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

## **BIOLOGICAL TESTING**

I.	DRUGS AND PHAR	MACEUTICALS		
1.	Raw Materials	General Test		
		Total aerobic microbial	IP 2014 page 38-50	≥10cfu/g or ≥10cfu/ml
ļ		count	IP 2014 page 129-130	
		Pathogens		
ļ		S.aureus	IP 2014 page 46	Present/ Absent/g
ļ		P.aeruginosa	IP 2014 page 46	Present/ Absent/g
		C.albicans	IP 2014 page 46	Present/ Absent/g
		E.coli	IP 2014 page 45	Present/ Absent/g
II.	FOOD & AGRICULT	URAL PRODUCTS		
1.	Bakery &	Total bacterial count	IS 5402-1999	≥10cfu/g
<u> </u>	confectionary		(Reaffirmend 2012)	
	product, cereal,	Yeast & mould count	IS 5403-1999	≥10cfu/g
ļ	pulses, cereal		(reaffirmed 2013)	
<u> </u>	product, milk	Pathogens		
	products, ready to eat products.	S.aureus	IS 5887-part (2)-1976 (reaffirmed 2013)	Present/ Absent/g
		P.aeruginosa	IS 13428:1999 (reaffirmed 2014), Annexure- D, Clause 6.1.5	Present/ Absent/g
		E.coli	IS 5887 (part 1) 1976 (Reaffirmed 2013)	Present/ Absent/g
III.	WATER			
1.	Drinking Water,	Total coliform	IS 1622-2003	<2 to>1600
	Borewell Water,	i 	(Reaffirmed 2014)	MPN/100 ml
<u></u>	Ground Water,		Ammenment- 4	

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	Surface Water, R O Water	E.coli	IS 1622-2003 (Reaffirmed 2014), Ammenment- 4	Present/ Absent/100ml
		Faecal coliform	IS 1622-2003 (Reaffirmed 2014), Ammenment- 4	<2 to>1600 MPN/100 ml
		Standard Plate Count	IS 1622-2003 (Reaffirmed 2014), Ammenment- 4	≥1cfu/ml
IV.	POLLUTION & ENV	IRONMENT		
1.	Waste Water and Effluents	Total coliform	IS 1622-2003 (Reaffirmed 2014), Ammenment- 4	<2 to>1600 MPN/100 ml
		E.coli	IS 1622-2003 (Reaffirmed 2014), Ammenment- 4	Present/ Absent/100ml
		Faecal coliform	IS 1622-2003 (Reaffirmed 2014), Ammenment- 4	<2 to>1600 MPN/100 ml

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

## **CHEMICAL TESTING**

1	WATER			
1.	Drinking Water Package Drinking	рН	IS-3025/Part11-1983 (Reff 2012)	1 to 14.0
	water & Natural Mineral Water	Total Dissolved Solids	IS-3025/Part 16-1983 (Reff 2008)	5 mg/l to 5000 mg/l
		Chloride	IS-3025/Part32-1988 Reff 2014)	3 mg/l to 2000 mg/l
		Sulphate	IS-3025/Part24-1986 (Reff 2008)	3 mg/l to 2000 mg/l
		Alkalinity	IS-3025/Part23-1986 (Reff 2003)	1.0 mg/l to 1000 mg/l
		Total Acidity	IS-3025/Part-22-1986 (Reff 2014)	1.0 mg/l to 100 mg/l
2.	Water for Construction	PH	IS : 456:2000/ IS:3025/Part 11-1983 (Reff 2012)	1 to 14
		Total Dissolved Solids (Organic & Inorganic)	IS: 456:2000/ IS:3025/Part 16-1983 (Reff 2008)	5 mg/l to 35000 mg/l
		Chloride	IS : 456:2000/ IS:3025/Part32-1988 Reff 2014)	3 mg/l to 20000 mg/l
		Sulphate	I S : 456:2000/ IS:3025/Part24-1986 (Reff 2008)	3 mg/l to 20000 mg/l
		Neutralization value with 0.02 N H <sub>2</sub> SO <sub>4</sub> (Alkalinity)	IS: 456:2000 IS:3025/Part23-1986 (Reff 2003)	0.1-50 ml Of 0.02 N H <sub>2</sub> SO <sub>4</sub>
		Total Suspended Solids	IS: 3025/Part 17 1984 (Reff 2012)	5 mg/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
II.	POLLUTION & ENV	IRONMENT		
1.	Waste Water & effluent	рН	IS-3025/Part 11-1983 (Reff 2012)	1 to 14.0
		Total Dissolved Solids	IS-3025/Part 16-1983 (Reff 2008)	5 mg/l to 50000 mg/l
		Total Hardness	IS-3025/Part-21-1964 (Reff 2014)	1 mg/l to 10000 mg/l
		Oil & Grease	IS-3025/Part-39-1991 (Reff 2003	4 mg/l to 7000 mg/l
		Total Acidity	IS-3025/Part-22-1986 (Reff 2014)	1 mg/l to 1000 mg/l
III.	DRUGS & PHARMA	CEUTICALS		
1.	Raw Materials			
a.	Amoxycillin Trihydrate	Water	IP2014 page 1054-1055	0.1% to 20%
		Specific Optical Rotation	IP2014 page 1054-1055	0 to 360 Deg
b.	Ampicillin Trihydrate	N,N Dimethyl aniline	IP2014 page 1070 -1071	90% to 110%
C.	Caffeine	Assay	IP2014 page 1237 -1238	90% to 110%
d.	Diclofenac Sodium	Light Absorption	IP2014 page 1550-1551	Comparative
e.	Ibuprofen	Assay	IP2014 page 1941-1943	90% to 110%
		Loss on Drying	IP2014 page 1941-1943	0.1% to 20%
f.	Paracetamol	Related Substances	IP2014 page 2429-2430	0.1 to 10
		Heavy Metal	IP2014 page 2429-2430	Comparative
		Sulphated Ash	IP2014 page 2429-2430	0.1% to 20%
		Assay	IP2014 page 2429-2430	90% to 110%
		Loss on Drying	IP2014 page 2429-2430	0.1% to 20%
2.	Dosage Form			
a.	Amoxycillin	Dissolution	IP2014 page 1055-1056	50% to 120%
	Capsule	Assay	IP2014 page 1055-1056	80% to 120%

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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
b.	Ascorbic acid Tablets	Assay	IP2014 page 1087	80% to 120%
c.	Soluble Aspirin	Salicylic Acid	IP2014 page 1093	Comparative
	Tablets (Dispersible)	Assay	IP2014 page 1093	80% to 120%
d.	Calcium Gluconate Tablets	Assay	IP 2014 page 1255	80% to 120%
e.	Cloxacillin Capsules	Assay	IP 2014 page 1446-1447	80% to 120%
f.	Chloroquine	Related Substances	IP 2014 page 1368-1369	Comparative
	Phosphate Tablets	Dissolution	IP 2014 page 1368-1369	As per Pharmacopoeia 80% to 120%
		Assay	IP 2014 page 1368-1369	
g.	Diclofenac Gastroresisitant Tablets	Assay	IP 2014 page1552-1553	80% to 120%
i.	Ibuprofen Tablets	Assay	IP 2014 page 1945-1946	80% to 120%
j.	Pyrazinamide Tablets	Assay	IP 2014 page 2597-2598	80% to 120%
3.	Pharmaceutical	General Tests		
	Raw Material	Solubility	IP 2014 page 174-203	(Visual inspection)
		Appearance of solution	IP 2014 page 129-130	Comparative
		Identification by IR	IP 2014 page 134-136	Comparative
		Identification by UV	IP 2014 page 139-141	Comparative
		Chemical Tests		
		General identification reactions of lons and Functional Groups	IP 2014 page 87-93	Comparative/ Qualitative
		Identification of Barbiturates	IP 2014 page 93	
		Related Foreign Steriods	IP 2014 page 94	

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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
		Other Tests		
		Limit Tests of Arsenic	IP 2014 page 96	Comparative
		Limit Tests of Heavy Metal	IP 2014 page 96-97	
		Limit Tests of Chloride	IP 2014 page 96	
		Limit Tests of Sulphate	IP 2010 page 98	
		Limit Tests of Lead	IP 2014 page 97-98	
		Determination of Nitrite	IP 2014 page 104-105	
		General Tests for Dosag	ge Forms	
		Identification by IR	IP 2014 page 134-136	Comparative
		Identification by UV	IP 2014 page 139-141	Comparative
IV.	FOOD& AGRICULT	URE PRODUCTS		
1.	Animal Feed	Sodium Chloride	IS:7874 Part-2, 1975, (Reaffirmed 2014), Clause-4	0.05 % to 10 %
		Acid Insoluble Ash	IS:7874 Part-1-1975 (Reaffirmed 2014), Clause- 10, Amendment2	0.1% to 5 %
2.	Bakery and Confec	tionary products		
a.	Biscuits	Moisture	IS: 1011- 2002 ( Reaffirmed 2013) Appendix B, Amendment.1	1% to 10%
		Acid Insoluble Ash	IS: 1011- 2002 ( Reaffirmed 2013) Appendix C Amendment.1	0.04% to 2%
		Acidity of the extracted fat as oleic acid	IS: 1011- 2002 (Reaffirmed 2013) Appendix D, Amendment-1	0.25% to 2.5%
b.	Sugar Boiled Confectionery	Sulphated Ash	IS: 6287-1985 (Reaffirmed 2015) Amendment-1, Clause6	0.5% to 2.5 %

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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
		Acid Insoluble Ash	IS: 6287-1985 (Reaffirmed 2015) Amendment-1, Clause 7	0.1% to 2.0 %
3.	Food Grain & Pulse	·		
а.	Wheat,Rice, Maize, Moong	Loss on drying	IS: 4333-2002 Part-2 (Reaffirmed 2017)	5.0% to 20%
	Dal,Urad,- Dal, ChanaDal,	Foreign matter	IS: 4333-1996 Part-1 (Reaffirmed 2017)	0.1% to 10%
	,Rajmah,Masur,Da I, Arhar Dal	Other edible grains	IS: 4333-1996 Part-1 (Reaffirmed 2017)	0.1% to 10%
		Damaged grains	IS: 4333-1996 Part-1 (Reaffirmed 2017)	0.1% to 10%
		Weevilled grains by count	IS: 4333-1996 Part-1 (Reaffirmed 2017)	0.1% to 10%
b.	Maida	Loss on drying	IS: 1009-1979, (Reaffirmed 2015) Appendix A, Amendment No2	2% to 30%
		Total ash	IS: 1009-1979, (Reaffirmed 2015) Appendix B, Amendment No2	0.2% to 10%
		Acid insoluble ash	IS: 1009-1979, (Reaffirmed 2015) Appendix C, Amendment No2	0.02% to 2.0%
		Alcoholic acidity	IS: 1009-1979, (Reaffirmed 2015) Appendix-E, Amendment No2	0.05% to 2.0%
		Gluten	IS: 1009-1979, (Reaffirmed 2015) Appendix D, Amendment No2	2% to 20%
C.	Wheat Atta	Moisture	IS: 1155-1968, Appendix A , Amendment No3	0.5% to 30%
		Total Ash	IS: 1155-1968, Appendix B, Amendment No3	0.1% to 5.0%

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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
		Acid insoluble ash	IS: 1155-1968, Appendix C, Amend No3	0.01% to 5.0%
		Alcoholic acidity	IS: 1155-1968, Appendix F, Amendment No3	0.05% to 2.0%
		Gluten	IS: 1155-1968, Appendix-D, Amendment No3	2 % to 20 %
d.	Suji (Samolina)	Loss on drying	IS: 1010– 1968, (Reaffirmed 2015) Appendix B, Amendment -3	0.5 % to 30 %
		Total ash	IS: 1010 – 1968, (Reaffirmed 2015) Appendix- C Amendment -3	0.2 % to 5 %
		Acid insoluble ash	IS: 1010 – 1968, (Reaffirmed 2015) Appendix-D, Amendment -3	0.02 % to 2.0 %
4.	Stimulant Food			
a.	Теа	Total ash	IS: 13854-1994 (Reaffirmed 2014)	2 % to 10 %
		Acid insoluble ash	IS: 13857-1993 (Reaffirmed 2014)	0.05 % to 2.0 %
		Alkalinity of water soluble	IS: 13856-1993 (Reaffirmed 2014)	0.5 to % 10 %
		Water extract	IS: 13862-1999 (Reaffirmed 2014)	10 % to 40 %
b.	Coffee Powder	Moisture	IS: 2791-1992 (Reaffirmed 2014) Amendment :4 Annexure. B	0.5% to 20 %
		Total ash	IS: 2791-1992 (Reaffirmed 2014) Amendment :4 Annexure. C	0.2 to 2.0%

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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
		Solubility in boiling water	IS: 2791-1992 (Reaffirmed 2014) Amendment :4 Annexure. E	Qualitative (Solubility)
		Solubility in cold water	IS: 2791-1992 (Reaffirmed 2014) Amendment :4 Annexure. E	Qualitative (Solubility)
		Caffeine	IS: 2791-1992 (Reaffirmed 2014) Amendment :4 Annexure. D (Volumetric Method)	0.5% to 10%
5.	Milk & Dairy Produc	ts		
a.	Chhena / Paneer	Moisture	IS: 2785- 1979 (Reaffirmed- 2016) Appendix. A	20 % to 75 %
		Milk fat	IS: 2785- 1979, (Reaffirmed- 2016) Appendix. B	1 % to 40 %
		Protein	IS: 7219-1973 (Reaffirmed - 2005) Appendix.A	0.5 % to 50 %
b.	Curd/Yogurt (Veg.)	Total solids	IS: 4079- 1967 , (Reaffirmed 2016) Amendment No 2 Appendix. A	2 % to 15 %
		Fat	IS: 4079- 1967 (Reaffirmed- 2016) Amendment no. 2 Appendix. C	0.5 % to 6.0 %
		Protein	IS: 7219- 1973 (Reaffirmed 2015) Appendix. A	0.5 % to 50 %
		Acidity	IS: 1479 Part-1 (2016) Clause 12	0.1 % to 5.0%

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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
C.	Skim Milk Powder	Moisture	IS:11623-2008 (Reaffirmed 2012)	0.5 % to 10 %
		Total solids	IS:11623-2008 (Reaffirmed 2012)	90 % to 98 %
		Titratable Acidity	IS: 11766-1986 (Reaffirmed 2012)	0.1% to 2.5 %
		Milk fat	IS: 11721 -2013	15 % to 25.0 %
		Total ash	IS: 14433-2007 (Reaffirmed 2012) Amendment -5 Annexure. B	4.0% to 10.0 %
d.	Condensed Milk	Total milk solids	IS:1166-1986 (Reaffirmed -2012) Amendment -4 Appendix B	20 % to 40 %
	<u> </u>	Fat	IS: 11762-2013	1 % to 10 %
		Sucrose	IS:1166-1986 (Reaffirmed 2012) Amendment 4 Appendix C	35 % to 45 %
		Titrable acidity	IS:1166-1986 (Reaffirmed 2012) Amendment 4 Appendix D	0.1 % to 0.5 %
6.	Spices & Condimer	 nts		
a.	Chilli powder	Ash	IS: 2322-2010 (Reaffirmed 2015) Amendment No1	1 % to 20 %
		Acid insoluble ash	IS 1797-1985 (Reaffirmed 2013) Clause- 6 Amendment No2	0.1 % to 10 %
		Non-volatile ether extract	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause- 8	1 % to 25 %

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		Crude fibre	IS 1797-1985 Amendment No2 (Reaffirmed 2013) Clause -14	5 % to 35 %
b.	Turmeric Powder	Moisture	IS 1797-1985 Amendment No2 (Reaffirmed 2013) Clause- 9	0.5 % to 20 %
		Ash	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause- 6	1 % to 10 %
		Acid insoluble ash	IS 1797-1985 (Reaffirmed- 2013) Amendment No2 Clause-8	0.1 % to 2.0 %
		Starch	IS 4706 Part-II-1978 (Reaffirmed- 2005) Clause- 9	5 % to 75 %
C.	Black Peeper Powder	Moisture	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause- 9	0.5 % to 30 %
		Ash	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause-6	1 % to 10 %
		Acid insoluble ash	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause- 8	0.1 % to 2 %
		Non-volatile ether extract	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause-14	0.1 % to 20 %

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d.	Garam Masala	Moisture	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause- 9	1% to 15 %
		Ash	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause-6	1 % to 30 %
		Acid insoluble ash	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause- 8	0.2 % to 2.0 %
		Volatile oil	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause- 15	0.25 % to 5.0 %
		Salt	IS 1797-1985 (Reaffirmed 2013) Amendment No2 Clause 16	2 % to 20 %
e.	lodized Salt	Moisture	IS: 7224-2006 (Reaffirmed 2016) Annexure. A Amendment 1	0.1 % to 10%

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

Convenor

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Program Director