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SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
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BIOLOGICAL TESTING

I.	WATER			
'	WAILK			
1.	Drinking/	Coliform count	IS 1622:1981 (RA 2009)	2 to1600 MPN/100 ml
	Swimming Pool/		,	Absent/Present/100ml
	Ground/ Surface/	Enumeration of E.coli	IS 1622:1981 (RA 2009)	2 to1600 MPN/100 ml
	Rinse Water	Detection of E.coli	, ,	Absent Present /ml/100 ml
		Standard Plate count	IS 1622:1981 (RA 2009)	≥1 cfu/ml
		Faecal coliform count	IS 1622:1981 (RA 2009) APHA 9221 E 23 rd Ed. 2017	2 to1600 MPN/100 ml
		Yeast & Mould count	IS 5403:1999 (RA 2005)	≥1 cfu/ml/100ml
II.	POLLUTION & ENV	IRONMENT		
1.	Industrial/	Standard Plate Count	IS 1622:1981 (RA 2009)	≥1 cfu/ml
	Effluents/Waste	Coliform count	IS 1622:1981 (RA 2009)	2 to 1600 MPN/100 ml
	Water			Absent/Present/100ml
		Enumeration of E.coli	IS 1622:1981 (RA 2009)	2 to 1600 MPN/100 ml
				Absent Present /ml/100 ml
		Detection of E.coli		
		Faecal coliform count	IS 1622:1981 (RA 2009) APHA 9221 E 23 rd Ed. 2017	2 to1600 MPN/100 ml
		Yeast & Mould count	IS 5403:1999 (RA 2005)	≥ 1 cfu/ml/100ml
2.	SWAB (Hand,	Aerobic plate count	IS 5402:2012	≥1 cfu/cm ²
	Surface,	Coliform count	IS 5401(Part 1):2002	≥10 cfu/cm ²
	Equipment Swab)	Comorni count	(RA 2007)	
		Enumeration of E.coli	IS 5887 (Part 1):1976 (RA 2005)	≥1 cfu/cm ²
		Detection of E.coli		Absent/ Present per cm ²
		Yeast & mould	IS 5403:1999 (RA 2005)	≥ 1 cfu/cm ²

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III.	MISCELLANEOUS	PRODUCTS (FUEL)		
1.	Aircraft Turbine	Total viable count	IP 385:1999	1 cfu/lit to 4000 cfu/lit
	Fuel (ATF)	Fungal count	IP 385:1999	1.10 cfu/lit
IV.	FOOD & AGRICULTURAL PRODUSTS			
1.	Other specified	Aerobic Plate Count	IS 5402 (Part 1):2012	≥10 cfu/gm
	food items (Ready to Eat/ Cooked	Coliform count	IS 5401 (Part 1):2002 (RA 2007)	≥10 cfu/gm
	Food/ Processed Food Products)	Detection of E. Coil	IS 5887 (Part 1):1976 (RA 2005) IS 1622:1981 (RA 2009)	Absent/Present/25 gm
		Yeast & mould count	IS 5403:1999 (RA 2005)	≥ 10 cfu/gm

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CHEMICAL TESTING

AT I	ABORATORY			
I.	ATMOSPHERIC PO	DLLUTION		
1.	Air & Gases Ambient Air	Oxides of Nitrogen (NOx)	IS 5182 (Part 6):2006	6 μg/m³ to 100 μg/m³
	Quality	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2):2001	6.0 μg/m ³ to 100 μg/m ³
	Monitoring	Carbon Monoxide (CO)/ By GC	IS 5182 (Part 10):1999 (RA 2003) By GC	1 mg/m³ to 10 mg/m³
		Respirable Suspend Particulate Matter (RSPM-PM 10)	IS 5182 (Part 23) (RA 2006)	20 μg/m ³ to 2000 μg/m ³
		PM-2.5	LGN/ENV/SOP/41 Issue date:02/04/18	20 μg/m ³ to 800 μg/m ³
		Lead(as Pb)	LGN//ENV/SOP/44 Issue Date:02/04/18	0.1 μg/m³ to 100 μg/m³
		Ammonia	APHA Method 82 2nd Ed. 1971	10.0 μg/m³ to 500 μg/m³
		Nickel	LGN/ENV/SOP/45 Issue date:02/04/18	0.1 μg/m³ to 100 μg/m³
2.	Stack Emission Monitoring	Particulate Matter (PM)	IS 11255 (Part 1):1985 (RA 2003)	20 mg/m ³ to 500 mg/m ³
		Sulphur Dioxide (SO ₂)	IS 11255 (Part 2):1985 (RA 2003)	5 mg/m ³ to 250 mg/m ³
		Oxides of Nitrogen (NOx)	IS 11255 (Part 7) (RA 2005)	4.0 mg/m ³ to 400 mg/m ³
		Carbon Monoxide (CO)/ By GC	IS 13270:1992	0.1 % to 5 %
		CO ₂ / By GC	IS 13270:1992 (RA 2003)	1 % to 20 %
		O ₂ / By GC	IS 13270:1992 (RA 2003)	1 % to 22 %

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II.	POLLUTION & EN	IVIRONMENT		
1.	Effluent/Waste Water	Total Suspend Solid	APHA 2540 (D) 23 rd Ed 2017 IS 3025 (Part 17):1984 (RA 2002)	1 mg/l to 1000 mg/l
		pH value	APHA 4500 H ⁺ (B) 23 rd Ed 2017 IS 3025 (Part 11):1983 (RA 2006)	4 to 10
		Oil & Grease	APHA 5520 23 rd Ed 2017/ IS 3025 (Part 39):1991 (RA 2003)	1 mg/l to 1000 mg/l
		Biochemical Oxygen demand (BOD) (3 days at 27 °C & 5 days at 20 °C)	APHA 5210 (B) 23 rd Ed 2017 IS 3025 (Part 44):1993 (RA 2003)	2 mg/l to 1,00,00 mg/l
		Chemical Oxygen Demand (COD)	APHA 5220-B:23 rd 2017/ IS 3025 (Part 58):(RA 2006)	4 mg/l to 100, 000 mg/l
		TDS	APHA 2540 (C) 23 rd Ed 2017 IS 3025 (Part 16):1984 (RA 2006)	10 mg/l to 50, 000 mg/l
2.	Sludge/Soil (for Metals-	Chromium (as Cr)	EPA SW 846 Method 7190:1986	1 mg/kg to 1000 mg/kg
	Digestion, Alkali Fusion if require)	Copper (as Cu)	EPA SW 846 Method 7210:1986	0.5 mg/kg to 1000 mg/kg
		Iron (as Fe)	EPA SW 846 Method 7380:1986	5.0 mg/kg to10,00 mg/kg
		Lead (as Pb)	EPA SW 846 Method 7420:1986	1.0 mg/kg to 500 mg/kg
		Nickel (as Ni)	EPA SW 846 Method 7520:1986	10 mg/kg to 800 mg/kg
		Potassium (as K)	USDA:1954 Meth11a	10 mg/kg to 1000 mg/kg

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			(RA 2010)	
		Zinc (as Zn)	EPA SW 846 Method 7950:1986	2 mg/kg to 1000 mg/kg
		Oil & Grease	EPA SW 846 Method 3540C:1986/ APHA 5520 E:23rd Ed 2017	10 mg/kg to 12000 mg/kg
		Sulphate	IS 2720 (Part 27):1977 (RA 2006)	10 mg/kg to 1000 mg/kg
		Chloride	USDA:1954 Meth13 (RA 2010)	10 mg/kg to 500 mg/kg
		pH Value	IS 2720 (Part 26):2002	4 to 10
		Ignitibility	EPA SW 846 Method 1030:1986	40 °C to 350 °C
		Cadmium (as Cd)	USEPA SW 846 Method 7130:1986	0.5 mg/kg to 1000 mg/kg
		Chromium (Hexavalent) (as Cr+6)	USEPA SW 846 Method 7186 A:1996	1.0 mg/kg to 1000 mg/kg
		Sodium (as Na)	USDA:1954 Meth10a (RA 2010)	10 mg/kg to 5000 mg/kg
III.	WATER			
1.	Surface Water & Drinking water, Ground Water,	Acidity	IS 3025 (Part 22):1986 (RA 2003) APHA-2310 (B) 23rd Ed 2017	1 mg/l to 500 mg/l
	Swimming Pool Water, Construction	Alkalinity	IS 3025 (Part 23):1998 (RA 2003) APHA-2320 (B) 23rd Ed 2017	1 mg/l to 5,000 mg/l
	Water, Food Processing Water	Boron (as B)	APHA 4500-B (B):23rd Ed 2017 IS 3025 (Part 57):2005 (RA 2009)	0.05 mg/l to100 mg/l
		Cadmium (as Cd)	APHA 3111 (B) 23rd Ed 2017 IS 3025 (Part 41):1992	0.01 mg/l to 100 mg/l

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			(RA 2003)	
		Calcium (as Ca)	APHA 3500-Ca(B): 23rd Ed 2017 IS 3025 (Part 40):1991 (RA 2003)	1 mg/l to 1000 mg/l
		Chloride	APHA 4500-Cl ⁻ (B): 23rd Ed 2017 IS 3025 (Part 32):1988 (RA 2007)	1 mg/l to 5, 000 mg/l
		Chromium (as Cr)	APHA 3111(B):23rd Ed 2017 IS 3025 (Part 52):2003	0.01 mg/l to 100 mg/l
		Conductivity	APHA 2510:23rd Ed 2017/ IS 3025 (Part 14):1984 (RA 2002)	1 µmhos/cm to 4 ,000 µmhos/cm
		Copper (as Cu)	APHA 3111(B):23rd Ed 2017 IS 3025 (Part 42):1992 (RA 2003)	0.02 mg/l to 100 mg/l
		Dissolved Oxygen	APHA 4500-O/ (C) &(G) 23nd Ed 2017 IS 3025 (Part 38):1989 (RA 2003)	1 mg/l to 20 mg/l
		Total Solids (Inorganic/Organic)	APHA 2540(B) & (E) 23rd Ed 2017 IS 3025 (Part 18):1984 (RA 2002)	1 mg/l to 10, 000 mg/l
		Fluoride (as F-)	APHA 4500 F ⁻ (D) 23rd Ed 2017 IS 3025 (Part 60):2008	0.1 mg/l to 100 mg/l
		Iron (as Fe)	APHA 3111 (B) 23rd Ed 2017 IS 3025 (Part 53):2003	0.01 mg/l to 100 mg/l
		Lead (as Pb)	APHA 3111 (B): 23rd Ed 2017 IS 3025 (Part 47):1994	0.1 mg/l to 100 mg/l

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SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			(RA 2003)	
		Magnesium (as Mg/l CaCO ₃)	APHA 3500 Mg (B): 23 rd Ed 2017 IS 3025 (Part 46):1994 (RA 2003)	1 mg/l to 1000 mg/l
		Manganese (as Mn)	ÀPHA 3111 (B):23 rd Ed 2017 IS 3025 (Part 59) (RA 2012)	0.02 mg/l to 100 mg/l
		Nickel (as Ni)	APHA 3111 (B):23 rd Ed 2017 IS 3025 (Part 54)-RA 2003	0.05 mg/l to 50 mg/l
		Nitrate (NO₃-N)	IS 3025 (Part 34):1988 (RA 2003)	0.1 mg/l to 200 mg/l
		Neutralization Value (H ₂ SO ₄ /NaOH)	IS 456:2000	0.1 ml to 100 ml
		Odour	IS 3025 (Part 5):1983 (RA 2002)	Qualitative
		pH Value	APHA 4500 H ⁺ / (B):23 rd 2017 IS 3025 (Part 11):1983 (RA 2002)	1 to 14
		Phosphorus (as P/PO ₄)	APHA 4500 P/ (D): 23 rd Ed 2017 IS 3025 (Part 31):1988 (RA 2003)	0.1 mg/l to 100 mg/l
		Potassium (as K)	APHA 3500 (B):23 rd Ed 2017 IS 3025 (Part 45):1993 (RA 2003)	1 mg/l to 1000 mg/l
		Residual Free Chlorine	IS 3025 (Part 26):1986 (RA 2003)	0.1 mg/l to 10 mg/l
		Silica (as SiO ₂)	APHA 4500 SiO ₂ C / (D): 23 rd Ed 2017 IS 3025 (Part 35):1988 RA 2003	0.1 mg/l to 100 mg/l
		Sulphate (as SO ₄)	APHA 4500 SO4 (E): 23 rd Ed 2017	1 mg/l to 1000 mg/l

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			IS 3025 (Part 24)-1986 RA 2009	
		Total Dissolved Solids	APHA 2540 (C):23 rd Ed 2017 IS 3025 (Part 16):1984 (RA 2006)	1 mg/l to 10,000 mg/l
		Total Hardness	APHA 2340 (C):23rd Ed 2017 IS 3025 (Part 21):2009	1 mg/l to 5000 mg/l
		Total Kjeldahl Nitrogen (as N)	APHA 4500 N (B) & (C):23rd Ed 2017 IS 3025 (Part 34)-1988 (RA 2003)	10 mg/l to 1000 mg/l
		Turbidity	APHA 2130 (B):23rd Ed 2017 IS 3025 (Part 10):1984 (RA 2002)	1 NTU to 1000 NTU
		Zinc (as Zn)	APHA 3111 (B):23rd Ed 2017/ IS 3025 (Part 49):1994 (RA 2003)	0.05 mg/l to 50 mg/l
		Oxygen Absorption by KMnO ₄ at 27 °C	IS 3328:1993	0.1 mg/l to 100 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58):2006 APHA 5220 (B):23rd Ed 2017	4.0 mg/l to 1000 mg/l
		Biological Oxygen Demand (BOD) at 20 °C for 5 days & at 27 °C for 3 days	APHA 5210 (B):23rd Ed 2017 IS 3025 (Part 44):1993 (RA 2003)	2.0 mg/l to 1000 mg/l
		Bicarbonates	IS 3025 (Part 51):2001 (RA 2006)	1 mg/l to 500 mg/l
		Carbonates	IS 3025(Part 51):2001	1 mg/l to 500 mg/l
		Total suspend solids	APHA 2540 (D):23 rd Ed 2017 IS 3025 (Part 17):1984 (RA 2012)	1 mg/l to 500 mg/l
		Sodium (as Na)	APHA 3500 Na/(B):	1 mg/l to 1000 mg/l

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			23rd Ed 2017	
			IS 3025 (Part 45):1993	
IV.	LUBRICANTS			
1.	Transformer	Dielectric Strength	IS 6792:1992 (RA 2003)	10 kV to 100 kV
	Oil/Insulating	Water Titration by	IS 13567:1992 (RA 2003)/	2 mg/kg to 50 mg/kg
	Oil	KF	ASTM D 6304-07	
		Sediment & Sludge	IS 1866:2000 (Annex-A)	0.001 % to 2.0 %
		Dissolved Gas Analysis	IS 9434:1992 (RA 2003)	0.1 μl/l to 10000 μl/l
		Neutralization Value	IS 1448 (Part 1/Sec 1): 2002	0.025 mgKOH/g to
				100 mgKOH/g
		Flash Point (PMCC)	IS 1448 (Part 21): 2012	55°C to 180°C
2.	Lubricating Oil/	Ash Content	IS 1448 (Part 4): 1984	0.01% to 10%
	Hydraulic		(RA 2002)	
	Oil/Engine	Copper Strip Corrosion	ÌS 1448 (Part 15): 2004	1a to 4c
	Oil/Gear Oil	Relative	IS 1448 (Part 32): 1992	0.7500 to 1.000
		Density@15°C/	(RA 2003)/	0.8000 g/ml to
		Density @23°C	IS 1448 (Part 16): 1990	0.9000 g/ml
			(RA 2002)/ ASTM D 1298-99	G
		Flash Point(COC)	IS 1448 (Part 69):2013	90°C to 210°C
		Kinematic Viscosity	IS 1448 (Part 25): 1976	5 cSt to 150 cSt
		at 38ºC/40 °C	(RA 2002)	
		Kinematic Viscosity	IS 1448 (Part 25): 1976	5 cSt to 50 cSt
		at 100 °C	(RA 2002)/	
			ASTM D 445-15a	
		Total Acid Number	ASTM D 974-04	0.01 mgKOH/g to
				35 mgKOH/g
		Pour Point	IS 1448 (Part 10/Sec-1):2012	(-)18 °C to 51 °C
		Sediment	IS 1448 (Part 41)-1992	0.01 % to 10 %
			(RA 2003)	
		TBN (Total Base	IS 1448 (Part 1/Sec 1): 2002	1 mgKOH/g to
		Number)		40 mgKOH/g
		Sulphated Ash	IS 1448 (Part 4): 1984	0.01 % to 30 %

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			(RA 2002)	
		Water Content	IS 1448 (Part 40): 1987 (RA 2006)	0.05 % to 50 %
		Viscosity Index	IS 1448 (Part 56):2013	50 to 200
		Electrical Conductivity	IS 1448 (Part 148):2002	0.1 pS/m to 500 pS/m
		Iron	ASTM D 5863-00a	1 mg/kg to 150 mg/kg
		Copper	IS 11123:1984 (RA 2003)	1 mg/kg to 150 mg/kg
		Nickel	ASTM D 5863-00a	2 mg/kg to 50 mg/kg
		Lead	IS 1448 (Part 112): 1983 (RA 2006)	5 mg/kg to 150 mg/kg
		Chromium	IS 13319:1992 (RA 2003)	1 mg/kg to 50 mg/kg
3.	Thermic Fluid	Fire Point	IS 1448 (Part 69): 2013	10°C to 200°C
V.	PETROLEUM & PR	ODUCTS		
1.	HSD (Diesel)	Ash content	IS 1448 (Part 4): 1984 (RA 2002)	0.01% to 20%
		Gross Calorific Value	IS 1448 (Part 6): 1984 (RA 2002)	9000 cal/g to 11000 cal/g (Gross)
		Carbon Residue	IS 1448 (Part 122):2013 IS 1448 (Part 8):2012	0.01% to 20%
		Copper Strip Corrosion	IS 1448 (Part 15):2004	1a to 4c
		Cetane Index	ASTM D 4737-10	40 to 60
		Cloud Point	IS 1448 (Part 10/Sec 1):2012	(-)1°C to (-) 10°C
		Relative density@15 °C/ Density	(RA 2002)	800 to 1000
		Distillation	IS 1448 (Part 18):1991 (RA 2016)	110°C to 400°C
		Flash Point (Abel)	IS 1448 (Part 20):1998	20 °C to 55°C
		Kinematic Viscosity at 40 °C	IS 1448 (Part 25)-1976 (RA 2002)	2 cSt to 8 cSt
		Total Acidity	IS 1448 (Part I/Sec-1):2002	0.01 mgKOH/g to 2.0 mgKOH/g
		Pour Point	IS 1448 (Part 10/Sec 1):2012	(-)12°C to 15°C

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		Sediment	IS 1448 (Part 30)-1970 (RA 2003)	0.01% to 10%
		Sulphur Content	IS 1448 (Part 33): 1991 (RA 2003)	0.01 % to 20 %
		Water Content	IS 1448 (Part 40): 1987 (RA 2006)	0 to 10%
		Inorganic Acidity	IS 1448 (Part I/Sec-I): 2002	0.01 mgKOH/g to 2.0 mgKOH/g
2.	Furnace Oil	Ash content	IS 1448 (Part 4)-1984 (RA 2002)	0.01% to20 %
		Flash Point, PMCC	IS 1448 (Part 21): 2012	55°C to 150°C
		Kinematic Viscosity at 50 °C	IS 1448 (Part 25): 1976 (RA 2002)	100 cSt to 300 cSt
		Kinematic Viscosity at 100 °C	IS 1448 (Part 25): 1976 (RA 2002)	10 cSt to 30 cSt
		Relative density at15°C/ Density	IS 1448 (Part 32): 1992 (RA 2003)	0.8 to 1.0
		Gross Calorific Value	IS 1448 (Part 6): 1984 (RA 2002)	100 cal/g to 11000 cal/g
		Sulphur Content	IS 1448 (Part 33): 1991 (RA 2003)	0.1 % to 4.5 %
		Sediment	IS 1448 (Part 30): 1970 (RA 2003)	0.01% to 10 %
		Pour Point	IS 1448 (Part 10/Sec 1): 2012	9 °C to 21 °C
		Water Content	IS 1448 (Part 40): 1987 (RA 2006)	0.05 % to 10 %

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CHEMICAL TESTING

AT S	BITE			
I.	ATMOSPHERIC PO	LLUTION		
1.	Site Monitoring	Ambient Noise Level Leq dB(A)	IS 9989:1981	30 dB(A) to 100 dB(A)

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