

Laboratory CSIR-Indian Institute of Toxicology Research, Vishvigyan Bhawan, 31, Mahatma Gandhi Marg, Lucknow, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7103

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Validity 27.03.2018 to 26.03.2020

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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BIOLOGICAL TESTING

I.	TOXICOLOGY			
1.	Plastics and Polymeric Products	Biological reactivity test (systemic injection test)	IS 12709:1994 (RA 2009) IS9845:1998 United States Pharmacopeia Indian Pharmacopoeia 2017	Not Applicable Qualitative
II.	WATER			
2.	Drinking Water	Enumeration (most probable number i.e. MPN/100 ML) of coliforms and fecal coliforms	Multiple tube fermentation method For total coliforms vide BIS- IS 10500:2012 or APHA 2012 and For faecal coliforms vide BIS- IS 1622:1981 (RA 2009)	Absent (<1.8) -> 1600/100 ml with 95% lower and upper confidence limits
3.	Surface & Ground Water	Enumeration (most probable number i.e. MPN/100 ML) of coliforms and fecal coliforms	Multiple tube fermentation method For total coliforms vide BIS- IS 10500:2012 or APHA 2012 and For faecal coliforms vide BIS- IS 1622:1981 (RA 2009)	Absent (<1.8) -> 1600/100 ml with 95% lower and upper confidence limits

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CHEMICAL TESTING

I.	ATMOSPHERIC POLLUTION			
1.	Ambient Air Monitoring	Respirable suspended particulate matter	IS 5182 (Part 23): 2006	10 µg/m ³ to 1000 µg/m ³
		Suspended particulate matter	IS 5182 (Part 4): 1999	10 µg/m ³ to 1000 µg/m ³
		Sulphur dioxide	IS 5182 (Part 2): 2001	6 µg/m ³ to 200 µg/m ³
		Nitrogen dioxide	IS 5182 (Part 6) 2006	6 µg/m ³ to 750 µg/m ³
2.	Stack Emission Monitoring	Particulate matter	IS 11255 (Part 1): 1985 (RA 2003)	10 mg/m ³ to 200 mg/m ³
		Sulphur dioxide	IS 11255 (Part 2): 1985 (RA 2003)	5 mg/m ³ to 1000 mg/m ³
3.	Flow Rate	Temperature	IS 11255 (Part 3): 2008	10 °C to 600 °C
		Velocity	IS 11255 (Part 3): 2008	3 m/sec to 60 m/sec
II.	RESIDUES IN FOOD PRODUCT			
1.	Food Materials (Meat, Fish & Oils)	Chlorinated Pesticides	SOP No: SOP/FAL/003 Date of issue:15/04/2016 Edition No:4 th	
		α-HCH		0.05 mg/kg to 10 mg/kg
		β-HCH		0.05 mg/kg to 10 mg/kg
		γ-HCH		0.05 mg/kg to 10 mg/kg
		δ-HCH		0.05 mg/kg to 10 mg/kg
		pp-DDT		0.05 mg/kg to 10 mg/kg
		pp-DDD		0.05 mg/kg to 10 mg/kg
		op-DDT		0.05 mg/kg to 10 mg/kg
		pp-DDE		0.05 mg/kg to 10 mg/kg
		α-endosulfan		0.05 mg/kg to 10 mg/kg
	Aldrin	0.05 mg/kg to 10 mg/kg		

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2.	Low Fat Food Commodities Viz; Fruits, Vegetables & Cereals	Pesticides	SOP No: SOP/QuE/001	
		α -HCH	Date of issue:15/04/2016	20 μ g/kg to 500 μ g/kg
		β -HCH	Edition No:2 nd	20 μ g/kg to 500 μ g/kg
		γ -HCH		20 μ g/kg to 500 μ g/kg
		δ -HCH		20 μ g/kg to 500 μ g/kg
		op-DDT		20 μ g/kg to 500 μ g/kg
		pp-DDT		20 μ g/kg to 500 μ g/kg
		pp-DDE		20 μ g/kg to 500 μ g/kg
		pp-DDD		20 μ g/kg to 500 μ g/kg
		α -endosulfan		20 μ g/kg to 500 μ g/kg
		β -Endosulfan		20 μ g/kg to 500 μ g/kg
		Malathion		20 μ g/kg to 500 μ g/kg
		Chlorpyrifos		20 μ g/kg to 500 μ g/kg
Cypermethrin		20 μ g/kg to 500 μ g/kg		
		Fenvelerate		20 μ g/kg to 500 μ g/kg
III.	WATER			
1.	Drinking/Surface/ Ground Water		Standard methods (APHA, 22 nd Ed., 2012)	
		pH	4500-H ⁺ -B	1 to 14
		Specific conductivity	2510-B	2 μ s/cm to 2000 μ s/cm
		Total solids	2540-B	20 mg/l to 20000 mg/l
		Dissolved solids	2540-C	20 mg/l to 20000 mg/l
		Suspended solids	2540-D	20 mg/l to 20000 mg/l
		Silica	4500-SiO ₂ -C	1 mg/l to 100 mg/l
		Phosphate	4500-P-D	0.003 mg/l to 100 mg/l
		Phenol	5530-C	0.001 mg/l to 100 mg/l
		Ammonical nitrogen	4500-NH ₃ -C	20 mg/l to 1000 mg/l
		Total hardness	2340-C	5 mg/l to 2500 mg/l
		Calcium hardness	2340-C	5 mg/l to 2500 mg/l
		Magnesium hardness	2340-C	20 mg/l to 1000 mg/l
		Chloride	4500-Cl ⁻ B	2 mg/l to 500 mg/l

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		Sulphate	4500-SO ₄ -E	5 mg/l to 100 mg/l
		Nitrate	4500-NO ₃ -C	0.5 mg/l to 50 mg/l
		Fluoride	4500-F-D	0.1 mg/l to 50 mg/l
		Free residual chloride	4500-Cl ₂ -B,C	0.04 mg/l to 100 mg/l
		Total alkalinity	2320-B	20 mg/l to 100 mg/l
IV.	RESIDUE IN WATER			
1.	Residue in Water	Heavy metals (acid digestion, AAS)	APHA, 2012 using AAS (3111B), Method 3500	
		Cadmium	3500-Cd B	0.003 mg/l to 5 mg/l
		Chromium	3500-Cr B	0.025 mg/l to 50 mg/l
		Iron	3500-Fe B	0.10 mg/l to 100 mg/l
		Nickel	3500-Ni B	0.02 mg/l to 100 mg/l
		Copper	3500-Cu B	0.02 mg/l to 50 mg/l
		Lead	3500-Pb B	0.01 mg/l to 200 mg/l
		Calcium	3500-Ca B	1 mg/l to 100 mg/l
		Magnesium	3500-Mg B	1 mg/l to 50 mg/l
		Manganese	3500-Mn B	0.1 mg/l to 50 mg/l
		Zinc	3500-Zn B	0.5 mg/l to 50 mg/l
		Atomic Fluorescence	SOP No: SOP/INS/019 Date of issue: 15/04/2016 Date of expiry: 31/12/2018 Edition No: 2 nd	
		Hg	AFS	0.200 µg/l to 1 µg/l
		As	AFS	0.200 µg/l to 1 µg/l
		Organochlorine Pesticide Residues	SOP No: SOP/WAL/002 Date of issue: 15/04/2016 Date of expiry: 31/12/2018 Edition No: 4 th	
		α-HCH		0.0001 mg/l to 0.10 mg/l
		β-HCH		0.0001 mg/l to 0.10 mg/l
		γ-HCH		0.0001 mg/l to 0.10 mg/l
		δ-HCH		0.0001 mg/l to 0.10 mg/l
		pp-DT		0.0001 mg/l to 0.10 mg/l

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		pp-DDD		0.0001 mg/l to 0.10 mg/l
		Op-DDT		0.0001 mg/l to 0.10 mg/l
		pp-DDE		0.0001 mg/l to 0.10 mg/l
		α-endosulfan		0.0001 mg/l to 0.10 mg/l
		β-endosulfan		0.0001 mg/l to 0.10 mg/l
		Aldrin		0.0001 mg/l to 0.10 mg/l
V.	POLLUTION & ENVIRONMENT			
1.	Liquid Effluents	Physico Chemical Parameters	APHA, 2012 (APHA, 22 nd Ed., 2012)	
		pH	4500-H ⁺ -B	1-14
		Total Solids	2540-B	20-20000 mg/l
		Dissolve Solids	2540-C	20-20000 mg/l
		Suspended Solids	2540-D	20-20000 mg/l
		Volatile Solids	2540-E	20-10000 mg/l
		Fixed Solids	2540-E	20-15000 mg/l
		Oil and Grease	5520-B	5-1000 mg/l
		BOD	5210-B	1-100000 mg/l
		COD	5520-C	1-100000 mg/l
		Ammonical nitrogen	4500-NH ₃ -C	2-1000 µg/l
		Chloride	4500-Cl ⁻ -B	50-1000 mg/l
		Sulphate	4500-SO ₄ -E	30-500 mg/l
		Phenol	5530-C	0.01-100 mg/l
		Fluoride	4500-F-D	0.1-150 mg/l
		Total Nitrogen	4500-N-B	1-500 mg/l
		Cyanide	4500-CN-E	0.2-100 mg/l
		Phosphate	4500-P-D	0.003-100 mg/l
		Free residual chlorine	4500-Cl ₂ -B,C	0.04-100 mg/l
		Dissolved oxygen	5210-B	0.5-12 mg/l
		Heavy Metals (Acid Digestion, AAS)	APHA, 2012 using AAS (3111B) Method 3500	
		Cadmium		0.30-50mg/l

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		Chromium		1.0 mg/l to 50 mg/l
		Iron		2.0 mg/l to 100 mg/l
		Nickel		2.0 mg/l to 100 mg/l
		Copper		1.0 mg/l to 50 mg/l
		Lead		5.0 mg/l to 100 mg/l
		Calcium		3.0 mg/l to 50 mg/l
		Magnesium		0.20 mg/l to 50 mg/l
		Manganese		1.0 mg/l to 50 mg/l
		Zinc		1.0 mg/l to 50 mg/l
VI.	PLASTICS AND POLYMERS			
1.	Plastics and Polymeric Products	Physicochemical tests (including Overall/Global migration, Heavy metals, & UV absorbing materials)	IS 12709 : 1994 Clause 16 (RA 2009) IS9845:1998 United States Pharmacopeia, Indian Pharmacopeia, 2017	5 mg to 20 mg Qualitative Upto 100 ppm Qualitative

NOTE: The Laboratory has demonstrated competence for the stated scope for **WATER**. This however **does not fully cover** the specification requirements of **BIS for the Packaged Drinking Water as per IS:14543 and the Packaged Natural Mineral Water IS:13428.**