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SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
į			performed	

## **BIOLOGICAL TESTING**

I.	WATER			
1.	Drinking Water/Treated Water/Packaged	Total coliform bacteria	IS 1622-1981, (RA 2014)	Qualitative (Absent/present/100ml 1 to 161 MPN/100ml)
	Drinking Water/Natural Mineral Water	Faecal coliforms	IS 1622-1981, (RA 2014)	Qualitative (Absent/present/100ml 1 to 161 MPN/100ml)
		E. coli or thermotolerant coliform bacteria	IS 1622-1981, (RA 2014)	Qualitative (Absent/present/100ml 1 to 161 MPN/100ml)
2.	Ground Water/ Surface Water	Standard Plate count at 37°C for 48 hrs	IS 1622-1981, (RA 2014)	≥1.0cfu/ml
		E. coli or thermotolerant coliform bacteria	IS 1622-1981, (RA 2014)	Qualitative (Absent/present/100ml 2 to 1600 MPN/100 ml)
		Total coliform bacteria	IS 1622-1981, (RA 2014)	2 to 1600 MPN/100 ml
		Faecal coliforms	IS 1622-1981, (RA 2014)	Qualitative (Absent/present/100ml 2 to 1600MPN/100ml)
3.	Water for Ice	Standard Plate count at 37°C for 48 hrs	IS 1622-1981, (RA 2014)	≥1.0cfu/ml
		Coliform bacteria	IS 1622-1981, (RA 2014)	1 to 161 MPN/100ml
			IS 15185-2002, (RA 2014)	Qualitative (Absent/present/100ml)
4.	Water for Processed	Standard Plate count at 37°C for 48 hrs	IS 1622-1981, (RA 2014)	≥1.0 cfu/ml
	Food Industry	Coliform bacteria	IS 1622-1981, (RA 2014)	1 to 161 MPN/100ml
		Proteolytic Organisms count	IS 42511967 Appendix A (RA 2015)	≥1.0cfu/ml

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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
		Lipolytic Organisms count	IS 4251-1967 Appendix A (RA 2015)	≥1.0cfu/ml
5.	Water for Swimming Pool	Standard Plate count at 35.0 ± 0.5 °C for 24 hrs.	IS 3328-1993, Annex A (RA 2013)	≥ 1.0 cfu/ml
	and Spas	Coliform Organisms	IS 1622-1981, (RA 2014)	1 to 161 MPN/100ml
II.	FOODS & AGRICUL	TURAL PRODUCTS		
1.	Raw & Cooked Food	Total Coliforms Count E. coli	IS 5401 (Part 1) 2012 IS 5887 (Part 1) 1976, (RA 2018)	≥10 cfu/g Qualitative (Absent/present/g)
		Aerobic microbial count at 30°C for 72 hrs	IS 5402-2012 (RA 2018)	≥10 cfu/g
		Salmonella	IS 5887 (Part 3)1999, (RA 2018)	Qualitative (Absent/present/25g)
		Staphylococcus aureus	IS 5887 (Part 8/Sec.1) 2002, (RA 2018)	≥10 cfu/g
		Yeast &Mould count	IS 5403 1999, (RA 2018)	<u>&gt;</u> 10 cfu/g
		Listeria monocytogenes	IS 14988 (Part 1) 2001, (RA 2018)	Qualitative (Absent/present/25g)
2.	Canned &	Total coliforms count	IS 5401 (Part 1) 2012	<u>&gt;</u> 10 cfu/g
	Processed Foods	E. coli	IS 5887 (Part 1) 1976, (RA 2018)	Qualitative (Absent/present/g)
		Aerobic microbial count at 30°C for 72 hrs	IS 5402-2012. (RA 2018)	≥10 cfu/g
		Salmonella	IS 5887 (Part 3)1999, (RA 2018)	Qualitative (Absent/present/25g)
		Staphylococcus aureus	IS 5887 (Part 8/Sec.1) 2002, (RA 2018)	≥10 cfu/g
		Yeast &Mould count	IS 5403 1999, (RA 2018)	<u>&gt;</u> 10 cfu/g
		Listeria monocytogenes	IS 14988 (Part 1) 2001, (RA 2018)	Qualitative (Absent/present/25g)

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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
3.	Milk & Dairy Products	Total coliforms count	IS 5401 (Part 1) 2012	≥10 cfu/g ≥1 cfu/ml
		E. coli	IS 5887 (Part 1) 1976, (RA 2018)	Qualitative (Absent/present/g)
		Aerobic microbial count at 30°C for 72 hrs	IS 5402-2012. (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Salmonella	IS 5887 (Part 3)1999, (RA 2018)	Qualitative (Absent/present/25g)
		Staphylococcus aureus	IS 5887 (Part 8/Sec.1) 2002, (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Yeast &Mould count	IS 5403 1999, (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Listeria monocytogenes	IS 14988 (Part 1) 2001, (RA 2018)	Qualitative (Absent/present/25g)
4.	Bakery and Confectionery	Total coliforms count	IS 5401 (Part 1) 2012	≥10 cfu/g ≥1 cfu/ml
	products	E. coli	IS 5887 (Part 1) 1976, (RA 2018)	Qualitative (Absent/present/g)
		Aerobic microbial count at 30 °C for 72 hrs	IS 5402-2012. (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Salmonella	IS 5887 (Part 3)1999, (RA 2018)	Qualitative (Absent/present/25g)
		Staphylococcus aureus	IS 5887 (Part 8/Sec.1) 2002, (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Yeast &Mould count	IS 5403 1999, (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Listeria monocytogenes	IS 14988 (Part 1) 2001, (RA 2018)	Qualitative (Absent/present/25g)
5.	Fruits and Vegetables and	Total coliforms count	IS 5401 (Part 1) 2012	≥10 cfu/g ≥1 cfu/ml
	their products	E. coli	IS 5887 (Part 1) 1976, (RA 2018)	Qualitative (Absent/present/g)

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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
		Aerobic microbial count at 30 °C for 72 hrs	IS 5402-2012. (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Salmonella	IS 5887 (Part 3)1999, (RA 2018)	Qualitative (Absent/present/25g)
		Staphylococcus aureus	IS 5887 (Part 8/Sec.1) 2002, (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Yeast &Mould count	IS 5403 1999, (RA 2018)	≥10 cfu/g ≥1 cfu/ml
		Listeria monocytogenes	IS 14988 (Part 1) 2001, (RA 2018)	Qualitative (Absent/present/25g)
6.	Cereals and Cereal Products	Total coliforms count  E. coli	IS 5401 (Part 1) 2012 IS 5887 (Part 1) 1976, (RA 2018)	≥10 cfu/g Qualitative (Absent/present/g)
		Aerobic microbial count at 30 °C for 72 hrs	IS 5402-2012. (RA 2018)	≥10 cfu/g
		Salmonella	IS 5887 (Part 3)1999, (RA 2018)	Qualitative (Absent/present/25g)
		Staphylococcus aureus	IS 5887 (Part 8/Sec.1) 2002, (RA 2018)	≥10 cfu/g
		Yeast &Mould count Listeria monocytogenes	IS 5403 1999, (RA 2018) IS 14988 (Part 1) 2001,	>10 cfu/g Qualitative
7.	Herbs, Spices &	Total coliforms count	(RA 2018) IS 5401 (Part 1) 2012	(Absent/present/25g) ≥10 cfu/g
	condiments	E. coli	IS 5887 (Part 1) 1976, (RA 2018)	Qualitative (Absent/present/g)
		Aerobic microbial count at 30 °C for 72 hrs	IS 5402-2012 (RA 2018)	≥10 cfu/g
		Salmonella	IS 5887 (Part 3)1999, (RA 2018)	Qualitative (Absent/present/25g)
		Staphylococcus aureus	IS 5887 (Part 8/Sec.1) 2002, (RA 2018)	≥10 cfu/g
		Yeast &Mould count	IS 5403 1999, (RA 2018)	≥10 cfu/g

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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
		Listeria monocytogenes	IS 14988 (Part 1) 2001, (RA 2018)	Qualitative (Absent/present/25g)
III.	POLLUTION & ENV	IRONMENT		
1.	Swabs (Hand swab/Surface swab/Equipment	Total coliforms	EELWP/111 (Issue No. 3.0 dt. 01.10.12, Rev. No. 1 dt. 05.07.18)	≥1 organism/cm²
	swab etc.)	E.coli	EEL/WP/111 (Issue No. 3.0 dt. 01.10.12, Rev. No. 1 dt. 05.07.18)	Qualitative (Absent/present/ cm²)
		Aerobic microbial count at 30 °C for 72 hrs	EEL/WP/111 (Issue No. 3.0 dt. 01.10.12, Rev. No. 1 dt. 05.07.18)	≥1 organism/ cm²
		Staphylococcus aureus	EEL/WP/111 (Issue No. 3.0 dt. 01.10.12, Rev. No. 1 dt. 05.07.18)	≥1 organism/ cm²

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SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
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## **CHEMICAL TESTING**

I.	ATMOSPHERIC POLLUTION			
1.	Ambient Air/In plant Air quality/	Sulphur dioxide	IS 5182 (Part 2)-2001, (RA 2017)	5μg/m³to 1000 μg/m³
	Fugitive emission Monitoring as per	Nitrogen dioxide	IS 5182 (Part 6)-2006, (RA 2017)	5μg/m³to 1000 μg/m³
	CPCB/KSPCB Specifications	Particulate Matter (Size less than 10µm) or PM <sub>10</sub>	IS 5182(Part 23)-2006, (RA 2017)	5μg/m <sup>3</sup> to 1000 μg/m <sup>3</sup>
		Particulate Matter (Size less than 2.5µm) or PM <sub>2.5</sub>	EEL/WP/A/04 (Issue No. 3.0 dt. 01.10.12), based on CPCB guidelines 2011	3µg/m³ to 500 µg/m³
		Suspended Particulate Matter	IS 5182 (Part 4)-1999, (RA 2014)	10μg/m³ to 1000 μg/m³
		Ozone	EEL/WP/A/06 (Issue No. 3.0 dt. 01.10.12), based on CPCB guidelines 2011	2μg/m <sup>3</sup> to 500 μg/m <sup>3</sup>
		Ammonia	EEL/WP/A/07 (Issue No. 3.0 dt. 01.10.12), based on CPCB guidelines 2011	18µg/m³ to 700 µg/m³
		Benzene	IS 5182 (Part 11)-2006, (RA 2017)	1μg/m³ to 100 μg/m³
		Benzo (a) Pyrene	EEL/WP/A/09 (Issue No. 3.0 dt. 01.10.12), based on CPCB guidelines 2011	0.4 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>
		Lead	EEL/WP/A/10 (Issue No. 3.0 dt. 01.10.12), based on CPCB guidelines 2011	6 ng/m <sup>3</sup> to 2000 ng/m <sup>3</sup>

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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
		Arsenic	EEL/WP/A/10 (Issue No. 3.0 dt. 01.10.12), based on CPCB guidelines 2011	0.6 ng/m <sup>3</sup> to 1000 ng/m <sup>3</sup>
		Nickel	EEL/WP/A/10 (Issue No. 3.0 dt. 01.10.12), based on CPCB guidelines 2011	3 ng/m <sup>3</sup> to 1000 ng/m <sup>3</sup>
		Hydrogen sulphide	IS 5182 (Part 7)-1973, (RA 2014)	2 μg/m³ to 100 μg/m³
		Carbon monoxide	Cl. 4 of IS 5182 (Part 10)- 1999, (RA 2014)	0.1 mg/m <sup>3</sup> to 100 mg/m <sup>3</sup>
2.	Stack Emission	Temperature	IS 11255 (Part 3)-2008, (RA 2013)	5°C to 950 °C
		Velocity	IS 11255 (Part 3)-2008, (RA 2013)	1 m/sec to 30 m/sec
		Flow Rate	IS 11255 (Part 3)-2008, (RA 2013)	50 Nm³/hr to 2500000 Nm³/hr
		Particulate Matter	IS 11255 (Part 1)-1985, (RA 2014)/USEPA method 5-1991	2 mg/Nm <sup>3</sup> to 1000 mg/Nm <sup>3</sup>
		Sulphur dioxide	IS 11255 (Part 2)-1985, (RA 2014)/USEPA method 6-1991	12 mg/Nm <sup>3</sup> to 10000 mg/Nm <sup>3</sup>
		Oxides of Nitrogen	IS 11255 (Part 7)-2005, (RA 2017)/USEPA method 7-1991	11 mg/Nm <sup>3</sup> to 4000 mg/Nm <sup>3</sup>
		Hydrogen sulphide	IS 11255 (Part 4)-2006, (RA 2017)/USEPA method 11-1991	2mg/Nm³to 100 mg/Nm³
		Ammonia	IS 11255 (Part 6)-1999, (RA 2014)	5 mg/Nm <sup>3</sup> to 200 mg/Nm <sup>3</sup>
		Fluoride Mercury	USEPA method 13 A-1991 USEPA method 29-1991	1 mg/Nm³ to 100 mg/Nm³ 0.03 mg/Nm³ to
<u> </u>		Welculy	OSEFA MEMOU 29-1991	100 mg/Nm <sup>3</sup>

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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
		Vanadium	USEPA method 29-1991	0.3 mg/Nm³ to 200 mg/Nm³
		Nickel	USEPA method 29-1991	0.3 mg/Nm <sup>3</sup> to 200 mg/Nm <sup>3</sup>
		Lead	USEPA method 29-1991	0.3 mg/Nm <sup>3</sup> to 200 mg/Nm <sup>3</sup>
		Sulphuric Acid emission	USEPA method 8-1991	12 mg/Nm <sup>3</sup> to 1000 mg/Nm <sup>3</sup>
		Carbon monoxide	USEPA method 10-1991	5 mg/Nm <sup>3</sup> to 1250 mg/Nm <sup>3</sup>
3.	Ambient/Source Noise Levels (Plant area)	L <sub>eq</sub> -Equivalent noise level	IS 9989-1981, (RA 2008)	30 dB (A) to 130 dB (A)
4.	Flue gas	CO	Instrumental method (SOP	2 ppm to 1000 ppm
	monitoring	CO <sub>2</sub>	No. EEL/ENV/MP/01) based	1% to 99 %
		O2	on manufactures manual for flue gas analyzer	1% to 99 %
5.	Light intensity monitoring	Illumination	Instrumental method (SOP No. EEL/ENV/MP/01)	Upto 50000 LUX
6.	Heat Stress	Wet bulb globe temp.	Instrumental method (SOP No. EEL/ENV/MP/01)	20°C to 50 °C
II.	FOOD & AGRICULT	URAL PRODUCTS		
1.	Bakery and	Moisture	IS 12711-1989 (RA 2015)	1 % to 25 %
	Confectionery	Ash	IS 12711-1989 (RA 2015)	0.1 % to 15 %
	Products (Biscuit,	Protein	IS7219-1973 (RA 2010)	0.5 % to 25 %
	chocolate, cocoa	Total Fat	IS 12711-1989 (RA 2015)	0.5 % to 40 %
	powder, sweets, sugar boiled confectionary, tea, coffee, cake, bread)	Non Fat Milk Solids	FSSAI Lab Manual for Beverages, Sugar & Confectionery, products,2015,C4	0.1 % to 70 %

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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
		Cocoa solids	FSSAI Lab Manual for Beverages, Sugar & Confectionery products,2015,C8	0.1 % to 50 %
		Milk fat	FSSAI Lab Manual for Beverages, Sugar & Confectionery products,2015,C7	0.1 % to 50 %
		Crude fibre	IS 12711-1989 (RA 2015)	0.1 % to 50 %
		Acid insoluble ash	FSSAI Lab Manual for Beverages, Sugar & Confectionery products,2015,C6	0.01 % to 25 %
		Ash sulphated	FSSAI Lab Manual for Beverages, Sugar & Confectionery products,2015,A3	0.1 % to 25 %
2.	Cereals and Cereal Products (Wheat, rice, atta,	Moisture	FSSAI Lab Manual for Cereals and Cereal Products,2016,2.0	1 % to 25 %
	maida,suji,rava,	Acid insoluble ash	IS 1155:1968(RA 2015)	0.01 % to 10 %
	oats, rice powder, food grains,lentils, pulses,semolina,	Alcoholic Acidity	FSSAI Lab Manual for Cereals and Cereal Products,2016,8.5	0.01 % to 10 %
	besan,cornflour, macroni, corn flakes, bakery	Total protein	FSSAI Lab Manual for Cereals and Cereal Products,2016,8.7	1 % to 30 %
	products)	Gluten(on dry weight basis)	FSSAI Lab Manual for Cereals and Cereal Products,2016,8.4	1% to 30 %
		Total Ash	FSSAI Lab Manual for Cereals and Cereal Products,2016,8.2	0.1 % to 10 %

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		Crude fibre	FSSAI Lab Manual for Cereals and Cereal Products,2016,8.8	0.01 % to 50 %
		Foreign matter	FSSAI Lab Manual for Cereals and Cereal Products,2016,1.2	0.1 % to 25%
		Extraneous matter (Refractions Other than Foreign Matter)	FSSAI Lab Manual for Cereals and Cereal Products,2016,1.4	0.1 % to 25 %
3.	Edible oil, Edible fat(Coconut oil,	Saponification value	IS 548 Part 1:1964 (RA 2015)	10 to 350
	sesame oil, olive oil, sunflower oil, mustard oil, palm oil, olive oil,	Acid value	FSSAI Lab Manual for oil and fat,2016,11.0, IS 548 Part 1:1964 (RA 2015)	0.25 mg KOH/g to 10.0 mg KOH/g
	palmolein, groundnut oil, gingely oil, fish oil,rice bran oil,	Moisture and volatile matter	FSSAI Lab Manual for oil and fat,2016,3.0, IS 548 Part 1:1964 (RA 2015)	0.1 % to 4 %
	ghee)	Free fatty acids as oleic acid	FSSAI Lab Manual for oil and fat, 2016,11.8, IS 548 Part 1:1964 (RA 2015)	0.05 % to 95%
		Peroxide value	FSSAI Lab Manual for oil and fat,2016,38.1, IS 548 Part 1:1964 (RA 2015)	0.1meq/kg to 25meq/kg
		Test for Sesame Oil (Baudouins Test)	FSSAI Lab Manual for oil and fat, 2016,15.0	Present/Absent
		Test for mineral oil	IS 548 Part 2:1976 (RA 2015)	Present/Absent

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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
		lodine Value	FSSAI Lab Manual for oil and fat, 2016,12.0	1 to 500
4.	Fish and Fish products	Moisture (Dry fish)	IS 5960(Part 5):2001, (RA 2013) IS 14950:2001, (RA 2013)	1 % to 25 %
		Total fat	IS 5960(Part 3):2016, FSSAI Manual for meat and fish products 2016, 2.1	0.1 % to 25 %
		Total Ash (Dry fish)	IS 5960(Part2):2000, (RA 2013)	0.1 % to 25 %
		Ash insoluble in dilute HCl	FSSAI Manual for meat and fish products 2016, 2.4	0.1 % to 10 %
		Protein	FSSAI Manual for meat and fish products 2016, 2.2	1 % to 40 %
		Sodium Chloride (Dry fish)	FSSAI Manual for meat and fish products 2016, 2.4	0.1 % to 25 %
5.	Fruits and Vegetables and their products (Sauces, ketchup,	Acidity (as citric acid, oleic acid,	FSSAI Lab Manual for Fruits and Vegetable products,2016,2.4	0.1 % to 15 %
	puree, soup, pulp, paste, drinks,			
	jam, jelly, sharbats, squashes, syrups, juices, nectars,		FSSAI Lab Manual for Fruits and Vegetable products,2016,1.7	1 % to 20 %
	beverages, curries, nuts, pickles, ready		FSSAI Lab Manual for Food additives,2016,2.1.2	10 mg/kg to 1000 mg/kg
	to eat fruits & vegetables, processed and canned fruits & vegetables)	Moisture content	FSSAI Lab Manual for Fruits and Vegetable products,2016,4.1	1 % to 95 %

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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
		Container fill	FSSAI Lab Manual for Fruits and Vegetable products,2016,1.3	10 % to 99%
		Total soluble solids	FSSAI Lab Manual for Fruits and Vegetable products,2016,2.2	0.1% to 50 %
		pH	FSSAI Lab Manual for Fruits and Vegetable products,2016, 2.3	1 to14
		Fruit content (Orange Juice)	FSSAI Lab Manual for Fruits and Vegetable products,2016, 2.11	1% to 90%
		Total ash	FSSAI Lab Manual for Fruits and Vegetable products,2016,5.3	0.05 % to 40 %
		Ash insoluble in HCl	FSSAI Lab Manual for Fruits and Vegetable products,2016,5.3	0.01 % to 25 %
6.	Herbs, Spices &	Moisture	IS 1797:2017	1 % to 25 %
	condiments	Total Ash	IS 1797:2017	1 % to 25 %
	(Chilli, pepper,	Crude fibre	IS 1797:2017	1 % to 40 %
	turmeric, mustard, coriander, cumin, fennel, nutmeg,	Extraneous matter	FSSAI Lab Manual for Spices and Condiments, 2016, 2.0	0.01 % to 50%
	cardamom, curry powders, mace, cinnamon, clove,	Alcohol soluble extract	FSSAI Lab Manual for Spices and Condiments, 2016, 7.0	1 % to 50 %
	ginger,ajowan,	Total nitrogen/protein	IS 7219-1973 (RA 2015)	0.1 % to 50 %
	mixed masala)	Cold water-soluble extract	FSSAI Lab Manual for Spices and Condiments, 2016, 6.0	1% to 80 %

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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
		Nonvolatile ether extract	FSSAI Lab Manual for Spices and Condiments, 2016, 9.0	0.1 % to 50 %
		Volatile oil content	FSSAI Lab Manual for Spices and Condiments, 2016, 10.0	0.1 % to 50 %
		Ash insoluble in dil. HCl	FSSAI Lab Manual for Spices and Condiments, 2016, 5.0	0.1 % to 20 %
7.	Honey	Specific gravity	FSSAI Lab Manual for Sugar and Sugar products, 2015, 6.3	0.5 to 5
		Moisture	FSSAI Lab Manual for Sugar and Sugar products, 2015, 6.2	13 % to 25 %
		Ash	FSSAI Lab Manual for Sugar and Sugar products, 2015, 6.7	0.05 % to 50 %
		Acidity	FSSAI Lab Manual for Sugar and Sugar products, 2015, 6.8	0.05 % to 50 %
8.	Milk and dairy products (Milk, Cream, Milk	Protein	IS 7219-1973, (RA 2015), FSSAI Lab Manual for milk, 2016, 10.6	1 % to 50 %
	powder, curd, Ice cream,	Total ash	FSSAI Lab Manualfor milk, 2016, 10.7	0.1 % to 25 %
	evaporated/ condensed milk,	Ash insoluble in HCl	FSSAILab Manualfor milk, 2016, 10.8	0.01 % to 5 %
	Processed milk, Dairy based	Titrable acidity as Lactic acid	FSSAILab Manualfor milk, 2016, 10.4	0.01 % to 25 %
	dessert/ confections, paneer, yoghurt,	Fat	FSSAILab Manualfor milk, 2016, 1.3.4.2	0.1 % to 70 %

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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
	butter, cheese, infant milk food,	Total solids	FSSAILab Manualfor milk, 2016, 1.3.3	0.1 % to 50 %
	dried ice cream mix)	Milk Solids not fat	FSSAILab Manualfor milk, 2016, 1.3.3	0.1 % to 50 %
		Moisture	FSSAILab Manualfor milk, 2016, 10.2	0.1 % to 100 %
		Solubility %	FSSAILab Manualfor milk, 2016, 10.11	0.05 % to 100 %
		Solubility index	FSSAILab Manualfor milk, 2016, 10.10	0.1 ml to 3 ml
		Wt/Vol (ice cream)	FSSAILab Manualfor milk, 2016, 7.3	1 g/l to 5000 g/l
		Percentage of overrun (icecream)	FSSAILab Manual for milk, 2016, 7.3	100 % to 800%
		Sucrose	FSSAILab Manual for milk, 2016, 9.4	0.1 % to 95%
		Adulterants (Boric acid, Detergent, Hydrogen peroxide, urea,starch,neutralizer,M Q1,MQ2)	FSSAILab Manual for milk, 2016	Qualitative
9.	Meat and Meat products	Total Fat	IS 5960(Part 3) 2016, FSSAI Manual for meat and fish products 2016, 2.1	1 % to 35 %
		Total Protein	FSSAI Manual for meat and fish products 2016, 2.2	1 % to 35 %
		рН	FSSAI Manual for meat and fish products 2016, 3.1	2 to 9
10.	Vinegar	Acidity as acetic acid	FSSAI Lab Manual for Fruits and Vegetable products,2016,14.5	0.1 % to 15 %

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		Total solids	FSSAI Lab Manual for Fruits and Vegetable products,2016,14.3	1 % to 20 %
		Total ash	FSSAI Lab Manual for Fruits and Vegetable products,2016,14.4	0.1 % to 20 %
		Mineral Acid	FSSAI Lab Manual for Fruits and Vegetable products,2016,14.6	Present/Absent
II.	RESIDUE IN FOOD	PRODUCTS		
1.	Metals in Food products (Spices & condiments)	Copper as Cu	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
		Lead as Pb	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
		Zinc as Zn	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
		Cadmium as Cd	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.05mg/kg to 50 mg/kg
		Chromium as Cr	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
		Nickel as Ni	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
		Iron as Fe	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg

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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
		Arsenic as As	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.05mg/kg to 50 mg/kg
		Tin as Sn	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
2.	Metals in Food products (Fruits and Vegetables	Copper as Cu	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
	and their products)	Lead as Pb	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
		Zinc as Zn	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
		Cadmium as Cd	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.05mg/kg to 50 mg/kg
		Chromium as Cr	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
		Nickel as Ni	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
		Iron as Fe	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
		Arsenic as As	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.05mg/kg to 50 mg/kg
		Tin as Sn	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg

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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
3.	Metals in Food products (Cereals andCereal	Copper as Cu	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
	Products)	Lead as Pb	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
		Zinc as Zn	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
		Cadmium as Cd	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.05mg/kg to 50 mg/kg
		Chromium as Cr	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
		Nickel as Ni	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.1mg/kg to 50 mg/kg
		Iron as Fe	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
		Arsenic as As	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	0.05mg/kg to 50 mg/kg
		Tin as Sn	FSSAI Manual of methods of analysis of Foods- Metals, 2016, 3.1	1mg/kg to 50 mg/kg
4.	Pesticide Residues in Food products (Spices	p,p DDT	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	
	& condiments)	p,p DDE	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg

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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
		p,p DDD	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Endosulfan α	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Endosulfanβ	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Endosulfan Sulphate	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Gamma HCH (Lindane)	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Alpha HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Beta HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Delta HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Aldrin	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Dieldrin	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Heptachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg

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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
		Alpha chlordane	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Gamma chlordane	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Monocrotophos	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Ethion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Chlorpyriphos	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Phorate	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Butachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Alachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Atrazine	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Methyl parathion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
}		Malathion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg

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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
5.	Pesticide Residues in Food products (Fruits	p,p DDT	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
	and Vegetables and theirproducts)	p,p DDE	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		p,p DDD	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Endosulfan α	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Endosulfanβ	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	
		Endosulfan Sulphate	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	
		Gamma HCH (Lindane)	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Alpha HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Beta HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Delta HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Aldrin	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg

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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
		Dieldrin	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Heptachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Alpha chlordane	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Gamma chlordane	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Monocrotophos	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Ethion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	
		Chlorpyriphos	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	
		Phorate	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Butachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Alachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Atrazine	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg

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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
		Methyl parathion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	
		Malathion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	
6.	Pesticide Residues in Food products (Cereals	p,p DDT	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	
	andCereal Products)	p,p DDE	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	
		p,p DDD	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	
		Endosulfan α	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	3 3 3 3
		Endosulfanβ	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	3 3 3 3
		Endosulfan Sulphate	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Gamma HCH (Lindane)	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Alpha HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Beta HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg

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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
		Delta HCH	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
 		Aldrin	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Dieldrin	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Heptachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Alpha chlordane	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Gamma chlordane	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 7.0	0.01mg/kg to 1000 mg/kg
		Monocrotophos	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Ethion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Chlorpyriphos	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
h		Phorate	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Butachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg

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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
		Alachlor	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Atrazine	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Methyl parathion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
		Malathion	FSSAI Manual of methods of analysis of Foods-Pesticide Residues, 2015, 8.0	0.01mg/kg to 1000 mg/kg
III.	POLLUTION & ENVI	RONMENT		
1.	Waste Water (Effluents/Sewage), Treated waste	Colour	Cl. 2 of IS 3025 (Part 4)- 1983,(RA 2017) (Visual method)	1 Hazen Unit to 500Hazen Unit
	water	Odour	IS 3025 (Part 5)-1983, Reaff. 2012	Agreeable/Disagreeable
		рН	Cl. 2 of IS 3025 (Part 11)- 1983,(RA 2017)	1 to 14
		Phenolic Compounds as C6H5OH	Cl. 6 of IS 3025 (Part 43)- 1992, (RA 2014)	0.0005mg/l to 5.0 mg/l
		Nitrate as NO3	Cl. 3 of IS 3025(Part 34)- 1988,(RA 2014)	0.1mg/l to 100 mg/l
		Chloride as Cl	Cl. 2 of IS 3025(Part 32)- 1988,(RA 2014)	0.5mg/l to 1000 mg/l
		Fluoride as F	Cl. 5 of IS 3025 (Part 60)- 2008, (RA 2013)	0.2mg/l to 5 mg/l
		Sulphate as SO4	Cl. 4 of IS 3025(Part 24)- 1986,(RA 2014)	1.0 mg/l to 500 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
		Cyanide as CN	Cl. 2 of IS 3025 (Part 27)- 1986, (RA 2014)	0.005mg/l to 2 mg/l
		Residual Chlorine	IS 3025 (Part 26)-1986, (RA 2014)	0.1mg/l to 10.0 mg/l
		Total Dissolved Solids	IS 3025(Part 16)-1984, (RA 2017)	2mg/l to 10000 mg/l
		Nitrite as NO2	Cl. 4 of IS 3025 (Part 34)- 1988, (RA 2014)	0.01mg/l to 50.0 mg/l
		Sodium as Na	Cl. 5 of IS 3025 (Part 45)- 1993, (RA 2014)	1mg/l to 500 mg/l
		Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44)-1993, (RA 2014)	1mg/l to 5000 mg/l
		Chemical Oxygen Demand	IS 3025 (Part 58)-2006, (RA 2017)	4mg/l to 20000 mg/l
		Oil & Grease	Cl. 5 of IS 3025 (Part 39)- 1991, (RA 2014)	0.05mg/l to 200 mg/l
		Total Suspended Solids	IS 3025 (Part 17)-1984, (RA 2017)	2mg/l to 1000 mg/l
		Hexavalent chromium as Cr <sup>6+</sup>	Cl. 6 of IS 3025 (Part 52)- 2003, (RA 2014)	0.03mg/l to 10.0 mg/l
		Oxygen absorbed in 4 hours at 27°C	IS 3025 (Part 63)-2007, (RA 2013)	0.5mg/l to 10.0 mg/l
		Anionic detergents (as MBAS)	IS 13428-2005 Annex-K, (RA 2014)	0.1mg/l to 1.0 mg/l
		Total Kjeldhal Nitrogen as N	Cl. 5.2 of IS 3025 (Part 34)- 1988,(RA 2014)	1mg/l to 500 mg/l
		Ammonia (as total ammonia-N)	Cl. 2.3 of IS 3025 (Part 34)- 1988,(RA 2014)	0.1mg/l to 500 mg/l
		Phosphorus as P	Cl. 4 of IS 3025 (Part 31)- 1988, (RA 2014)	0.05mg/l to 100 mg/l
		Benzo(a) pyrene	USEPA 8270 C-1996	0.1 μg/l to 100 μg/l
<u> </u>		Benzene	USEPA 8260 B-1996	10 μg/l to 500 μg/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
		Silica as SiO2	Cl. 3 of IS 3025 (Part 35)- 1988, (RA 2014)	0.4 mg/l to 500 mg/l
		Conductivity	IS 3025 (Part 14)-2013	1 μS/cm to 200 mS/cm
		Dissolved oxygen	Cl. 4.1 & 4.2 of IS 3025 (Part 38)-1989, (RA 2014)	1 mg/l to 10 mg/l
		Sulphide as S	Cl. 3 of IS 3025 (Part 29)- 1986, (RA 2014)	0.02mg/l to 20 mg/l
		Total Solids	IS 3025 (Part 15)-1984, (RA 2014)	2mg/l to 10000 mg/l
		Aluminium as Al	Cl. 5 of IS 3025 (Part 55)- 2003, (RA 2014)	0.02mg/l to 5.0mg/l
		Iron as Fe	Cl. 6 of IS 3025 (Part 53)- 2003, (RA 2014)	0.02mg/l to 10.0 mg/l
		Magnesium as Mg	Cl. 6 of IS 3025(Part 46)- 1994,(RA 2014)	0.5mg/l to 200 mg/l
		Calcium as Ca	Cl. 5 of IS 3025(Part 40)- 1991, (RA 2014)	0.5mg/l to 500 mg/l
		Trace metal elements		
		Selenium as Se	Cl. 7 of IS 3025(Part 56)- 2003, (RA 2014)	0.005mg/l to 5.0 mg/l
		Nickel as Ni	IS 3025 (Part 2)-2004, (RA 2014)	0.01mg/l to 5.0 mg/l
		Silver as Ag	IS 3025 (Part 2)-2004, (RA 2014)	0.05mg/l to 5.0 mg/l
		Manganese as Mn	IS 3025 (Part 2)-2004, (RA 2014)	0.05mg/l to 5.0 mg/l
		Copper as Cu	Cl. 6 of IS 3025(Part 42)- 1992,(RA 2014) IS 3025 (Part 2)-2004, (RA 2014)	0.01mg/l to 10.0 mg/l
		Zinc as Zn	Cl. 5 ofIS 3025 (Part 49)- 1994, (RA 2014) IS 3025 (Part 2)-2004, (RA 2014)	0.05mg/l to 50 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
		Cadmium as Cd	IS 3025 (Part 2)-2004, (RA 2014)	0.001mg/l to 5.0 mg/l
		Vanadium as V	IS 3025 (Part 2)-2004, (RA 2014)	0.02mg/l to 1 mg/l
		Mercury as Hg	Cl. 5 of IS 3025 (Part 48)- 1994, (RA 2014)	0.0005mg/l to 5.0 mg/l
		Lead as Pb	IS 3025 (Part 2)-2004, (RA 2014)	0.005mg/l to 5.0 mg/l
		Total Chromium as Cr	IS 3025 (Part 2)-2004, (RA 2014)	0.01mg/l to 5.0 mg/l
		Arsenic as As	Cl. 2 of IS 3025(Part 37)- 1988, (RA 2014)	0.005mg/l to 5.0 mg/l
3.	Soil/Sediments	Copper Lead	USEPA 3050B-1996 & 7000A-1992	5mg/kg to 1000 mg/kg
		Zinc Cadmium		
		Chromium Manganese Nickel		
<u> </u>		Iron		
4.	Wastes (Liquid/	Copper	USEPA 3050B-1996 &	5 mg/kg to 1000 mg/kg
	Slurry/Sludge/	Lead	7000A-1992	
	Solid/Semi-Solid)	Zinc	_	
ļ		Cadmium		
		Chromium		
		Manganese		
	<u> </u>	Nickel		
		Iron		

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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
IV.	WATER			
1.	Surface Water, Ground Water, Drinking Water,	Colour	Cl. 2 of IS 3025 (Part 4)- 1983,(RA 2017) (Visual method)	1 Hazen Unit to 500Hazen Unit
	Well water, Packaged	Odour	IS 3025 (Part 5)-1983, Reaff. 2012	Agreeable/Disagreeable
	drinking water, Natural mineral	Taste	IS 3025 (Part 8)-1984, (RA 2017)	Agreeable/Disagreeable
	water, Construction	рН	Cl. 2 of IS 3025 (Part 11)- 1983, (RA 2017)	1 to 14
	Water, Swimming Pool Water, Water	Turbidity	IS 3025 (Part 10)-1984, (RA 2017)	0.5 NTU to 500 NTU
	for Processed Food Industry,	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	Cl. 6 of IS 3025 (Part 43)- 1992, (RA 2014)	0.0005mg/l to 5.0 mg/l
	Raw/treated water, Water for	Nitrate as NO₃	Cl. 3 of IS 3025(Part 34)- 1988,(RA 2014)	0.1mg/l to 100 mg/l
	Ice	Chloride as Cl	Cl. 2 of IS 3025(Part 32)- 1988,(RA 2014)	0.5mg/l to 2000 mg/l
		Fluoride as F	Cl. 5 of IS 3025 (Part 60)- 2008, (RA 2013)	0.2mg/l to 5.0 mg/l
		Sulphate as SO <sub>4</sub>	Cl. 4 of IS 3025(Part 24)- 1986,(RA 2014)	1.0mg/l to 500 mg/l
		Cyanide as CN	Cl. 2 of IS 3025 (Part 27)- 1986, (RA 2014)	0.005mg/l to 2.0 mg/l
		Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44)-1993, (RA 2014)	1mg/l to 500 mg/l
		Chemical Oxygen Demand	IS 3025 (Part 58)-2006, (RA 2017)	4mg/l to 1000 mg/l
		Oil & Grease	Cl. 5 of IS 3025 (Part 39)- 1991, (RA 2014)	0.05mg/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
		Total Kjeldahl Nitrogen as N	Cl. 5.2 of IS 3025 (Part 34)- 1988,(RA 2014)	1mg/l to 100 mg/l
		Ammonia (as total ammonia-N)	Cl. 2.3 of IS 3025 (Part 34)- 1988,(RA 2014)	0.1mg/l to 100 mg/l
		Phosphorus as P	Cl. 4 of IS 3025 (Part 31)- 1988, (RA 2014)	0.05mg/l to 50 mg/l
		Residual Chlorine	IS 3025 (Part 26)-1986, (RA 2014)	0.1mg/l to 10.0 mg/l
		Total Dissolved Solids	IS 3025(Part 16)-1984, (RA 2017)	2mg/l to 10000 mg/l
		Silica as SiO2	Cl. 3 of IS 3025 (Part 35)- 1988, (RA 2014)	0.4mg/l to 100 mg/l
<u> </u>		Conductivity	IS 3025 (Part 14)-2013	1 μS/cm to 200 mS/cm
		Dissolved oxygen	Cl. 4.1 & 4.2 of IS 3025 (Part 38)-1989, (RA 2014)	1mg/l to 10 mg/l
		Aluminium as Al	Cl. 5 of IS 3025 (Part 55)- 2003, (RA 2014)	0.02mg/l to 5.0mg/l
		Iron as Fe	Cl. 6 of IS 3025 (Part 53)- 2003, (RA 2014)	0.02mg/l to 10.0mg/l
		Magnesium as Mg	Cl. 6 of IS 3025(Part 46)- 1994,(RA 2014)	0.5mg/l to 200 mg/l
		Calcium as Ca	Cl. 5 of IS 3025(Part 40)- 1991, (RA 2014)	0.5mg/l to 500 mg/l
		Total Solids/Residue on evaporation	IS 3025 (Part 15)-1984, (RA 2014)	2mg/l to 10000 mg/l
		Total Hardness as CaCO3	Cl. 5 of IS 3025 (Part 21)- 2009, (RA 2014)	2mg/l to 500 mg/l as CaCO3
		Hexavalent chromium as Cr <sup>6+</sup>	Cl. 6 of IS 3025 (Part 52)- 2003, (RA 2014)	0.03mg/l to 10.0 mg/l
		Mineral oil	Cl. 6 of IS 3025(Part 39)- 1991, (RA 2014)	0.05mg/l to 10.0mg/l
		Anionic detergents (as MBAS)	IS 13428-2005 Annex-K, (RA 2014)	0.1mg/l to 1.0 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
		Acidity as CaCO3	Cl. 8.1 of IS 3025 (Part 22)- 1986,(RA 2014)	1mg/l to 200 mg/l
		Benzo(a) pyrene	USEPA 8270 C-1996	0.1μg/l to 10 μg/l
i		Benzene	USEPA 8260 B-1996	10μg/l to 100 μg/l
		Oxygen absorbed in 4 hours at 27°C	IS 3025 (Part 63)-2007, (RA 2013)	0.5mg/l to 10.0 mg/l
		Heavy metals (as Pb)	Cl. 7 of IS 3025(Part 47)- 1994, (RA 2014)	0.05mg/l to 5.0 mg/l
		Chloramines as Cl2	IS 3025 (Part 26)-1986, (RA 2014)	0.1mg/l to 100 mg/l
		Bromoform	ASTM D 3973-85, (RA 2003)	0.05mg/l to 10 mg/l
		Dibromochloromethane	ASTM D 3973-85, (RA 2003)	0.05mg/l to 10 mg/l
		Bromodichloromethane	ASTM D 3973-85, (RA 2003)	0.05mg/l to 10 mg/l
		Chloroform	ASTM D 3973-85, (RA 2003)	0.05mg/l to 10 mg/l
		Inorganic Solids	IS 3025 (Part 18)-1984, (RA 2017)	5mg/l to 10000 mg/l
		Organic Solids	IS 3025 (Part 18)-1984, (RA 2017)	5mg/l to 1000 mg/l
		Total Suspended Solids	IS 3025 (Part 17)-1984, (RA 2017)	2mg/l to 1000 mg/l
		Sulphide as S	Cl. 3 of IS 3025 (Part 29)- 1986, (RA 2014)	0.02mg/l to 10 mg/l
		Temperature	USEPA 170.1	1°C to 100 °C
		Salinity	USEPA 842-B-06-003	1mg/l to 10000 mg/l
		Silt density index	ASTM D 4189-95, (RA 2002)	1 to 50
		Free/Dissolved Carbon Dioxide	IS 3025 (Pt 61) 2008	2mg/l to 1000 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
		Total Organic Carbon	USEPA NCEA-C-1282	0.5mg/l to 1000 mg/l
		Alkalinity as CaCO3	Cl. 8.1 of IS 3025(Part 23)- 1986,(RA 2014)	1mg/l to 500 mg/l
		Nitrite as NO2	Cl. 4 of IS 3025 (Part 34)- 1988, (RA 2014)	0.01mg/l to 10 mg/l
		Sodium as Na	Cl. 5 of IS 3025 (Part 45)- 1993, (RA 2014)	1mg/l to 500 mg/l
٧.	RESIDUE IN WATER	Ř		
1.	Surface Water, Ground Water,	Poly nuclear Aromatic Hydrocarbons		
	Well water,	2-Methylnaphthalene	USEPA 8270-1996	0.1μg/l to 1000 μg/l
	Drinking Water,	Acenaphthylene		0.1μg/l to 1000 μg/l
	Packaged	Acenaphthene		0.1μg/l to 1000 μg/l
	drinking water,	Fluorene		0.1μg/l to 1000 μg/l
	Raw/treated water	Anthracene		0.1μg/l to 1000 μg/l
		Pyrene		0.1μg/l to 1000 μg/l
		Benzo(a)anthracene		0.1μg/l to 1000 μg/l
		Chrysene		0.1μg/l to 1000 μg/l
		Benzo(k)fluranthene		0.1μg/l to 1000 μg/l
		Benzo(b)fluranthene		0.1μg/l to 1000 μg/l
		Benzo(a)pyrene		0.1μg/l to 1000 μg/l
		Poly chlorinated		
		biphenyls (PCBs)		
		2,2',5-Trichlorobiphenyl	USEPA 8082-1996	0.1 μg/l to 1000 μg/l
		2,4,4'-Trichlorobiphenyl	(8270-1996)	0.1 μg/l to 1000 μg/l
		2,4',5-Trichlorobiphenyl		0.1μg/l to 1000 μg/l
		2,2',5,5'-		0.1μg/l to 1000 μg/l
		Tetrachlorobiphenyl		
		2,3',4,4',5'-		0.1μg/l to 1000 μg/l
<u> </u>	<u> </u>	Pentachlorobipheny		

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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
[		2,2',3,4',5',6-		0.1µg/l to 1000 µg/l
		Hexachlorobiphen		
[		Pesticide Residues		
		o,p DDT	USEPA 508-1995	0.01 μg/l to 1000 μg/l
		o,p DDE	(8270-1996)	0.01 μg/l to 1000 μg/l
		o,p DDD		0.01μg/l to 1000 μg/l
		p,p DDT		0.01μg/l to 1000 μg/l
		p,p DDE		0.01μg/l to 1000 μg/l
		p,p DDD		0.01μg/l to 1000 μg/l
		Gamma HCH (Lindane)		0.01μg/l to 1000 μg/l
		Alpha HCH		0.01μg/l to 1000 μg/l
		BetaHCH	USEPA 508-1995	0.01 μg/l to 1000 μg/l
		Delta HCH	(8270-1996)	0.01 μg/l to 1000 μg/l
		Endosulfan Alpha		0.01μg/l to 1000 μg/l
		EndosulfanBeta		0.01μg/l to 1000 μg/l
		Endosulfan Sulphate		0.01μg/l to 1000 μg/l
		Aldrin		0.01μg/l to 1000 μg/l
		Dieldrin		0.01μg/l to 1000 μg/l
		2,4-	USEPA515.1 (8321B)	1μg/l to 1000 μg/l
		Dichlorophenoxyacetic	, , ,	
İ		acid		
<u> </u>		Isoproturon	USEPA 532	1μg/l to 1000 μg/l
İ		Monocrotophos	USEPA8141A (8270)	0.1μg/l to 1000 μg/l
		Ethion	USEPA1657A (8270)	0.1μg/l to 1000 μg/l
		Phorate	USEPA8141A (8270)	0.1μg/l to 1000 μg/l
		Chlorpyriphos	USEPA 525.2,8141A	0.1μg/l to 1000 μg/l
<u> </u>		<u> </u>	(8270)	
		Butachlor	USEPA525.2,8141A (8270)	0.1µg/l to 1000 µg/l
		Alachlor	USEPA 525.2, ,8141A (8270)	0.1μg/l to 1000 μg/l
		Atrazine	USEPA 525.2, ,8141A (8270)	0.1μg/l to 1000 μg/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
[		Methyl parathion	USEPA 8141A (8270)	0.1μg/l to 1000 μg/l
		Malathion	USEPA 8141A (8270)	0.1μg/l to 1000 μg/l
2.	Surface Water,	Trace metal elements		
	Ground Water, Well water, Drinking Water, Packaged	Copper as Cu	Cl. 6 of IS 3025(Part 42)- 1992, (RA 2014) IS 3025 (Part 2)-2004, (RA 2014)	0.01 mg/l to 10.0 mg/l
	drinking water, Swimming Pool Water,	Zinc as Zn	Cl. 5 ofIS 3025 (Part 49)- 1994, (RA 2014) IS 3025 (Part 2)-2004, (RA 2014)	0.05mg/l to 50 mg/l
	Water for Processed	Cadmium as Cd	IS 3025 (Part 2)-2004, (RA 2014)	0.001mg/l to 5.0 mg/l
	Food Industry, Raw/treated	Mercury as Hg	Cl. 5 of IS 3025 (Part 48)- 1994, (RA 2014)	0.0005mg/l to 5.0 mg/l
	water, Water for Ice	Lead as Pb	IS 3025 (Part 2)-2004, (RA 2014)	0.008mg/l to 5.0 mg/l
		Total Chromium as Cr	IS 3025 (Part 2)-2004, (RA 2014)	0.01mg/l to 5.0 mg/l
		Arsenic as As	Cl. 2 of IS 3025(Part 37)- 1988, (RA 2014)	0.005mg/l to 5.0 mg/l
		Selenium as Se	Cl. 7 of IS 3025(Part 56)- 2003, (RA 2014)	0.005mg/l to 5.0 mg/l
		Nickel as Ni	IS 3025 (Part 2)-2004, (RA 2014)	0.01mg/l to 5.0 mg/l
		Silver as Ag	IS 3025 (Part 2)-2004, (RA 2014)	0.05mg/l to 5.0 mg/l
		Boron as B	IS 3025 (Part 2)-2004, (RA 2014)	0.05mg/l to 5.0mg/l
		Barium as Ba	IS 3025 (Part 2)-2004, (RA 2014)	0.02mg/l to 5.0mg/l
		Vanadium as V	IS 3025 (Part 2)-2004, (RA 2014)	0.02mg/l to 1 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
		Manganese as Mn	IS 3025 (Part 2)-2004, (RA 2014)	0.05mg/l to 5.0 mg/l
		Molybdenum as Mo	IS 3025 (Part 2)-2004, (RA 2014)	0.005mg/l to 5.0 mg/l