 % to 50 %
2.	Fish & Fishery Products	Arsenic	Official method of Analysis of AOAC International – 19th edition, 2012	10 µg/kg to 100 µg/kg
		Mercury		2 µg/kg to 2000 µg/kg
		Cadmium		0.2 µg/kg to 2000 µg/kg
		Lead		1 µg/kg to 1000 µg/kg
		Formaldehyde	Distillation – Visual Colour Comparison	1 mg/kg to 10 mg/kg
		Histamine	DGHS – Manual for analysis of Meat & Fish Products	0.05 mg/kg to 200 mg/kg
3.	Alcoholic Drinks & Beverages (Whisky, Gin, Vodka & Rum Analysis)	Methanol	IS 3752: 2005	0.1 mg/l to 100 mg/l
		Ethyl Alcohol		1.0 % to 99.0%
		Total Ash		0.0001% to 20.0%
		Total Solids		0.001 % to 80.0 %
		Total Acidity		2.0 g to 1500g/100L
		Copper as Cu		0.3 mg/kg to 30 mg/kg
		Volatile acidity (As Acetic Acid)		1.00 g to 700g/100L
		Esters (As Ethyl Acetate)		4 g to 500g/100L
		Aldehyde (As Acetaldehyde)		0.5 g to 60g/100L
		Fixed Acidity		2.00 g to 500 g/100L

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V. POLLUTION & ENVIRONMENT

1.	Effluents / Hazardous Solid Waste	Nitrogen (Total Kjeldhal Nitrogen)	IS 3025 (Part 34): 1988 (RA 2009)	0.1 mg/L to 10 mg/L 10 mg/L to 50 mg/L 50 mg/L to 100 mg/L
		Oil and grease	APHA 22 nd Edition 2012 \ O & G-B	1 mg/L to 10 mg/L 10 mg/L to 100 mg/L
		Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 (RA 2009)	4.0 mg/L to 10mg/L 10 mg/L to 50 mg/L 50 mg/L to 100 mg/L 100 mg/L to 2000 mg/L
		Chemical Oxygen Demand (COD)	APHA- 22 nd Edition – B	4.0 mg/L to 10 mg/L 10 mg/L to 50 mg/L 50 mg/L to 100 mg/L 100 mg/L to 5000 mg/L
		pH value	IS 3025(Part 11) :1983 (RA 2012)	1 to 14
		Total residue (total solids-dissolved and suspended)	IS 3025 (Part 15): 1984 (RA 2009)	10 mg/L to 100 mg/L 100 mg/L to 500 mg/L 500 mg/L to 1000 mg/L >1000 mg/L
		Filterable residue (total dissolved solids)	IS 3025(Part 16) : 2006	10 mg/L to 100 mg/L 100 mg/L to 500 mg/L 500 mg/L to 1000 mg/L >1000 mg/L
		Non-filterable residue (total suspended solids)	IS 3025 (Part 17): 1984 (RA 2012)	10 mg/L to 100 mg/L 100 mg/L to 500 mg/L 500 mg/L to 1000 mg/L >1000 mg/L

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VI. WATER				
1.	Potable & Domestic Water/ Boiler Water/ Feed Water/ Condensate Water/ Water Used in Industry/ Construction Water/ Cooling Towers/ Swimming Pool Water/ Water Distilled / demineralized	Sulphates	IS 3025 (Part 24): 1986 (RA 2009)	0.1 mg/L to 10 mg/L 10 mg/L to 100 mg/L 100 mg/L to 500 mg/L
		Chlorine, residual	IS 3025(Part 26): 1986 (RA 2009)	0.1 mg/L to 10 mg/L 10 mg/L to 50 mg/L 50 mg/L to 100 mg/L
		Sulphite	IS 3025 : Part 28 : 1986 RA 2009	1 mg/L to 10 mg/L 10 mg/L to 100 mg/L
		Total & Dissolved phosphorus	IS 3025 (Part 31): 1988 (RA 2009)	0.003 mg /L to 5 mg/L 5 mg/L to 10 mg/L 10 mg/L to 50 mg/L
		Chloride	IS 3025(Part 32): 1988 (RA 2009)	3 mg/L to 250 mg/L 250 mg/L to 2500 mg/L 2500 mg/L to 25000 mg/L
		Nitrate	APHA 22 nd Edition 2012 4500-NO3-B	0.005 mg/L to 0.5 mg/L 0.5 mg/L to 10 mg/L 10 mg/L to 50 mg/L
		Nitrite Nitrogen	IS 3025 (Part 34): 1988 (RA 2009)	0.005 mg/L to 0.5 mg/L 0. 5 mg/L to 10 mg/L 10 mg/L to 50 mg/L
		Ammoniacal Nitrogen,	IS 3025 (Part 34): 1988(RA 2009)	0.1 mg/L to 10 mg/L 10 mg/L to 100 mg/L
		Total Kjeldhal Nitrogen	IS 3025 (Part 34): 1988 (RA 2009)	0.1 mg/L to 10 mg/L 10 mg/L to 100 mg/L
		Total & Reactive Silica	IS 3025 (Part 35): 1988 (RA 2009)	0.1 mg/L to 10 mg/L 10 mg/L to 100 mg/L

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	Potable & Domestic Water/ Boiler Water/ Feed Water/ Condensate Water/ Water Used in Industry/ Construction Water/ Cooling Towers/ Swimming Pool Water/ Water Distilled / demineralized	Dissolved oxygen	IS 3025 (Part 38): 1989 (RA 2009)	0.2 mg/L to 15 mg/L
		Oil and grease	APHA—22 nd Edition 2012 O & G-B	1.0 mg/L to 10 mg/L 10 mg/L to 100 mg/L
		Calcium	IS 3025 (Part 40): 1991 (RA 2009)	0.5 mg/L to 10mg/L 10 mg/L to 100 mg/L 100 mg/L to 1000 mg/L
		Nickel	IS 3025 (Part 54): 2003	0.1 mg/l to 10 mg/l
		Copper	IS 3025 (Part 42): 1992 (RA 2009)	0.05 mg/L to 1mg/L 1 mg/L to 5 mg/L
		Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 (RA 2009)	4mg/L to 200 mg/L
		Sodium	IS 3025 (Part 45) : 1993 (RA 2009)	1 mg/L to 10 mg/L 10 mg/L to 100 mg/L
		Potassium	IS 3025 (Part 45): 1993 (RA 2009)	1 mg/L to 10 mg/L 10 mg/L to 100 mg/L
		Magnesium	IS 3025 (Part 46): 1994 (RA 2009)	0.3 mg/L to 10 mg/L 10 mg/L to 100 mg/L 100 mg/L to 1000 mg/L
		Carbonate	IS 3025 (Part 51) : 2001	0. 1mg/L to 10mg/L 10 mg/L to 100 mg/L 100 mg/L to 1000 mg/L
		Bicarbonate	IS 3025 (Part 51) : 2001	0. 1mg/L to 10mg/L 10 mg/L to 100 mg/L 100 mg/L to 1000 mg/L

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	Potable & Domestic Water/ Boiler Water/ Feed Water/ Condensate Water/ Water Used in Industry/ Construction Water/ Cooling Towers/ Swimming Pool Water/ Water Distilled / demineralized	Chemical Oxygen Demand (COD)	APHA 22 nd Edition, 2012	4 mg/L to 100 mg/L 100 mg/L to 500 mg/L
		Oxygen Absorbed in 4 Hours	IS 3025(Part 63) : 2007	0.03 mg/L to 5 mg/L 5 mg/L to 50 mg/L
		Colour	IS 3025 (Part 4): 1983 (RA 2006)	5 Hazen Units to 75 Hazen Units
		Odour	IS 3025 (Part 5) : 1983 (RA 2006)	Qualitative
		Temperature	IS 3025 (Part 9) : 1984(RA 2006)	Min 1 to 100 °C
		Turbidity	IS 3025 (Part 10) : 1984 (RA 2006)	0.1 NTU to 10 NTU 10 NTU to 100 NTU 100 NTU to 1000 NTU
		pH value	IS 3025 (Part 11) : 1983 (RA 2006)	1 to 14
		Specific conductance	IS 3025 (Part 14) : 1984 (RA 2006)	0.1 µs/cm to 10 µs/cm 10 µs/cm to 1000 µs/cm 1000 µs/cm to 40000 µs/cm
		Total residue (total solids-dissolved and suspended)	IS 3025 (Part 15): 1984 (RA 2009)	10 mg/L to 100 mg/L 100 mg/L to 10000 mg/L

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	Potable & Domestic Water/ Boiler Water/ Feed Water/ Condensate Water/ Water Used in Industry/ Construction Water/ Cooling Towers/ Swimming Pool Water/ Water Distilled / demineralized	Filterable residue (total dissolved solids)	IS 3025 (Part 16): 1984 (RA 2006)	10 mg/L to 100mg/L 100 mg/L to 10000mg/L
		Non-filterable residue (total suspended solids)	IS 3025 (Part 17): 1984 (RA 2006)	5 mg/L to 10mg/L 10 mg/L to 100mg/L 100 mg/L to 1000 mg/L
		Volatile and fixed residue (total filterable and non-filterable)	IS 3025 (Part 18): 1984 (RA 2006)	10 mg/L to 100mg/L 100 mg/L to 1000 mg/L
		Settleable Matter	IS 3025(Part 19) : 1984 (RA 1996)	0.1 mg/l to 40mg/l
		Total hardness	IS 3025 (Part 21): 1983 (RA 2006)	10 mg/L to 100mg/L 100 mg/L to 1000mg/L 1000 mg/L to 10000mg/L
		Total Alkalinity	IS 3025 (Part 23) : 1986 (RA 2009)	1.0 mg/L to 50g/L 50 mg/L to 500 mg/L
		Acidity	IS 3025 (Part 22): 1986 (RA 2009)	1.0 mg/L to 50mg/L 50 mg/L to 500 mg/L
		Total & Dissolved Iron	IS 3025 (Part 53): 2003	0.05 mg /L to 5.0 mg/L
		Aluminium	IS 3025 (Part 55): 2003 (RA 2009)	0.02 mg /L to 3.0 mg/L
		Manganese	APHA22 nd Edition 2012- Mn	0.02 mg/L to 2mg/L 2mg/L to 20 mg/L
		Total & Hexavalent Chromium	IS 3025 (Part 52): 2003	0.03mg /L to 2mg/L 2 mg/L to 20 mg/L
		Free Carbon Dioxide	IS 3025 (Part 61): 2008	1 mg/L to 10 mg/L 10 mg/L to 50 mg/L
		Fluorides	APHA; 21 ST Edition 4500-F B, D	0.1 mg/L to 1.4 mg/L
		Phenols	IS 3025 (part 43):1992 (RA 2009)	0.1mg/L to 10 mg/L

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	Potable & Domestic Water/ Boiler Water/ Feed Water/ Condensate Water/ Water Used in Industry/ Construction Water/ Cooling Towers/ Swimming Pool Water/ Water Distilled / demineralized	Alpha BHC	USEPA 508/APHA 2012	0.5 µg/l to 500 µg/l
		Beta BHC		0.5 µg/l to 500 µg/l
		Gamma BHC		0.5 µg/l to 500 µg/l
		Delta BHC		0.5 µg/l to 500 µg/l
		Aldrin		0.5 µg/l to 500 µg/l
		Dieldrin		0.5 µg/l to 500 µg/l
		Alpha endosulphan		0.5 µg/l to 500 µg/l
		Beta endosulphan		0.5 µg/l to 500 µg/l
		Endosulphan sulphate		0.5 µg/l to 500 µg/l
		4,4 DDE		0.5 µg/l to 500 µg/l
		4,4 DDD		0.5 µg/l to 500 µg/l
		4,4 DDT		0.5 µg/l to 500 µg/l

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VII. ORES & MINERALS

1.	Iron Ore	Loss on Ignition	IBM June 2004	0.1 % to 30.0 %
		Fe	IS: 1493(Part 1): 1981(RA 2006)	0.5 % to 69.0 %
		FeO	IBM June 2004	0.06 % to 15.0 %
		SiO ₂	IS 1493(Part 1): 1981 (RA 2006)	0.5% to 30.0%
		Al ₂ O ₃	IS 1493(Part 1): 1981 (RA 2006)	0.2 % to 20.0 %
		S	IS 1493:1959 (RA 2006)	0.001% to 0.10 %
		TiO ₂	IS 1493:1959 (RA 2006)	0.08 % to 5.0 %
		CaO	IS 1493:1959 (RA 2006)	0.1 % to 5.0 %
		MgO	IS 1493:1959 (RA 2006)	0.1 % to 5.0 %
		Mn	IS 1493:1959 (RA 2006)	0.05 % to 8.0 %
		P	IS 1493(Part 1): 1981(RA 2006)	0.01% to 5.0 %
		Moisture	IS 1493(Part 1): 1981 (RA 2006)	0.1 % to 20.0 %
		Flow moisture (Flow table test)	Code of safe Practice for solid bulk Cargoes IMSBC code (Edition 2009)	5.0 % to 23.0 %
		Flow Moisture (Penetration test)	Code of safe Practice for solid bulk Cargoes IMSBC code (Edition 2009)	4.5 % to 20.7 %

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2.	Bauxite Ore	Loss on Ignition	IS 2000 (Part 1):1985 (RA 2001)	5.0 % to 32.0 %
		Moisture	IS 1999 (1987) (RA 2008)	0.1 % to 20.0 %
		SiO ₂	IS 2000 (Part 2): 1985 (RA 2001)	1.0 % to 25.0 %
		Al ₂ O ₃	IS 2000 (Part 3):1985 (RA 2006)	35.0 % to 65.0 %
		Fe ₂ O ₃	IS 2000(Part 4): 1985 (RA 2001)	1.0 % to 60.0 %
		TiO ₂	IS 2000 (Part 5): 1985 (RA 2006)	2.0 % to 6.0 %
3.	Manganese Ore	SiO ₂	IS 1473:2004	0.1% to 30.0%
		MnO ₂	IS 1473: 2004	0.2% to 96.0%
		Mn	IS 1473: 2004	0.1 % to 61.0 %
		Al ₂ O ₃	IS 1473: 2004	0.2 % to 20.0 %
		Fe	IS:1473:2004	8.0 % to 35.0 %
		P	IS 1473: 2004	0.08 % to 0.16 %
4.	Limestone & Dolomite	S	IS 1473:2004	0.01 % to 0.20 %
		Moisture	IS 2109: 1982 (RA 2003)	0.1 % to 15.0 %
		CaO	IS 1760 (Part 3):1992 (RA 2001)	30.0 % to 56.0 %
		MgO	IS 1760 (Part 3):1992 (RA 2001)	0.2 % to 20.0 %
		Fe ₂ O ₃	IS 1760 (Part 3):1992 (RA 2001)	0.1 % to 10.0 %

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	Limestone & Dolomite	SiO ₂	IS 1760 (Part 2): 1991 (RA 1996)	0.5 % to 15.0 %
		Al ₂ O ₃	IS 1760 (Part 3):1991 (RA 2001)	0.2 % to 10.0 %
		LOI	IS 1760 (Part 1): 1991 (RA 2001)	1.0 % to 50.0 %

VIII. COAL & COKE AND OTHER SOLID FUEL

Total Moisture	IS 1350 (Part 1):1984 (RA 2002)	0.1 % to 30.0 %
Moisture on Air dry Basis.	IS 1350 (Part 1):1984 (RA 2002)	0.1 % to 10.0 %
Ash	IS 1350 (Part 1):1984 (RA 2002)	0.1 % to 50.0 %
Volatile Matter	IS 1350 (Part1):1984 (RA 2002)	0.1 % to 50.0 %
Fixed Carbon	IS 1350 (Part 1):1984 (RA 2002)	0.1 to 80.0
Sulphur	IS 1350 (Part 3): 1969 (RA 2000)	0.01 % to 2.0%
Gross Calorific Value	IS 1350 (Part-2: 1970 (RA 2000)	2000.0 Kcal/kg to 8000 .0 Kcal/kg
Hard Groove Index	IS 4433:1979 (RA 2000)	25.0 % to 110.0 %
Crucible Swelling Number	IS 1353: 1993 (RA 2000)	0.0 to 7.0
Iron	IS 1355: 1984 (RA 2007)	0.1% to 20.0%
Silica	IS 1355: 1984 (RA 2007)	1.0 % to 65.0%
Alumina	IS 1355: 1984 (RA 2007)	0.1 % to 30.0%
Phosphorus	IS 1355 : 1984 (RA 2007)	0.05 % to 1.0%

-X-X-X-X-X-X-X-X-X-X-X-X-