Industrial Area, New Delhi

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SI.	Product / Material of Test	Specific Test Performed	Test Method Specification	Range of Testing / Limits of Detection
	0000		performed	

BIOLOGICAL TESTING

I.	FOOD & AGRICULTURAL PRODUCTS			
1.	Bakery & Confectionery	Total Bacterial count/Total Plate Count	IS 5402	≥ 10 cfu / g
	Products	Yeast & Mould Count	IS 5403	≥ 10 cfu / g
		Escherichia coli	IS 5887 (Part-1)	Qualitative Present/Absent/gm
		Coliform Count	IS 5401 (Part- 1)	≥ 10 cfu / g
			IS 5401 (Part-2)	Qualitative (Present or Absent) /x g
		Staphylococcus aureus	IS 5887 (Part- 2)	Qualitative Present/Absent/gm
2.	Canned &	Total Bacterial Count	IS 5402	≥ 10 cfu/gm
	Processed foods	Coliform	IS 5401 (Part- 1) IS 5401 (Part-2)	≥ 10 cfu / g
		Yeast & Mould Count	IS 5403	≥ 10 cfu/gm
		Escherichia coli	IS 5887 (Part-1)	Qualitative Present/Absent/gm
3.	Beverages (Alcoholic / Non-	Escherichia coli	IS 5887 (Part-1)	Qualitative Present/Absent/gm
	Alcoholic)	Total Bacterial Count	IS 5402	≥1 cfu/ml
		Coliform Count	IS 5401 (Part- 1)	≥10cfu/ml ≥ 1 cfu/ml
		Yeast & Mould Count	IS 5403	≥10cfu/ml ≥ 1 cfu/ml
		Staphylococcus aureus	IS 5887 (Part- 2)	≥10cfu/ml ≥ 1 cfu/ml
4.	Cereals, pulses &	Aerobic Plate Count	IS 5402	≥ 10 cfu /gm
	Cereal Products	Coliform Count	IS 5401 (Part- 1)	≥10 cfu/gm
			IS 5401 (Part-2)	Qualitative (Present or Absent) /x g
		Yeast & mould Count	IS 5403	≥ 10 cfu/gm
		Escherichia coli	IS 5887 (Part-1)	Qualitative Present/Absent/gm

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		Staphylococcus aureus	IS 5887 (Part- 2)	≥ 10 cfu / g Qualitative (Present or Absent) / g
5.	Milk & Dairy Products	Total Bacterial count	IS 5402	≥ 10cfu/gm/ml/ ≥ 1 cfu/gm/ml
		Coliform Count	IS 5401 (Part- 1)	≥ 10 cfu/g ≥ 1 cfu/ml
			IS 5401 (Part-2)	Qualitative (Present or Absent) /x g
		Yeast & Mould Count	IS 5403	≥ 10cfu/gm/ml/ ≥ 1 cfu /gm/ml
		E. coli	IS 5887 (Part-1)	Qualitative Present/Absent/ gm/ml
		Staphylococcus aureus	IS 5887 (Part- 2)	≥ 10 cfu / g Qualitative Present/Absent/ gm/ml
6.	Meat& Meat	Total Plate Count	IS 5402	≥ 10 cfu/gm
	Products	E. coli	IS 5887 (Part-1)	Qualitative Present/Absent/ gm
		Staphylococcus aureus	IS 5887 (Part- 2)	≥ 10 cfu / g Qualitative Present/Ab/ gm
		Yeast & Mould Count	IS 5403	≥ 10 cfu/gm
7.	Fruits &	Total Plate Count	IS 5402	≥ 10 cfu/gm/ml
	Vegetables	Coliform Count	IS 5401 (Part- 1)	≥ 10 cfu/gm/ml
	Products		IS 5401 (Part-2)	Qualitative (Present or Absent) /x g
		Yeast & Mould	IS 5403	≥ 10 cfu/gm/ml
		Staphylococcus aureus	IS 5887 (Part- 2)	≥ 10 cfu / g/ml
				Qualitative Present/Absent/ gm/ml
		E. coli	IS 5887 (Part-1)	Qualitative Present/Absent/ gm/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
II.	WATER			
1.	Packaged Drinking Water (Other than	Aerobic Microbial count (at 37 °C)	IS 5402	≥ 1 cfu / ml
	Natur al Mineral Water)	Aerobic Microbial count (at 22 °C)	IS 5402	≥ 1 cfu / ml
		Coliform Bacteria	IS 5401 (Part- 1) IS 15185	Qualitative (Present /Absent)/250 ml
		E.coli	IS 5887 (Part -1) IS 15185	Qualitative (Present /Absent)/ 250 ml
		Faecal Streptococci / Enterococci	IS 5887 (Part -2) IS 15185	Qualitative (Present /Absent)/ 250 ml
		Staphylococcus aureus	IS 5887 (Part -2) IS 15185	Qualitative (Present /Absent)/ 250 ml
		Pseudomonas aeruginosa	IS 13428	Qualitative (Present /Absent)/ 250 ml
		Yeast and Mould	IS 5403	Qualitative (Present /Absent)/ 250 ml
2.	Packaged Natural Mineral Water	Coliform Bacteria	IS 5401 (Part -1) IS 15185	Qualitative (Present /Absent)/ 250 ml
		E.coli	IS 5887 (Part 1) IS 15185	Qualitative (Present /Absent)/ 250 ml
		Faecal Streptococci/ Enterococci	IS 5887 (Part -2) IS 15186	Qualitative (Present /Absent)/ 250 ml
		Staphylococcus aureus	IS 5887 (Part -2)	Qualitative (Present /Absent)/ 250 ml
		Pseudomonas aeruginosa	IS 13428: 2005	Qualitative (Present /Absent)/ 250 ml
		Yeast and Mould	IS 5403	Qualitative (Present /Absent)/ 250 ml
3.	Water for Medicinal Purpose (Used for Dialysis)	Aerobic Plate Count / Standard Plate Count	IS 5402	≥1cfu / 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
		Coliform Bacteria	IS 1622 APHA (22 nd Edition) 9221 (B&C), Page No.9-66-69	(<2 MPN to 1600 MPN)/ 100 ml ≥1.8 MPN/100 ml Qualitative (Present/Absent)/100 ml
		E. coli	IS 1622	Qualitative (Present/Absent)/ 100 ml
		Faecal Coliform	IS 1622 APHA (22 nd Edition) 9221 (B&C), Page No.9-66-69)	Qualitative (Present/Absent)/ 100 ml (<2 MPN to 1600 MPN)/ 100 ml ≥1.8 MPN/100 ml
		Yeast & Mould	IS 5403	Qualitative (Present/Absent)/ ml/100 ml/250ml
4.	Water for	Lipolytic bacterial count	IS 4251	≥ 1 cfu/ml
	Processed Food	Proteolytic bacterial count	IS 4251	≥ 1 cfu/ml
	Industry	Thermophilic bacterial count	IS 4251	≥ 1 cfu/ml
		Slime Forming Bacteria	IS 1622	Qualitative (Present or Absent) /drop
5.	Water for industrial purpose	Total Coliform	IS 1622 APHA (22 nd Edition) 9221 (B&C), Page No.9-66-69.	(<2 MPN to 1600 MPN)/ 100 ml ≥1.8 MPN/100 ml
			IS 1622 APHA (22 nd Edition) 9221 (D), Page No.9-74.	Qualitative (Present/Absent)/100 ml
		Faecal coliform	IS 1622 APHA (22 nd Edition) 9221 (E), Page No.9-74	Qualitative (Present/Absent)/100 ml (<2 MPN to 1600 MPN)/ 100 ml ≥1.8 MPN/100 ml

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

Ashok Kumar	N. Venka	iteswaran
Convenor	Program	Director

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			performed	

CHEMICAL TESTING

I.	ATMOSPHERIC I	POLLUTION		
1.	Ambient Air	Particulate Matter (Size less than 10 µm) or PM10	IS 5182 (Part-23)	10 μg/m³ to 10000 μg/m³
		Particulate Matter (Size less than 2.5 µm) or PM _{2.5}	Gravimetric Method : CPCB Mannual Volume – 1,Page15	5.0 μg/m³ to 500 μg/m³
		Nitrogen Oxide (as NO ₂)	IS 5182 (Part-6) (Modified Jacob & Hochheiser Sodium Arsenite Method)	5.0 μg/m³ to 740 μg/m³
		Sulphur Dioxide (as SO ₂)	IS 5182 (Part-2) (Improved West & Gaeke Method)	5.0 μg/m³ to 1000 μg/m³
		Suspended Particulate Matter	IS 5182 (Part-4):	10.0 to 5000.0 μg/m ³
		Lead (as Pb)	IS 5182 (Part-22)	0.005 μg/m³ to 100 μg/m³
		Arsenic (As)	IS 5182 Part-22	2.0 ng/m ³ to 100 ng/m ³
		Ozone (as O ₃)	IS 5182 (Part-9):	20 μg/m ³ to 4000 μg/m ³
		Ammonia (as NH ₃)	CPCB Manual Volume – 1, Page -35	20 μg/ m³ to 100 μg/ m³
		Benzene	IS 5182(Part-11)	1.0 µg/m³ to 2000 µg/m³
		Benzo (α)Pyrine -(BaP) Particulate Phase only	IS 5182 (Part-12)	1.0 µg/m³ to 1000 µg/m³
		Volatile Organic Carbon (as Benzene)	IS 5182 (Part-11)	1.0 µg/m³ to 1000 µg/m³
		Carbon Monoxide (as CO)	IS 5182(Part-10)	2.0 mg/m ³ to 100.0 mg/m ³
		Total Hydrocarbon (as HC)	IS 5182(Part-17)	10 ppm to 1000 ppm

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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.	Stack Emission	Particulate Matter	IS 11255(Part-1)	10.0 mg/Nm ³ to 3000.0 mg/Nm ³
		Sulphur Dioxide	IS 11255 (Part-2)	5.0 mg/Nm to 1000 mg/Nm
		Oxides of Nitrogen	IS 11255 (Part-7)	2.0 mg/Nm to 500
		Carbon Dioxide	IS 13270 (ORSAT METHOD)	5.0% to 15.0%
		Carbon Monoxide	IS 13270 (ORSAT Method) USEPA (Part-10)	0.2% to 5.0% 10 mg/m ³ to 1000 mg/m ³
		Oxygen	IS 13270 (ORSAT Method)	10.0% - 20.0%
		Cadmium	AGSS/CHEM/SOP/ST-01	0.1 μg/m ³ to 100 μg/m ³
		Iron (as Fe)		0.1 μg/m ³ to 100 μg/m ³
		Nickel (as Ni)		0.1 μg/m ³ to 100 μg/m ³
		Zinc (as Zn)		0.1 μg/m ³ to 100 μg/m ³
	 	Inorganic Lead (as Pb)	USEPA (Part 12)	1.0 mg/m ³ to 50 mg/m ³
		Flowrate	IS 11255(Part3)	3 m/s to 30 m/s
		Hydrocarbon(AsHC)	IS 5182(Part17)	10 ppm to1000 ppm
		Hydrogen sulphide	IS 11255(Part4)	1 mg/Nm ³ to100 mg/Nm ³
		Ammonia	IS 11255(Part6)	5 mg/Nm³ to100 mg/Nm³
II.	POLLUTION & ENV	IRONMENT		J
1.	Liquid Effluent & Waste water	рН	APHA 4500-H ⁺ B, P-4-92, 22 nd Ed./ IS 3025(Part-11)	2.0 to 12 2.0 to 12
		Total Solids/Total Dissolved Solids	APHA 2540 B&C, P-2- 64,65, 22 nd Ed./ IS 3025 (Part-16)	5.0 mg/L to 20,000 mg/L 6.0 mg/L to 20,000mg/L
		Total Suspended Solids	APHA 2540 D., P-2-66, 22 nd Ed./ IS 3025(Part-17)	2.0± 20,000mg/L 3.0± 20,000mg/L

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		Phosphorous (as P) /	APHA 4500 –P., P-4-148,	0.1 mg/L to 100 mg/L 0.1
		phosphate (as PO ₄ ,P ₂ O ₅)	22 nd Ed./ IS 3025 (Part-31)	mg/L to 100 mg/L
		Potassium (as K)	APHA 3500-K B. P-3-87,	1.0 mg/L to 500 mg/L 0.5
			22 nd Ed./ IS 3025 (Part-45)	mg/L to 500mg/L
		Sodium (as Na)	APHA 3500-Na B. P-3-97, 22 nd Ed./ IS 3025 (Part-45)	1 mg/L to 2000 mg/L 0.5 mg/L to 2000 mg/L
		Bio chemical Oxygen	APHA 5210 B. P-5-5,22 nd	2.0 mg/L to 10,000 mg/L
		Demand (5 days at 20°C) (3 days at 27°C)	Ed. / IS 3025 (Part - 44)	5.0 mg/L to 10,000 mg/L
		Chemical Oxygen	APHA 5220 B. P-5-17, 22 nd	4.0 mg/L to 10,000 mg/L
		Demand (as O ₂)	Ed./ IS 3025 (Part - 58)	5.0 mg/L to 10,000 mg/L
		Oil & Grease	APHA 5520 B. P—5-	4.0 mg/L to 1000 mg/L
			40,22 nd Ed./ IS 3025 (Part- 39)	3.0 mg/L to 1000 mg/L
ļ		Phenol / Phenolic	APHA 5530 C&D. P-5-	0.01 mg/L to 220 mg/L
		Compound	47,22 nd Ed./ IS 3025 (Part - 43)	0.02 mg/L to 220mg/L
		Conductivity	APHA – 2510 B. P-2-54,	1.0 µs/cm to 10,000
			22 nd Ed. / IS 3025 (Part-14)	μs/cm 2.0 μs/cm
				to10,000 µs/cm
		Total Residual Chlorine	APHA – 4500 CI B. P-4-60,	0.1 mg/L to 1.0 mg/L 0.2
			22 nd Ed./ IS 3025 (Part-26)	mg/L to 1.0 mg/L
		Ammonical Nitrogen	APHA – 4500 – NH ₃ C. P-4- 112, 22 nd Ed	1.0 mg/L to 100 mg/L
		Total Kjehldal Nitrogen	APHA 4500 – N. P-4-132, 22 nd Ed	1.0 mg/L to 100 mg/L
		Dissolved Oxygen	APHA 4500-O C. P-4-139,	0.1 mg/L to 10.0 mg/L
			22 nd Ed./ IS 3025 (Part-38)	0.1 mg/L to 10.0 mg/L
		Fluoride	APHA 4500 F ⁻ D. P-4-87,	1.0 mg/L to 100 mg/L 0.5
			22 nd Ed. IS: 3025 (Part-60)	mg/L to100 mg/L
		Magnesium	APHA 3500-Mg B. P-3-84,	0.5 mg/L to 2000 mg/L
			22 nd Ed./ IS: 3025 (Part-46)	1.0 mg/L to 2000 mg/L
		Total Solids	APHA 2540 B. P-2-64, IS:	5.0 mg/L to 20,000 mg/L
	<u> </u>	<u> </u>	3025 (Part-16)	1.0 mg/L to 50,000 mg/L

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		Fixed Solids	APHA 2540 E. P-2-67 IS 3025 (Part-18)	5.0 mg/L to 10,000 mg/L 6.0 mg/L to 10,000 mg/L
		Volatile Solids	APHA 2540 E. P-2-67 IS 3025 (Part-18)	5.0 mg/L to 10,000 mg/L 6.0 mg/L to 10,000 mg/L
		Boron	APHA 4500 B IS 3025 (Part-57) AGSS/CHEM/SOP-ICPMS- 03	0.25 mg/L to 10.0 mg/L 0.005 mg/L to 100 mg/L
		Chloride(as Cl ⁻)	APHA 4500-Cl ⁻ B. P-4-72, IS 3025 (Part-32)	2.5 mg/L to 20,000 mg/L 1.0 mg/L to 20,000 mg/L
		Nitrate (as N/as NO ₃) Silica (as SiO ₂)	IS 3025 (Part-34) APHA-4500-SiO ₂ -C. P-4- 167, IS 3025 (Part-35)	0.1 mg/L to 100.0 mg/L 0.2 mg/L to 100.0 mg/L 0.3 mg/L to 100.0 mg/L
		Free Ammonia	IS 3025 (Part-34)	1.0 mg/L to 100 mg/L
		Sulphide (as H ₂ S)	IS 3025 (Part-29)	0.1 mg/L to 20 mg/L
		Chromium(as Cr+6)	APHA 3500-CrB. 3-69. IS 3025 (Part-52)	0.05 mg/L to 100.0 mg/L 0.1 mg/L to 100.0 mg/L
		Temperature	IS-3025(P-9) APHA-2550 B. P-2-69,	1 °C to 99 °C 1 °C to 99 °C
		Turbidity	IS 3025 (P-10) APHA-2130 B. P-2-13	1 NTU to 500 NTU 1 NTU to 500 NTU
		Total Hardness	IS 3025 (P-21) APHA-2340 C. P-2-44,	1 mg/L to 5000 mg/L 2 mg/L to 5000 mg/L
		Total Acidity	IS 3025(P-22) APHA-2310 B. P-2-31,	1 mg/L to 2000 mg/L 2 mg/L to 2000 mg/L
		Cyanide (as CN)	APHA 22 nd Ed. 4500CNF IS 3025 (P-27)	0.05 mg/L to 200 mg/L
		Calcium	IS 3025(P-40) APHA 3500 Ca B. P-3-67,	0.5 mg/L to 1000 mg/L 1.0 mg/L to 1000 mg/L
		Total Alkalinity	IS 3025(P-23) APHA 2320B. P-2 34,22 nd Ed.	1 mg/L to 2000 mg/L 2 mg/L to 2000 mg/L
		Sulphate	IS 3025(P-24)	5 mg/L to 20000 mg/L

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	 	Trace Metal Elements		
		Cadmium	AGSS/CHEM/SOP-	0.001 mg/L to 100 mg/L
		Chromium	ICPMS/03	0.005 mg/L to 100 mg/L
		Manganese		0.005 mg/L to 100 mg/L
		Copper		0.005 mg/L to 100 mg/L
		Iron		0.01mg/L to 100 mg/L
		Nickel		0.005 mg/L to 100 mg/L
		Zinc		0.01mg/L to 100 mg/L
		Lead		0.005 mg/L to 100 mg/L
		Arsenic		0.005 mg/L to 100 mg/L
		Selenium		0.005 mg/L to 100 mg/L
		Silver		0.005 mg/L to 100 mg/L
		Aluminium		0.01mg/L to 100 mg/L
		Mercury		0.001 mg/L to 100 mg/L
		Antimony		0.001 mg/L to 100 mg/L
		Barium		0.005 mg/L to 100 mg/L
		Boron		0.005 mg/L to 100 mg/L
		Tin		0.005 mg/L to 100 mg/L
		Pesticides		
		Aldrin	AGSS/CHEM/SOP-	0.01µg/L to 1000 µg/L
		Dieldrin	GCMS/01	0.01μg/L to 1000 μg/L
		Endosulfan-l		0.01μg/L to 1000 μg/L
		Endosulfan-II		0.01μg/L to 1000 μg/L
		EndosulfanSulfate		0.01μg/L to 1000 μg/L
		O,p DDT		0.01μg/L to 1000 μg/L
		P,p DDD		0.01μg/L to 1000 μg/L
		P,p DDE		0.01μg/L to 1000 μg/L
		P,pDDT		0.01μg/L to 1000 μg/L
		Alpha HCH		0.01µg/L to 1000 µg/L
		Beta HCH		0.01µg/L to 1000 µg/L
		Gama HCH		0.01μg/L to 1000 μg/L
		Delta HCH		0.01μg/L to 1000 μg/L
		Chloropyrifos		0.01μg/L to 1000 μg/L

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		Ethion		0.01μg/L to 1000 μg/L
		Malathion		0.01μg/L to 1000 μg/L
		Parathion-methyl		0.01μg/L to 1000 μg/L
		Phorate		0.01μg/L to 1000 μg/L
		Alachlor		0.01μg/L to 1000 μg/L
		Butachlor		0.01μg/L to 1000 μg/L
		Monocrotophos		0.01μg/L to 1000 μg/L
		Polynuclear Aromatic hydrocarbons(PAH)		
		Naphthalene	AGSS/CHEM/SOP-	0.05 μg/L to 1000 μg/L
		Acenaphthylene	GCMS/01	0.05 μg/L to 1000 μg/L
		Acenaphthene		0.05 μg/L to 1000 μg/L
		Fluorene		0.05 μg/L to 1000 μg/L
		Phenanthrene		0.05 μg/L to 1000 μg/L
		Anthracene		0.05 μg/L to 1000 μg/L
		Fluoranthene		0.05 μg/L to 1000 μg/L
		Pyrene		0.05 μg/L to 1000 μg/L
		Benzo(a)anthracene		0.05 μg/L to 1000 μg/L
		Chrysene		0.05 μg/L to 1000 μg/L
		Benzo (β) Fluoranthene		0.05 μg/L to 1000 μg/L
		Benzo(k)Fluoranthene		0.05 μg/L to 1000 μg/L
		Benzo(a)Pyrene		0.05 μg/L to 1000 μg/L
		Dibenzo (a,h)Anthracene		0.05 μg/L to 1000 μg/L
		Benzo(g,h,i)Peryleneb		0.05 μg/L to 1000 μg/L
		Poly chlorinated Biphenyls(PCBs)		
		2,3,4'-Trichlorobiphenyl	AGSS/CHEM/SOP-	0.05 μg/L to 1000 μg/L
		2,2',4,4'-	GCMS/01	0.05 μg/L to 1000 μg/L
		Tetrachlorobiphenyl		<u> </u>
		2,3',4,4',5,6'		0.05 μg/L to 1000 μg/L
		Hexachlorobiphenyl		
		2,2',4,4,4',5',6-		0.05 μg/L to 1000 μg/L
		Hexachlorobiphenyl	<u> </u>	

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		2,2',4,4',5,6'- Heptachlorobiphenyl		0.05 μg/L to 1000 μg/L
III.	WATER			
1.	Water (Potable water, Surface	Colour/ Appearance	IS: 3025 (Part-4)	1.0 Hazen to 500.0 Hazen
	Water, Ground Water, Borewell	pH	APHA 4500-H ⁺ B. P-4-92, IS 3025 (Part-11)	2.0 to 12.0 2.0 to 12.0
	Water)	ter) Tubidity APHA 2130 B. P-2-13	APHA 2130 B. P-2-13, IS: 3025 (p-10)	1 NTU to 500 NTU
		Temperature	APHA 2550 B. P-2-69, IS 3025 (Part -9)	-10.0 to 100.0°C -10.0 to 100.0°C
		Conductivity	APHA 2510 B. P-2-54, IS 3025 (Part-14)	1.0 µS/cm to 10,000 µS/cm 1.5 µS/cm to 10,000 µS/cm
		Silica (as SiO ₂₎	APHA-4500-SiO ₂ -C. P-4- 167, IS 3025 (Part-35)	0.2 mg/L to 10.0 mg/L 0.3 mg/L to 10.0 mg/L
		Total Solids / Total Dissolved Solids	APHA 2540 B &C. P-2-64- 65, IS 3025 (Part-16)	1.0 mg/L to 20,000 mg/L 2.0 mg/L to 20,000 mg/L
		Dissolved Oxygen	APHA 4500-O C. P-4-139, IS 3025 (Part-38)	0.1 mg/L to 10.0 mg/L 0.5 mg/L to 10.0 mg/L
		Calcium(as Ca)	APHA 3500-CaB. P-3-67, IS 3025 (Part-40)	0.5 mg/L to 1000 mg/L 1 mg/L to 1000 mg/L
		Potassium(as K)	APHA 3500-K B. P-3-87, IS 3025 (Part-5)	1.0 mg/L to 1000 mg/L 0.5 mg/L to 1000 mg/L
		Phenol / Phenolic Compound	APHA 5530 C-D. P-5- 47,49, 22 nd Ed./ IS 3025 (Part-43)	0.01 mg/L to 10 mg/L 0.05 mg/L to 10 mg/L
		Total Suspended Solids	APHA 2540D. P-2-66, 22 nd Ed./ IS 3025(Part-17)	5.0 mg/L to 2000 mg/L 1.0 mg/L to 2000 mg/L
		Oil & Grease	APHA 5520 B. P-5-40, 22 nd Ed./ IS 3025 (Part-39)	4.0 mg/L to 100.0 mg/L 3.0 mg/L to 100.0 mg/L
		Residual Free Chlorine	APHA – 4500 CI B. P-4-60, 22 nd Ed./ IS 3025 (Part- 26)	0.1 mg/L to 1.0 mg/L 0.5 mg/L to 1.0mg/L

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		Ammonical Nitrogen	APHA -4500-NH₃ C. P-4- 112, 22 nd Ed.	2.0 mg/L to 100 mg/L
		Nitrate / Nitrate Nitrogen (N/NO ₃)	IS 3025 (Part- 34)	0.1 mg/L to 100.0 mg/L 0.5 mg/L to 100.0 mg/L
		Total Solids	APHA 2540 B. P-2-64, 22 nd Ed./ IS 3025 (Part-16)	5.0 mg/L to 20,000 mg/L 1.0 mg/L to 20,000 mg/L
		Fixed Solids	APHA 2540 E. P-2-67, 22 nd Ed./ IS 3025(Part-18)	5.0 mg/L to 10,000 mg/L 1.0 mg/L to 10,000 mg/L
		Volatile Solids	APHA 2540 E. P-2-67, 22 nd Ed./ IS:3025(Part-18)	5.0 mg/L to 10,000 mg/L 1.0 mg/L to 10,000 mg/L
		Ammonia (as Total NH ₃ -N) Chloramines (as Cl ₂)	IS 3025(Part-34) IS 3025 (Part-26)	0.5 mg/L to 100 mg/L 1.0 mg/L to 50 mg/L
		Mineral oil	IS 3025 (Part-39)	0.1 mg/L to 1000 mg/L
		Sulphide (as H ₂ S)	IS 3025 (Part-29)	0.05 mg/L to 20mg/L
		Chromium (as Cr ⁺⁶)	APHA 3500-Cr B. P-3-69, 22 nd Ed./ IS 3025 (Part-52)	0.05 mg/L to 0.5 mg/L 1.0 mg/L to 0.5 mg/L
		Boron (as B)	IS 3025(P-57) APHA 4500 BB. P-4-25,	0.25 mg/L to 100.0mg/L 0.01 mg/L to 100.0mg/L
		Chloride (asCl)	IS 3025(P-32) APHA 4500- CI-B. P-4-72,	2 mg/L to 20,000 mg/L 1 mg/L to 20,000 mg/L
		Magnesium(asMg),	IS 3025(P-46) APHA 3500- MgB. P-3-84,	0.5 mg/L to 2500 mg/L 1.0 mg/L to 2500 mg/L
ļ		Sulphate(asSO4),	IS 3025(P-24)	1 mg/L to 5000 mg/L
		Total Hardness	IS 3025(Part21) APHA 2340 C. P-2-44,	1 mg/L to 5000mg/L 2 mg/L to 5000 mg/L
		Cyanide (as CN)	APHA 4500 CN-(K). P-4-51,	Qualitative (Present/Absent)
		Sodium (as Na)	IS 3025(P-45) APHA 3500- Na B. P-3-97,	1.0 mg/L to 2000 mg/L 2.0 mg/L to 2000 mg/L
		Oxygen Absorption in 4 hrs	IS 3025(Part63)	0.1 mg/L to 100mg/L
		Total Acidity	IS 3025(Part22)	1.0 mg/L to 500 mg/L
		Phosphorus(as P/PO4)	APHA-4500 P. P-4-148, 22 nd Ed. IS 3025(Part31)	0.05 mg/L to 100 mg/L

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		Salinity Total Kjeldhal Nitrogen (as N) Nitrite(as NO ₂) Chemical Oxygen Demand Biological Oxygen	APHA-2520 (B). APHA-4500 Norg(B) &(C).P-4-132, IS 3025(Part34) IS 3025(Part34) APHA 4500 NO2 -B:22nd Edition IS 3025 (Part58) IS 3025 (Part44) APHA-	1.0 mg/L to 10000 mg/L 1.0 mg/L to 1000 mg/L 0.1 mg/L to 100 mg/L 0.5 mg/L to 100 mg/L 1.0 mg/L to 1000 mg/L 2.0 mg/L to 1000 mg/L
		Demand (BOD) CO2 free/dissolved Bicarbonates (as CaCO3) Carbonates(as CaCO3)	5210 B. P-5-5 22 nd Ed. APHA-4500 CO ₂ -C. P-4-31, IS 3025 (Part51) IS 3025 (Part51)	2.0 mg/L to 1000 mg/L 1.0 mg/L to 50 mg/L 1 mg/L to 500 mg/L 1 mg/L to 500 mg/L
2.	Packaged Drinking Water/Packaged Natural Mineral	Colour (True colour unit) Turbidity	IS 3025(P-4) APHA2120 B IS 3025(P-1) APHA 2130 B.P-2-13,	1 Hazen to 500.0 Hazen 1 Hazen to 500.0Hazen 1 NTU to 500.0 NTU 1 NTU to 500.0NTU
	Water	Total dissolved Solids pH	IS 3025(P-16) APHA 2540 B,C. P-2-64,65 IS 3025(P-11)/ APHA 4500- H ⁺ B. P-4-92,	2.0 to 12.0 2.0 to 12.0
		Manganese Nitrate Nitrite	IS 3025 (P-59) IS 3025 (P-34) IS 3025(Part34) APHA 4500 NO2 (B)	0.1 mg/ to 500 mg/L 0.5 mg/L to 20.0 mg/L 0.01 mg/L to 1mg/L 0.5 mg/L to 1mg/L
		Fluoride	IS 3025(P-60) (By Colour Comparison) / APHA 4500- FD. P-4-83.	0.02 mg/L to 50.0 mg/L 0.02 mg/L to 1.0 mg/L
		Cyanide Chloride	APHA 4500 CN ⁻ (K). P-4-51, IS 3025 (Part32) APHA-	Qualitative (present/Absent) 2.5 mg/L to 1000 mg/l
		Cilionae	4500 CI-(B). P-4-72,	2.5 mg/L to 1000 mg/l

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		Sulphate	IS 3025 (P-24) APHA 4500 SO4E	5 mg/L to 1000 mg/L 5 mg/L to 1000 mg/L
		Alkalinity	IS 3025(P-23)	1.0 mg/L to 1,000 mg/L
		Calcium	IS 3025(P-40)/ APHA3500- CaB. P-3-67.	0.5 mg/L to 5000 mg/L 1.0 mg/L to 5000 mg/L
		Magnesium	IS 3025(P-46) APHA 3500 Mg-(B). P-3-84	0.5 mg/L to 5000 mg/L 1.0 mg/L to 5000 mg/L
		Sodium	IS 3025 (Part45) APHA3500 Na-(B). P-3-97	1.0 mg/L to 1000 mg/L 0.5 mg/L to 1000 mg/L
		Residual Free Chlorine	IS 3025 (P-26) APHA- 4500 CI B. P-4-60, 22ndEd.	0.1 mg/L to 10mg/L 0.5 mg/L to 10 mg/L
		Phenolic Compounds (as C6H5OH)	IS 3025 (P-43)/APHA 5530 C.D. P-5-47,49, 22ndEd.	0.5 mg/L to 10 mg/L 0.01 mg/L to 10 mg/L
		Mineral Oil	IS 3025 (P-39) Amm. No-2, 2013	0.1 mg/L to 10 mg/L
		Sulphide (as H ₂ S)	IS: 3025 (P-29)	0.05 mg/L to 20mg/L
		Borates	Annex H of IS 13428 APHA-3125BB P-4-25, 22 nd Ed	0.1 mg/L to 100 mg/L
		Barium	IS 13428 (Annex. F)/ IS 15302-2004/ APHA- 3125(B) :22nd Ed	0.01 mg/L to 40mg/l 0.02 mg/L to 40 mg/L
3.	Water For	pH Value at 25ºC	IS 3025 (P-11)	2 to 12
	Construction	Organic Solids	IS 3025 (P-18)	1 mg/L to 1000 mg/L
		Inorganic Solids	APHA 2510 B. P-2-54, IS 3025 (Part-14)	1 mg/L to 10000 mg/L
		Sulphates as SO4	APHA-4500-SiO ₂ -C. P-4- 167, IS 3025 (Part-35)	1 mg/L to 5000 mg/L
		Chlorides as Cl	IS 3025 (P-32)	1 mg/L to 5000 mg/L
		Suspended Matter	IS 3025 (P-17)	1 mg/L to 5000 mg/L
		a) To neutralize 100ml of sample water using phenolopthalein as an	IS 3025 (P-22) IS 3025 (Part 23)	0.1 mg/L to 50 mg/L

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		b) To neutralize 100ml of sample water using Mixed indicator using.	IS 3025 (Part 23)	0.1 ml to 50 ml
IV.	FOOD & AGRICULT	URAL PRODUCTS		
1.	Herbs, Spices & Condiments	Moisture	IS 1797 FSSAI Lab Manual-10	0.5% to 30%
	(Mixed, Whole, Ground mixed &	Total Ash	IS 1797 FSSAI Lab Manual- 10	0.1% to 10%
	Oleoresins, Caraway,	Acid Insoluble Ash	IS 1797 FSSAI Lab Manual- 10	0.05% to 2%
	Cardamom, Large	Water Insoluble Ash	IS 1797	0.1% to 10%
	Cardamom, Chillies, Cinnamon,	Non -Volatile Ether Extract	IS 1797 FSSAI Lab Manual- 10	8.0% to 30%
	Cassia, Cloves, Coriander, Cumin,	Alcohol Soluble Extract	IS 1797 FSSAI Lab Manual- 10	0.5% to 50%
	Cumin Black, Fennel, Fenugreek,	Cold Water Soluble Extract	IS 1797 FSSAI Lab Manual- 10	0.5% to 50%
	Ginger, Mace, Mustard, Nutmeg,	Chromate Test	IS 3576 FSSAI Lab Manual- 10	Qualitative
	Pepper Black, Poppy, Saffron,	Curcumin Content	IS 10925 FSSAI Lab Manual- 10	1.0% to 10%
	Turmeric, Curry	Acidity	IS 13242	0.1% to 50%
	Powder, Mixed Masala, Aniseed,	Total Nitrogen	FSSAI LabManual-10 IS 7219	0.1% to 10%
	Ajawain, Dried Mango Slices, Dried Mango Powder, Pepper White, Dried Garlic, Dehydrated Onion, Asafoetida, Tamarind, Herbs)	Moisture& Volatile Matter	IS 5453(P-2)	0.1% to 40%

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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.	Milk & Dairy Products (Edible	Moisture	IS 11623 FSSAI Lab Manual- 1	0.5% to 90%
	dairy ingredient - Milk, Mixed Milk,	Titrable Acidity	IS 1165 FSSAI Lab Manual- 1	0.1% to 10%
	Standardized Milk, Recombined Milk,	Total Ash	IS 1165 FSSAI Lab Manual- 1	1% to 10%
	Toned Milk,	Acidity of extracted fat	IS 548 IS 11721	0.5% to 6%
	Double Toned Milk, Skimmed	Fat	IS 1479 (P-1&2) FSSAI Lab Manual- 1	1% to 80%
	Milk, Full Cream Milk, Evaporated	Protein	IS 7219 FSSAI Lab Manual- 1	1% to 40%
	Milk, Sweetened Condensed, Milk,	RM Value	IS 548 (P-1):1964 FSSAI Lab Manual- 1	20% to 36%
	Cream, Malai, Curd, Chhena,	Total Solids	IS 11623 FSSAI Lab Manual- 1	80% to 95%
	Cheese, Cream Cheese, Milk	Sucrose	IS 4079: FSSAI LabManual:1	1% to 50%
	Powder, Infant Milk Food, Butter,	рН	IS 1000 IS 1479(P-1) AOAC 943.02	2 to 12
	Desi Ghee, Butter	Total Milk Solids	IS 1166	5% to 40%
	Oil, Chakka, Shrikhand,	Total Nitrogen	IS 1479 (P-2), IS 7219	0.1% to 10%
	Yoghurts)	Chloride	IS 1479(P-2)	0.01% to 2.0%
3.	Alcoholic Beverages	Residue on evaporation	IS 3752 FSSAI Lab Manual- 16	0.1% to 10%
	(Whisky, Wines, Rums, Vodka,	Total Acidity (as Tartaric acid)	IS 3752 FSSAI Lab Manual- 16	1 to 30 gm/100L
	Beer)	Ethyl Alcohol content	IS 3752 FSSAI Lab Manual- 16	0.1% to 70%
		Esters	IS 3752 FSSAI Lab Manual- 16	0.05 to 200 gm/100L
		Aldehydes	IS 3752 FSSAI Lab Manual- 16	0.50 to 50 gm/100L

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		Volatile Acidity (as Aceticacid) Fixed Acidity Ash Content Methyl Alcohol Furfural pH	IS 3752 FSSAI Lab Manual- 16 IS 3752 IS 3752 IS 3752 IS 3865 FSSAI Manual-13 IS 3752 AOAC 20 th edition FSSAI Manual 13 IS 3865 IS 14398	0.1 to 20 gm/100L 0.2 to 10gm/100L 0.01% to 1% 0 to 50gm/100L 1 to 50gm/100 L
4.	Edible oils & fats	Higher Alcohols as amyl alcohol Specific gravity@30°C	IS 3752 AOAC 20 th edition FSSAI Manual– 13 IS: 548 (Part-1) FSSAI Lab	5 to 500gm/100L 0.860 to 0.999
4.	(Coconut Oil, Cotton Seed Oil, Groundnut Oil, Linseed Oil, Mahua Oil, Rape	Acid value	Manual- 2 IS: 548 (Part-1) FSSAI Lab Manual- 2 Manual- 2	0.1% to 20%
		Iodine Value	IS: 548 (Part-1) FSSAI Lab Manual- 2 IS: 548 (Part-1) FSSAI Lab	50 to 250 80 to 300
	Seed Oil, Mustard Oil, Olive Oil, Poppy Seed Oil,	Saponification Value Moisture & Insoluble	Manual- 2 IS:548 (Part-I) FSSAI Lab	0.1% to 10%
	Safflower Seed Oil, Taramira Oil, Til Oil, Niger Seed	impurities Reichert Meissel (RM value)	Manual- 2 IS 548 (Part-I) FSSAI Lab Manual- 2	1 to 50
	Oil, Soyabean Oil, Maize Oil, Refined	Refractive index at 40°C	IS 548 (Part-I) FSSAI Lab Manual- 2	1.4450 to 1.480
	Vegetable Oil, Almond Oil, Water Melon Oil, Palm	Un-saponifiable matter	IS 548 (Part-I) FSSAI Lab Manual- 2	0.01 to 10(%/wt.)
	Oil, Palmolein Oil,	B.R Reading	IS 3508 IS 548 (P-I)	20 to 75
	Palm Kernel Oil, Sunflower Seed Oil, Rice Bran Oil, Blended Edible	Polensky Value	IS 4079 IS 548(P-1) FSSAI LabManual-2	1.0 to 99.0% 1.0 to 20.0

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	Vegetable Oil, Partially	Peroxide value	IS 548 (Part1) AOAC 20 th Edn. FSSAI Lab Manual–2	0.1 meq/kg to 10 meq/kg
	Hydrogenated Oil,	Moisture & Volatile Matter	IS 548 (P-1)	0.1% to 20%
	Beef Fat, Mutton Fat, Goat Fat, Cocoa Butter, Refined Sal seed Fat, Kokum Fat, Mango Kernel Fat, Dhupa Fat, Phulwara Fat, Ghee, Cooking	FFA	IS 548 (P-1)	0.1% to 50.0%
5.	(Cereals, Pulses &	Moisture	IS 1009 FSSAI Lab	0.5% to 10%
	Cereals Products) (Atta,Maida,Suji, Besan,Wheat,	Total Ash	Manual- 3 IS 1009 FSSAI Lab Manual-3	1.0% to 10%
	Maize, Jawar, Bajra, Rice,	Protein	IS 7219 IS 4684 FSSAI Lab Manual- 3	1% to 40%
	MasurWhole, Urd Whole, Moong	Gluten	IS 1009 FSSAI Lab Manual- 3	5% to 20%
	Whole, Chana Whole, Arhar Dal,	Alcoholic Acidity	IS 1009 FSSAI Lab Manual- 3	0.1% to 20%
	Moong Dal, UrdDal, Chana	Acid Insoluble Ash	IS 1009 FSSAI Lab Manual- 3	0.1% to 2%
	Dal, Masur Dal, Cornflour, Corn	Fat	IS 4684 AOAC (20 th Edition)	0.05% to 30%
	Flakes, Custard Powder, Macaroni, Pasta,	Total Ash excluding NaCl	IS 1158 FSSAI Manual-3 AOAC 20 th Edition IS 4706(P-2)	0% to 20%
	Spaghetti, Rolled	Total Solids In Gruel	IS 1485	1% to 10%
	Oats, Soya Flour, Groundnut Flour,	Acid value of extracted fat	IS 4684 AOAC 20 th edition FSSAI Manual–3	0.1% to 10%
	Sesame Flour,	Mass of 1000 grain	IS 4333(Part4)	1% to 50%

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	Coconut Flour,	pH of water extract	IS 4706 AOAC-20 th edition	3 to 10
	Cotton Seed Flour, Breakfast	Total Solids	IS 1483 FSSAI Lab manual 3 AOAC 20 th Edition	60% to 95%
	cereals)	Free Acidity	IS 4706 (P-2) IS 1485	1.01 ml to 14.0 ml
		FFA(as Oleic acid)	IS 548 (P-1)	0.01% to 50%
		Reducing Sugar	IS 6287	0.1%to 50%
		Energy(Calorific value)	By Calculation	50 to 900 Kcal/100gm
		Starch	IS 4706 (P-2)	5% to 95%
		Carbohydrate	IS 1656	20% to 80%
6.	Honey & Honey Products	Moisture	IS 4941 (Part-2) FSSAI Lab Manual- 4	0.1% to 40%
		Total Ash	IS 4941 (Part -2) FSSAI Lab Manual- 4	0.1% to 10%
		Acidity	IS 4941 (Part -2) FSSAI Lab Manual- 4	0.1% to 10%
		Specific Gravity at 27°C	IS 4941 (Part -2) FSSAI Lab Manual- 4	0.801 to 1.5
		Total Reducing Sugars	IS 4941 (Part -2) FSSAI Lab Manual- 4	0.1% to 90%
		Sucrose	IS 4941 (Part -2) FSSAI Lab Manual- 4	0.1% to 10%
		Fructose-Glucose Ratio	IS 4941 FSSAI Lab Manual- 4	0.5 to 2.0
		Fiehe's Test	IS 4941 (Part -2)	Present/Absent
		HMF	IS 4941 (Part -2)	0.1 mg/kg to 100 mg/kg
7.	Coffee & Cocoa products	Moisture	IS 1164 FSSAI Lab Manual- 4	0.5% to 30%
	(Chocolates, Cocoa Powder, Milk Shake		IS 3633 IS:1164 FSSAI Lab Manual- 4	0.1% to 15%
	Powder, Instant Drinks Powder,	Acid Insoluble Ash	IS 3633 IS:1164 FSSAI Lab Manual- 4	0.01% to 2%
	Instant Beverages)	Alkalinity of total Ash	IS 1164 FSSAI Lab Manual- 4	1% to 10%

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		Water Soluble Ash	IS 3633 FSSAI Lab Manual- 4	0.5% to 40%
		Alkalinity of water soluble ash	IS 3077 AOAC 20 th Edition FSSAI Manual–4	0.1 ml to10 ml
		Total Fat (petroleum EtherExtract)	IS 3077 AOAC 20th Edition	0.2% to 20%
		Cocoa Butter	FSSAI Manual–4	0.1% to 30%
		Solubility in boiling water	IS 2791 IS 3309 FSSAI Manual–4	Qualitative
		Solubility in cold water	IS 2791	Qualitative
		Aqueous Extract	IS 13862 IS 3077 IS 612 AOAC 20 th Edition FSSAI Manual– 4	0.1% to 90%
		Total Sugar	IS 6762	0.1% to 80%
		Alcoholic Insoluble Residue	IS 2962	1% to 50%
8.	Tea & Tea Products	Moisture	IS 1164 FSSAI Lab Manual- 4	0.5% to 80%
		Total Ash	IS 3633 FSSAI Lab Manual- 4	0.1% to 15%
		Acid Insoluble Ash	IS 3633 FSSAI Lab Manual- 4	0.1% to 2%
		Alkalinity of total Ash	IS 1164 FSSAI Lab Manual- 4	1% to 10%
		Water Soluble Ash of total ash	IS 3633 FSSAI Lab Manual- 4	1% to 80%
		Free Acidity	IS 4706	1.0% to 4.0%
		Alkalinity of Water Soluble Ash	IS 13856 FSSAI Manual 4	0.1% to 5%
		Water Extract	IS 13862 FSSAI Manual 4	0. 2% to 90%
		Water Insoluble Ash	IS 13855	0.1% to 5%
9.	Bakery & Confectionary Products Baked	Moisture	IS 12711 IS 1011 FSSAI Lab Manual- 4	0.5% to 50%

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	products perishable &non-	Total Ash	IS 12711 FSSAI Lab Manual- 4	0.5% to 10%
	perishable, desserts, Cakes,	Acid Insoluble Ash	IS 12711 IS 1011 FSSAI Lab Manual- 4	0.1% to 5%
	Biscuit, Bread, SujiRusk,	Sulphated Ash	IS 12711 FSSAI Lab Manual- 4	0.5% to 10%
	Pastries, Puffs, Cereal bars,	Sucrose	IS 6287 FSSAI Lab Manual- 4	1% to 90%
İ	Fudge, Rolls,	рН	IS 12711	2.0 to 13
	Buns, Puddings,	Acidity of extracted Fat	IS 12711 IS 1011	0.1% to 0.5%
	Milk Toffee, Butter	Total Solids	IS 12711	0.5% to 95%
	Toffee, Lozenges, Chewing Gum,	Fat	IS 12711 FSSAI Lab Manual- 4	1% to 40%
	Bubble Gum, Chocolate, Edible Ices)	Alcoholic Acidity	IS 12711	0.5% to 5%
		Reducing Sugar	IS 6287 FSSAI Lab Manual- 4	11% to 30%
		Peroxide value	IS 3508	0.2 meq/kg to 20 meq/kg
		Protein	FSSAI Lab Manual4	1% to 80%
		Starch	FSSAI Manual–4	0.1% to 90%
		Test for Rancidity	FSSAI Manual– 4	Qualitative
		Milk Solid not Fat	FSSAI Manual–4	1.0% to 10%
		Total Protein	IS 7219 AOAC (20 th Edition) FSSAI Manual–4	0.5% to 50%
		Sodium	AOAC 19thEd /Flame Photometer/ AOAC 20 th edition	1 to 2000 mg/100gm
		Total Ash excluding NaCl	IS 1485 AOAC 20th edition	1.0% to 90%
		Nitrogen	IS 7219	1.0 to 50g/100gm
10.	Fruit & Vegetable Products	Acidity	IS 2860 FSSAI Lab Manual- 5	0.1% to 40%
	(Processed fruit & Vegetable products - Canned Fruits,	Total Soluble Solids	IS 2860 FSSAI Lab Manual- 5	0.1% to 80%

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	Perishable restaurant food,	Total Ash	IS 3500 AOAC 20 th edition FSSAI Lab Manual 5	0.5% to 10%
l	concentrates,	рН	FSSAI Lab Manual 5	1 to 14
	Fruit Juices, Vegetable Juices,	Protein	IS 7219 AOAC 20 th edition FSSAI Lab Manual 5	0.5% to 30%
	Mango Pulp/Puree,	Salt as NaCl	IS 1797 IS 2860 AOAC 20 th edition	0.1% to 15%
l	Tomato	Sucrose	IS 3547 AOAC: 20th edition	1% to 70%
	Puree/Paste, Soup Powders,	Acid Insoluble Ash	IS 3500 FSSAI Lab Manual 5	0.1% to 5%
	Tamarind Pulp/Puree, Fruit	Total solids	IS 3882 FSSAI Lab Manual 5	1% to 90%
ı	Bar, Synthetic	Specific Gravity	IS 2860	0.5 to 2.0
	Syrup, Murabba,	Calcium	IS 13433 (P-2) IS 4285	1 to 1000 mg/100 gm
	Tomato Ketchup, Tomato Sauce, Soya Sauce, Jam, Fruit Jelly, Fruit Cheese, Mango Chutney, Pickles, Vinegar	Reducing Sugar	IS 8846	1% to 50%
11.	Snacks,	Moisture	IS 15271	0.5% to 10%
	Convenience	Total Ash	IS 15271	0.1% to 25%
	Products –	Acid Insoluble Ash	IS 15271	0.05% to 2%
	(Burgers,	Acidity of extracted fat	IS 15271	0.05% to 5%
	Sandwitches,	Fat	IS 15271	0.5% to 50%
	fresh snacks,	Peroxide Value	IS 15271	0.05 mg/kg to 50 mg/kg
	extrutedsnacks, shev, chivda, type	Salt as NaCl	IS 2860 AOAC 20 th edition	0.5% to 20%
l	of farsan, wafers,	рН	IS 4706	2 to 12
	bakarwati, Idli mix, Sambhar mix, Corn Snacks, Popcorn, Potato	Cold Water Solubles	IS 1317	0.1% to 5%
	Crisps, Chips)			

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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
12.	Fruit juices & Concent Rates (Soft drinks, fruit	Acidity	IS 2860 AOAC 20 th Edition FSSAI Lab Manual 5	0.01% to 5%
	drinks,	Total Ash	IS 3500	0.05% to 20%
	carbonated &non- carbonated	Salt	IS 2860 FSSAI Lab Manual 5	0.05% to 20%
	beverages &sherbets,	рН	IS 2860 FSSAI Lab Manual5	2 to 12
	squashes, soft drink	Acid Insoluble Ash	IS 3500 FSSAI Lab Manual 5	0.1% to 10%
	concentrates)	Carbohydrates	IS 1656 AOAC 20th Edition	5.0% to 95%
		Energy,Kcal	By Calculation AOAC, 20 Edition	5 to 900 Kcal/100gm
		Salt as NaCl	IS 1797 AOAC 20thedition	1mg/100 g&above
		Reducing Sugar	FSSAI Lab Manual 4	10% to 90%
13.	Meat & Meat Products, fish and fish products, Sea	Moisture	AOAC 20thEdition IS 5960 ISO : 1442 FSSAI Manual –6	0.1% to 80%
	food Poultry & poultry products	Salt as NaCl	IS 1797 IS 5960 ISO : 1841 (20 th Edition) FSSAI Manual–6	0.05% to 50%
		Total ash	AOAC (20 th Edition), IS 5960 (Part 2), ISO 936	0.5% to 20%
		Nitrogen(Protein)	AOAC(20 th Edition) IS 5960 ISO :937 FSSAI Manual-6	0.5% to 25%
		Carbohydrate	IS 1656	1% to 99%
		Energy	By Calculation	5 to 900Kcal/100gm
		Acid Insoluble Ash	IS 9808	0.01% to 5.0%
		Chloride	IS 5960	0.1% to 25%
		Free Fat	IS 5960	0.1% to 15%
		Total Fat	IS 5960	0.1% to 40%
		Protein	IS 7219	1.0% 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	
IV.	RESIDUES IN FOOD				
1.	Herbs, Spices & Condiments (Mixed, Whole, Ground mixed & Oleoresins, Caraway, Cardamom, Large Cardamom, Chillies, Cinnamon, Cassia, Cloves, Coriander, Cumin, Cumin Black, Fennel, Fenugreek,	Heavy Metals (Trace Metal Lead Copper Arsenic Mercury Cadmium Tin Zinc Iron	I l Elements) AGSS/CHEM/SOP- ICPMS/05	0.05 mg/kg to 100 mg/kg 0.05 mg/kg to 100 mg/kg	
	Ginger, Mace, Mustard, Nutmeg, Pepper Black, Poppy, Saffron, Turmeric, Curry Powder, Mixed Masala, Aniseed, Ajawain, Dried Mango Slices, Dried Mango Powder, Pepper White, Dried Garlic, Dehydrated Onion, Asafoetida, Tamarind, Herbs)				
2.	Milk & Dairy Products Edible dairy ingredient - Milk,	HeavyMetals (Trace Metal Lead Arsenic	AGSS/CHEM/SOP- ICPMS /06	0.01 mg/kg to 100 mg/kg 0.01 mg/kg to 100 mg/kg	
L		Cadmium		0.01 mg/kg to 100 mg/kg	

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	Mixed Milk,	Mercury		0.01 mg/kg to 100 mg/kg
	Standardized Milk,	Tin		0.1 mg/kg to 100 mg/kg
	Recombined Milk,	Copper		0.1 mg/kg to 100 mg/kg
	Toned Milk, Double	Zinc		0.1 mg/kg to 100 mg/kg
	Toned Milk,	Cobalt		0.01 mg/kg to 100 mg/kg
	Skimmed Milk, Full	Chromium		0.01 mg/kg to 100 mg/kg
	Cream Milk,	Iron		0.1 mg/kg to 100 mg/kg
	Evaporated Milk,	Manganese		0.1 mg/kg to 100 mg/kg
	Sweetened	Nickel		0.01 mg/kg to 100 mg/kg
	Condensed, Milk,	Selenium		0.1 mg/kg to 100 mg/kg
	Cream, Malai, Curd, Chhena, Cheese,	Silver		0.1 mg/kg to 100 mg/kg
	Cream Cheese, Milk Powder, Infant Milk Food, Butter,			
	Desi Ghee, Butter Oil, Chakka, Shrikhand, Yoghurts)			
3.	Alcoholic Beverages	Heavy Metals (Trace Metal Elements)		
	(Whisky, Wines,	Copper	AGSS/CHEM/SOP-	0.05 mg/L to 1000 mg/L
	Rums, Vodka,	Arsenic	ICPMS/07	0.05 mg/L to 1000 mg/L
	Beer)	Cadmium		0.05 mg/L to 1000 mg/L
		Mercury		0.05 mg/L to 1000 mg/L
		Lead		0.05 mg/L to 1000 mg/L
		Iron		0.05 mg/L to 1000 mg/L
		Tin		0.05 mg/L to 1000 mg/L
		Zinc		0.05 mg/L to 1000 mg/L
4.	Edible oils & fats Coconut Oil,	Heavy Metals (Trace Metal Elements)		
	Cotton Seed Oil,	Nickel	AGSS/CHEM/SOP-	0.1 mg/kg to 100 mg/kg
	Groundnut Oil,	Arsenic	ICPMS/08	0.1 mg/kg to 100 mg/kg
	Linseed Oil,	Cadmium		0.1 mg/kg to 100 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
	Mahua Oil, Rape	Copper		0.1 mg/kg to 100 mg/kg
	Seed Oil, Mustard	Lead		0.1 mg/kg to 100 mg/kg
	Oil, Olive Oil,	Mercury]	0.1 mg/kg to 100 mg/kg
	Poppy Seed Oil,	Tin]	0.1 mg/kg to 100 mg/kg
	Safflower Seed	Zinc]	0.1 mg/kg to 100 mg/kg
	Oil, Taramira Oil,			
	Til Oil, Niger Seed			
	Oil, Soyabean Oil,			
	Maize Oil, Refined			
	Vegetable Oil,			
	Almond Oil, Water			
	Melon Oil, Palm			
	Oil, Palmolein Oil, Palm Kernel Oil,			
	Sunflower Seed			
	Oil, Rice Bran Oil,			
	Blended Edible			
	Vegetable Oil,			
	Partially			
	Hydrogenated Oil,			
	Beef Fat, Mutton			
	Fat, Goat Fat,			
	Cocoa Butter,			
	Refined Sal seed			
	Fat, Kokum Fat,			
	Mango Kernel Fat,			
	Dhupa Fat,			
	PhulwaraFat,Ghee			
	, Cooking Fats)			
5.	Cereals, Pulses &	Heavy Metals (Trace		
	Cereals-Products	Metal Elements)	ļ	
	(Atta,Maida, Suji,	Lead	AGSS/CHEM/SOP-ICP-	0.01 mg/kg to 100 mg/kg
	Besan,Wheat,	Arsenic	MS/09	0.01 mg/kg to 100 mg/kg
L	Maize, Jawar,	Cadmium		0.01 mg/kg to 100 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
	Bajra, Rice, MasurWhole, Urd Whole, Moong Whole, Chana Whole, Arhar Dal, Moong Dal, UrdDal, Chana Dal, Masur Dal, Cornflour, Corn Flakes, Custard Powder, Macaroni, Pasta, Spaghetti, Rolled Oats, Soya Flour, Groundnut Flour, Sesame Flour, Coconut Flour, Cotton Seed Flour, Breakfast	Mercury Copper Tin Zinc Iron Cobalt Chromium Manganese Nickel Selenium Silver		0.01 mg/kg to 100 mg/kg
6.	cereals) Honey & Honey Products	Heavy Metals(Trace Metal Elements)		
		Copper Arsenic Cadmium Tin Mercury Lead Zinc Chromium Iron Manganese Nickel Selenium	AGSS/CHEM/SOP/ICP- MS/14	0.05 mg/kg to 100 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
[Silver		0.05 mg/kg to 100 mg/kg
7.	Tea & Tea Products	Heavy Metal(Trace Metal Elements)		
		Lead	AGSS/CHEM/SOP-ICP-	0.05 mg/kg to 1000 mg/kg
		Copper	MS/10	0.05 mg/kg to 1000 mg/kg
		Arsenic		0.05 mg/kg to 1000 mg/kg
		Cadmium		0.05 mg/kg to 1000 mg/kg
		Mercury		0.05 mg/kg to 1000 mg/kg
		Zinc		0.05 mg/kg to 1000 mg/kg
		Tin		0.05 mg/kg to 1000 mg/kg
8.	Fruit & Vegetable Products	Heavy Metals (Trace Metal Elements)		
	(Processed fruit &	Cadmium	AGSS/CHEM/SOP-ICP-	0.05 mg/kg to 100 mg/kg
	Vegetable	Copper	MS/11	0.05 mg/kg to 100 mg/kg
	products -	Lead		0.05 mg/kg to 100 mg/kg
	Canned Fruits,	Arsenic		0.05 mg/kg to 100 mg/kg
	Perishable	Tin		0.05 mg/kg to 100 mg/kg
	restaurant food,	Zinc		0.05 mg/kg to 100 mg/kg
	concentrates,	Mercury		0.05 mg/kg to 100 mg/kg
	Fruit Juices,	Aluminium		0.05 mg/kg to 100 mg/kg
	Vegetable Juices,	Barium		0.05 mg/kg to 100 mg/kg
	Mango	Boron		0.05 mg/kg to 100 mg/kg
	Pulp/Puree, Tomato	Cobalt		0.05 mg/kg to 100 mg/kg
	Puree/Paste, Soup	Chromium		0.05 mg/kg to 100 mg/kg
	Powders,	Iron		0.05 mg/kg to 100 mg/kg
	Tamarind	Manganese		0.05 mg/kg to 100 mg/kg
	Pulp/Puree, Fruit	Nickel		0.05 mg/kg to 100 mg/kg
	Bar, Synthetic	Selenium		0.05 mg/kg to 100 mg/kg
	Syrup, Murabba,	Silver		0.05 mg/kg to 100 mg/kg
	Tomato Ketchup,			
	Tomato Sauce,			
	Soya Sauce, Jam,			
	Fruit Jelly, Fruit			

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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
	Cheese, Mango Chutney, Pickles, Vinegar			
9.	Meat & Meat Products, fish and	Heavy Metal (Trace Metal Elements)		
	fish products, Sea	Lead	AGSS/CHEM/SOP-ICP-	0.05 mg/kg to 1000 mg/kg
	food Poultry &	Copper	MS/12	0.05 mg/kg to 1000 mg/kg
	poultry products	Arsenic		0.05 mg/kg to 1000 mg/kg
		Tin		0.05 mg/kg to 1000 mg/kg
		Zinc		0.05 mg/kg to 1000 mg/kg
		Cadmium		0.05 mg/kg to 1000 mg/kg
		Mercury		0.05 mg/kg to 1000 mg/kg
		Chromium		0.05 mg/kg to 1000 mg/kg
		Iron		0.05 mg/kg to 1000 mg/kg
		Manganese		0.05 mg/kg to 1000 mg/kg
		Nickel		0.05 mg/kg to 1000 mg/kg
		Antimony		0.05 mg/kg to 1000 mg/kg
		Selenium		0.05 mg/kg to 1000 mg/kg
		Aluminum]	0.05 mg/kg to 1000 mg/kg
		Boron		0.05 mg/kg to 1000 mg/kg
V.	RESIDUE IN WATER	₹		
1.	Water (Potable	Trace Metal Elements		
	water, Surface	Aluminium	AGSS/CHEM/SOP-	0.005 mg/L to 10mg/L
	Water, Ground	Barium	ICPMS/03	0.01 mg/L to 10 mg/L
	Water, Bore- Well	Boron		0.01 mg/L to 10 mg/L
	Water)	Copper	-	0.005 mg/L to 10mg/L
	Water(Potable	Iron		0.005 mg/L to 10mg/L
	water, Surface	Manganese		0.005 mg/L to 10mg/L
	Water, Ground	Selenium		0.005 mg/L to 10mg/L
	Water, Bore- Well	Silver		0.005 mg/L to 10mg/L
	Water)	Zinc		0.01 mg/L to 10 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		0.001 mg/L to 10mg/L
		Lead		0.005 mg/L to 10mg/L
		Mercury		0.0001 mg/L to 10mg/L
		Nickel		0.005 mg/L to 10mg/L
		Arsenic		0.005 mg/L to 10mg/L
		Chromium		0.005 mg/L to 10mg/L
		Pesticides		
		Alachlor	AGSS/CHEM/SOP-	0.01 μg/L to 1000 μg/L
		Atrazine	GCMS/01	0.01 μg/L to 1000 μg/L
		Aldrin/Dieldrin		0.01 μg/L to 1000 μg/L
		Alpha HCH		0.01 μg/L to 1000 μg/L
		Beta HCH		0.01 μg/L to 1000 μg/L
		Butachlor		0.01 μg/L to 1000 μg/L
		Chlorpyriphos		0.01 μg/L to 1000 μg/L
		Delta HCH	_	0.01 μg/L to 1000 μg/L
		DDT(o, p and p, p- Isomers of DDT, DDE		0.01 μg/L to 1000 μg/L
		and DDD)	_	ļ
		Endosulfan (alpha, beta and sulphate)		0.01 μg/L to 1000 μg/L
		Ethion		0.01 μg/L to 1000 μg/L
		GammaHCH(Lindane)		0.01 μg/L to 1000 μg/L
		Malathion		0.01 µg/L to 1000 µg/L
		Methyl parathion		0.01 µg/L to 1000 µg/L
		Phorate		0.01 µg/L to 1000 µg/L
		Monocrotophos		0.01 µg/L to 1000 µg/L
		2,4-D	AGSS/CHEM/SOP/HPLC-	0.01 μg/L to 1000 μg/L
		Iso-proturon	01	0.01 μg/L to 1000 μg/L
		Polychlorinated biphenyls (PCB)		
		Polychlorinated biphenyls(PCB)	AGSS/CHEM/SOP- GCMS/01	0.05 μg/L to 1000 μg/L
	İ	Polynuclear Aromatic hy	drocarbons (PAH)	

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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
		Polynuclear Aromatic hydrocarbons (PAH)	AGSS/CHEM/SOP- GCMS/01	0.05 μg/L to 1000 μg/L
2.	Packaged	Trace metal elements		
	Drinking	Iron		0.005 mg/L to 10mg/L
	Water/Packaged	Aluminium	AGSS/CHEM/SOP-	0.005 mg/L to 10mg/L
	Natural Mineral Water	Chromium	ICPMS/03	0.005 mg/L to 10mg/L
	vvalei	Manganese		0.005 mg/L to 10mg/L
		Nickel		0.005 mg/L to 10mg/L
		Copper		0.005 mg/L to 10mg/L
		Zinc		0.01 mg/L to 10mg/L
		Arsenic		0.005 mg/L to 10mg/L 0.005 mg/L to 10mg/L
		Selenium		0.005 mg/L to 10mg/L
		Silver		0.005 mg/L to 10 mg/L
		Cadmium		0.001 mg/L to 10 mg/L
		Antimony		0.005 mg/L to 10mg/L
		Barium		0.01 mg/L to 10mg/L
		Mercury		0.0001 mg/L to 10mg/L
		Lead		0.005 mg/L to 10 mg/L
		Pesticide residue		Ţ <u></u>
		o,p DDT	AGSS/CHEM/SOP-	0.01 μg/L to 1000 μg/L
		p,p DDT	GCMS/01	0.01 μg/L to 1000 μg/L
		o,p DDE	_	0.01 μg/L to 1000 μg/L
		p, p DDE	_	0.01 μg/L to 1000 μg/L
		o,p DDD	_	0.01 μg/L to 1000 μg/L
		p,p DDD	_	0.01 μg/L to 1000 μg/L
		α– BHC β– BHC	-	0.01 µg/L to 1000 µg/L
		γ-BHC/Lindane	-	0.01 µg/L to 1000 µg/L 0.01 µg/L to 1000 µg/L
		δ– BHC		0.01 μg/L to 1000 μg/L 0.01 μg/L to 1000 μg/L
		Alpha -Endosulfan		0.01 μg/L to 1000 μg/L 0.01 μg/L to 1000 μg/L
		Beta-Endosulfan	-	0.01 μg/L to 1000 μg/L 0.01 μg/L to 1000 μg/L
		Endosulfan Sulfate	-	0.01 μg/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
		Aldrin		0.01 μg/L to 1000 μg/L
		Dieldrin	·i 	0.01 µg/L to 1000 µg/L
		Ethion	·i 	0.01 μg/L to 1000 μg/L
		Chlorpyrifos	-i 	0.01 μg/L to 1000 μg/L
		Atrazine		0.01 μg/L to 1000 μg/L
		Methyl Parathion		0.01 μg/L to 1000 μg/L
		Malathion		0.01 μg/L to 1000 μg/L
		Butachlor		0.01 μg/L to 1000 μg/L
		Alachlor		0.01 μg/L to 1000 μg/L
		Methyl Paraoxon		0.01 μg/L to 1000 μg/L
		Malaoxon		0.01 μg/L to 1000 μg/L
		Phorate sulphone		0.01 μg/L to 1000 μg/L
		Phorate sulphoxide		0.01 μg/L to 1000 μg/L
		Monocrotophos		0.01 μg/L to 1000 μg/L
		Phorate		0.01 μg/L to 1000 μg/L
		2,4 D	AGSS/CHEM/SOP-	0.01 μg/L to 1000 μg/L
		Isoproturon	HPLC/01	0.01 μg/L to 1000 μg/L
		Polynuclear Aromatic Hy	drocarbons (PAH)	··
		Acenaphthene		0.05 μg/L to 1000 μg/L
		Fluorene	ni 	0.05 μg/L to 1000 μg/L
		Phenanthrene		0.05 μg/L to 1000 μg/L
		Anthracene		0.05 μg/L to 1000 μg/L
		Fluoranthene		0.05 μg/L to 1000 μg/L
		Pyrene		0.05 μg/L to 1000 μg/L
		Benzo (a)anthracene		0.05 μg/L to 1000 μg/L
		Chrysene		0.05 μg/L to 1000 μg/L
		Benzo (β)Fluoranthene		0.05 μg/L to 1000 μg/L
		Benzo (k) Fluoranthene		0.05 μg/L to 1000 μg/L
		Benzo (a)Pyrene		0.05 μg/L to 1000 μg/L
		Indeno(1,2,3-cd)Pyrene		0.05 μg/L to 1000 μg/L
		Dibenzo(a,h) Anthracene		0.05 μg/L to 1000 μg/L
		Benzo(g,h,i)Perylene		0.05 μg/L to 1000 μg/L
		PolyChlorinatedBiphenyl	s (PCB)	

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		2,3,4'-Trichlorobiphenyl 2,2',4,4'- Tetrachlorobiphenyl 2,3',4,4',5,6'	AGSS/CHEM/SOP- GCMS/01	0.05 μg/L to 1000 μg/L 0.05 μg/L to 1000 μg/L 0.05 μg/L to 1000 μg/L
		Hexachlorobiphenyl 2,2',4,4',5,6'- Hexachlorobiphenyl 2,2',4,4',5,6'- Heptachlorobiphenyl	-	0.05 μg/L to 1000 μg/L 0.05 μg/L to 1000 μg/L
VI.	AYUSH PRODUCTS	<u> </u> 		
1.	Ayurvedic Drugs (Syrup)	Arsenic Lead Cadmium Mercury	AGSS/CHEM/SOP/ICP- MS/13	0.1 mg/kg to 1000 mg/kg 0.1 mg/kg to 1000 mg/kg 0.1 mg/kg to 1000 mg/kg 0.1 mg/kg to 1000 mg/kg

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