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#### **BIOLOGICAL TESTING**

Ι.	FOOD AND AGRICU	LTURAL PRODUCTS		
1.	Fruit & Fruit Products	Total Plate Count	IS 5402	≥ 1 CFU/ml ≥ 10 CFU/g
		Coliform Counts	IS 5401 (Part 1) IS 5401 (Part 2)	0.30 MPN/g to 110 MPN/g ≥ 1 CFU/mI ≥ 10 CFU/g
		Yeast & Mould Count	IS 5403	≥ 1 CFU/ml ≥ 10 CFU/g
2.	Vegetable and Vegetable Products	Total Plate Count	IS 5402	≥ 1 CFU/ml ≥ 10 CFU/g
	(jam, jellies, Marmalades, juice)	Coliform Counts	IS 5401 (Part 1) IS 5401 (Part 2)	0.30 MPN/g to 110 MPN/g ≥ 1 CFU/ml ≥ 10 CFU/g
		Yeast & Mould Count	IS 5403	≥ 1 CFU/ml ≥ 10 CFU/g
3.	Nutritional Packaged food	Total Plate Count	IS 5402	≥ 1 CFU/ml ≥ 10 CFU/g
	products (Juice biscuits, kurkure sandwiches	Coliform Counts	IS 5401 (Part 1) IS 5401 (Part 2)	0.30 MPN/g to 110 MPN/g ≥ 1 CFU/ml ≥ 10 CFU/g
	Namkeen)	Yeast & Mould Count	IS 5403	≥ 1 CFU/ml ≥ 10 CFU/g
		Escherichia .Coli	IS 5887 (Part 1)	Qualitative (Absent/present)
4.	Spices & Condiments,	Total Plate Count	IS 5402	≥ 1 CFU/ml ≥ 10 CFU/g
	Whole & Grounded	Coliform Counts	IS 5401 (Part 1) IS 5401 (Part 2)	≥ 10 CFU/g

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		Yeast & Mould Count	IS 5403	≥ 10 CFU/g
		Escherichia .Coli	IS 5887(Part 1)	Qualitative
				(Absent/present)/g
		Salmonella	IS 5887(Part 3)	Qualitative
				(Absent/present)/g
5.	Edible Maize	Total Plate Count	IS 5402	≥ 10 CFU/g
	Starch Custard	Coliform Counts	IS 5401 (Part 1)	≥ 10 CFU/g
	Powder		IS 5401 (Part 2)	-
		Yeast & Mould Count	IS 5403	≥ 10 CFU/g
6.	Milk & Milk	Total Plate Count	IS 5402	≥ 1 CFU/mI
	Products			≥ 10 CFU/g
	As Milk powder	Coliform Counts	IS 5401 (Part 1)	1.0 MPN/g to 110 MPN/g
	Cheese		IS 5401 (Part 2)	≥ 1 CFU/mI
	Condensed milk,			≥ 10 CFU/g
	Dairy whitener,	Yeast & Mould Count	IS 5403	≥ 1 CFU/ml
	SMP,WMP,Paneer			≥ 10 CFU/g
		Escherichia coli	IS 5887 (Part 1)	Qualitative
				(Absent/present)/
			<u> </u>	1 ml or g
		Salmonella Spc.	IS 5887(Part 3)/	Qualitative
			IS 15187	(Absent/present)/
				25 g or ml
7.	Nuts and Nut	Total Plate Count	IS 5402	≥ 10 CFU/g
	products	Coliform Counts	IS 5401 (Part 1)	0.30 MPN/g to
			IS 5401 (Part 2)	110 MPN/g
				≥ 10 CFU/g
		Yeast & Mould Count	IS 5403	≥ 10 CFU/g
8.	Snacks & Instant	Total Plate Count	IS 5402	≥ 1 CFU/ml
	Mixes			≥ 10 CFU/g
		Coliform Counts	IS 5401 (Part 1)	≥ 10 CFU/g
			IS 5401 (Part 2)	
		Yeast & Mould Count	IS 5403	≥ 10 CFU/g
	<u> </u>	<u> </u>	<u> </u>	

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II.	ANIMAL FOOD & F	EED		
1.	Animal Feed (Poultry feed, cattle feed, compound feed)	Total Plate Count Coliform Counts Yeast &Mould Count	IS 5402 IS 5401 (Part 1) IS 5401 (Part 2) IS 5403	≥ 10 CFU/g ≥ 10 CFU/g ≥ 10 CFU/g
II.	WATER			
1.	Packaged Drinking Water	Total Plate Count At 370C Total Plate Count At 220C Yeast &Mould Escherichia Coli Coliform count	IS 5402 IS 5403 IS 5887 (Part 1) IS 15185 IS 5401 (Part 1)	<ul> <li>≥ 1 CFU/mI</li> <li>≥ 1 CFU/mI</li> <li>≥ 1 CFU/mI</li> <li>Qualitative (Absent/present)/250mI</li> <li>Quantitative</li> </ul>
2.	Drinking water	Total Plate Count At 370C Total Plate Count At 220C Yeast &Mould Escherichia Coli Coliform count	IS 15185 IS 5402 IS 5402 IS 5403 IS 5887 (Part 1) IS 15185 IS 5401 (Part 1) IS 15185	<ul> <li>≥ 1 CFU/mI</li> <li>≥ 1 CFU/mI</li> <li>Quantitative</li> <li>Qualitative</li> <li>(Absent/present)/250mI</li> <li>≥ 1 CFU/mI</li> </ul>

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SI Broduct / Matorial	Specific Test Performed   Test Ma	thed Specification   Pange of Testing /	

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

#### **CHEMICAL TESTING**

I.	FOOD & AGRICULT	URAL PRODUCTS		
1.	OTHERS Nutritional Analysis	Fat	IS 4684 IS 11721 IS 4079	0.02 % to 50 %
	Packaged food	Protein	IS 7219	0.05 % to 70 %
	products (Juices,	sucrose	IS 4941	1 % to 60 %
	biscuits, fruits and vegetable	Carbohydrates	IS 1656	0.5 gm/100gm to 90 gm/100gm
	products, sandwiches,	Energy Value	IS 9487	4 Kcal/100g to 900 Kcal/100g
	Namkeen)	Crude fiber	IS 10226 (Part 1)	0.02 % to 40 %
		Vitamin C	IS 5838	2.5 mg/100 gm to 500 mg/100 gm
2.	Bakery & confectionery products	Moisture	IS 12711 IS 2650 IS 6287	0.5 % to 10 %
	(Sugar boiled candy, Bubble	AshSulphated	IS 4079 IS 6287	0.5 % to 2.0 %
	gum,Biscuit,Bread ,Ruusk,Cookies)	Protein(NX6.25)	IS 4079 IS 6287	0.5 % to 30.0 %
		Carbohydrate	IS 1656 FSSAI Lab Manual 4	0.1 % to 99 %
		Acid Insoluble Ash	IS 6287 IS1004 FSSAI Lab Manual 4	0.1 % to 1 %
		Energy	IS 9487	4 Kcal/100 gm to 900 Kcal/100 gm
		Total sugars	IS 4079 IS 6287 IS 2650	1 % to 99 %

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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
		Reducing sugars	IS 4079 IS 6287	1 % to 80 %
		Vitamin C	IS 58388	2 mg/100gm to 600 mg/100gm
3.	Cereals, pulses &	Acid Insoluble Matter	IS 10502	0.02 % to 10 %
	cereal products	Loss on drying	IS 1485	0.05 % to 10 %
	(Grains, Rice,	Total ash	IS 1485	0.02 % to 10 %
	Wheat, Maize,	Acid insoluble ash	IS 1485	0.01 % to 0.5 %
	Moong Dal, Gram	Protein (Nitrogen)	IS 1485	0.2 % to 30 %
	wheat Flour, Maida, Soya Flour,	Free acidity	IS 1485	1.0 ml/100g to 4.0 ml/100g
	Corn Flour, Besan, mix, Sattu,	Other edible grains	IS 4333 (Part 1) IS 2813	0.05 % to 2 %
	Suji, Dalia, Cereal Based )	Damaged grains	IS 4333 (Part 1) IS 2813	0.05 % to 20 %
		Weevilled grains	IS 4333 (Part 1) IS 2813	0.05 % to 20 %
		Foreign matter	IS 4333 (Part 1) IS 2813	0.05 % to 2 %
4.	Edible oils & fats	Moisture	IS 548(Part 1)	0.01 % to 10 %
	(All edible and	lodine value	IS 548 (Part 1)	6.5 % to 190 %
	Non edible fats, (Oil blends,	Peroxide value	IS 548 (Part 1)	1 meq/1000gm to 10 meq/1000gm
	mustard oil, soya	Specific gravity	IS 548 (Part 1)	0.8 to 1.1
	bean oil, olive oil,	FFA as (Oleic acid)	IS 548 (Part 1)	0.05 % to 2.0 %
	til oil, rice bran oil	Saponification value	IS 548 (Part 1)	160 to 250
	and Coconut oil, Palm oil, Palm olein, Palm stearin, Palm super other edible oil, Palm kernel	Acid value of Extracted Fat	IS 548 (Part 1)	0.1 % to 5.0 %
	oil, Palm kernel stearin, Maize oil)			

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SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Limits of Detection
5.	Food additives &	Moisture	IS 7224	0.20 % to 5.0 %
	preservatives	Chloride as NaCl	IS 7224	90 % to 99 %
	(lodized salt)	Iodine Content	IS 7224	5 mg/kg to 50 mg/kg
6.	Fruit & fruit	Ash	IS 3500	0.02 % to 10 %
	products	Protein	IS 7219	0.1 % to 30 %
	(Ketchup, Jam,	Salt	IS 2860	0.1 % to 5 %
	Jellies &	Soluble solids	IS 3882	1 % to 50 %
	Marmalades,	Sugar	IS 3547	1 % to 70 %
	Chutneys, Pickle, Canned Fruits,	Vitamin C	IS 5838	2 mg/100 g to 600 mg/100 g
	Raw & Processed	Acid insoluble ash	IS 3500	0.02 % to 5 %
	Fruits And	pH Value	IS 2860	1 to 10
	Vegetables,)	Acidity	IS 2860	0.05 % to 5 %
7.	Herbs, spices &	Moisture	IS 1797	1.0 % to 20.0 %
	condiments	Total Ash (Dry Basis)	IS 1797	0.5 % to 10.0 %
	(Whole & Grounded)	Acid Insoluble Ash (Dry Basis)	IS 1797	0.1 % to 2.0 %
	,	Water Insoluble ash (Dry Basis)	IS 1797	0.1 % to 5.0 %
		Cold water soluble extract (Dry Basis)	IS 1797	1.0 % to 35.0 %
		Volatile Oil (Dry Basis)	IS 1797	0.4 ml/100 gm to 5.0 ml/100 gm
		Energy Value	IS 9487	4 Kcal/100 g to 900 Kcal/100 g
8.	Honey & honey	Acidity as Formic Acid	IS 4941: Annexure E	0.1 % to 2.0 %
	products	Total Reducing Sugars	IS 4941: Annexure C	40.0 % to 80.0 %
		Moisture	IS 4941	13 % to 25 %
		Optical Density, at 660 nm	IS 4941	0.001 to 0.800
	-	Specific Gravity	IS 4941	1.21 to 1.50
	-	Sucrose	IS 4941	0.40 % to 10 %
	-	F/G ratio	IS 4941	0.80 to 1.8
	-	Ash	IS 4941	0.002 % to 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
		Colour	IS 4941	Red to Brown
9.	Oil seeds & by-	Moisture Content	IS 3579	0.02 % to 20 %
	products	Impurities	IS 3579	0.1 % to 20 %
	(Oil Seeds &	Oil Content	IS 3579	0.1 % to 60 %
	Related Products, Raw & processed	Acid value for extracted fat	IS 548 (Part 1)	0.05 % to 20 %
	oil cakes, De-oiled cakes)	Damaged and weevilled kernels	IS 3579 IS 2323	0.1 % to 20 %
		Slightly damaged kernels	IS 3579 IS 2323	0.1 % to 20 %
		Shrivelled and immature kernels	IS 3579 IS 2323	0.02 % to 20 %
		Other Food grain	IS 3579 IS 2323	0.02 % to 10 %
10.	Starch& Starch	Moisture	IS 4706 (Part 2)	5.0 % to 14.0 %
	Products	Total Ash	IS 4706 (Part 2)	0.02 % to 10 %
	(Custar Powder, Corn Flakes)	Acid Insoluble Ash	IS 1005 IS 4706 (Part 2)	0.02 % to 0.5 %
		Crude Fiber	IS 1158	0.25 % to 10 %
		Alcoholic Acidity	IS 1158	0.02 % to 0.5 %
11.	Starch & Starch Products	Moisture	IS 1005 IS 4706(Part 2)	0.02 % to 12.5 %
	(Edible Maize Starch)	Total Ash	IS 1005 IS 4706(Part 2)	0.10 % to 5.0 %
		Acid Insoluble Ash	IS 1005 IS 4706(Part 2)	0.02 % to 1 %
		Starch	IS 1005 IS 4706(Part 2)	10.0 % to 99 %
		Protein	IS 1005 IS 4706(Part 2)	0.2 % to 30.0 %
		pH of Aqueous solution	IS 1005 IS 4706(Part 2)	01 to 12
		Alcoholic Acidity	IS 1005 IS 4706(Part 2)	0.02 % to 0.1 %

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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.	Milk & dairy	Solids Not Fat (SNF)	IS 1479(Part 2)	By calculation
	products (Milk Powder,	Total solids	IS 1479 (Part 2) IS 4883	0.5 % to 80 %
	Cheese, Condensed Milk, Dairy Whitener,	Fat	IS 11721 IS 1479 (Part 2) IS.4883	0.5 % to 30 %
	SMP, WMP, Paneer, Casein, Lactose powder,	Moisture	IS 3508 IS 3507 IS 4883	0.05 % to 20 %
	WPC, Khoa, Ghee)	Acidity	IS 3507 IS 4883 IS 11766 IS 1165	0.1 % to 10 %
		Salt	IS 3507	0.05 % to 5.0 %
		Ash	IS 14433 (Part I) IS 1165 FSSAI Lab Manual 1	0.01 % to 10 %
		Protein	IS 7219	0.5 % to 90 %
		Peroxide value of extracted fat	IS 3508	0.2 to 100 meq/kg
		Free Fatty Acid	IS 3508	0.05 % to 10 %
		Sucrose	IS 4079	0.5 % to 50 %
		Carbohydrate	IS 1656	By calculation
13.	Sugar & sugar	Moisture	IS 15279	0.05 % to 10.0 %
	products	Sucrose	IS 15279	90.0 % to 100.0 %
	(Sugar & its by	Total Ash	IS 15279	0.02 % to 5.0 %
	products)	Colour Value	IS 15279	50 to 1000 (ICUMSA)
		Sulphated Ash	IS 15279	0.02 % to 10 %
		Water insoluble matter	IS 15279	0.02 % to 10 %
14.	Nuts & nut	Moisture	IS 4684	0.02 % to 30 %
	products	Total ash	IS 4684	0.02 % to 20 %
		Fat	IS 4684	0.05 % to 70 %
		Protein	IS 4684	0.1 % to 80 %
		Acid Insoluble ash	IS 4684	0.02 % to 10 %

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		Acid value of extracted Fat	IS 4684	0.01 % to 20 %
		Carbohydrate	IS 1656	1 % to 99 %
		Energy Value	IS 9487	4 Kcal/100g to 900 Kcal/100g
		Salt	IS 253	0.1 % to 10 %
	-	Crude fiber	IS 4684	0.1 % to 30 %
		Peroxide Value	IS.548:(Part 1)	0.5 meq/kg to 200 meq/kg
II.	ANIMAL FOOD & F	EEDS		
1.	Poultry Feed,	Moisture	IS 7874 (Part I)	Upto 20 %
	Cattle Feed,	Crude Protein	IS 7874 (Part I)	2 % to 49 %
	Compound Feed	Crude fat	IS 7874 (Part I)	0.1 % to 20 %
		Crude fiber	IS 7874 (Part I)	0.2 % to 25 %
		Total Ash	IS 7874 (Part I) IS 10502	0.05 % to 10 %
		Salt as NaCl	IS 7874 (Part 2)	0.1 % to 10 %
III.	WATER			
1.	Drinking Water,	colour	IS 3025(Part 4)	1 Hazen to 50 Hazen
	Water	Odour	IS 3025(Part 5)	Qualitative(Agreeable/ Disagreeable)
		Taste	IS 3025(Part 8)	Qualitative(Agreeable/ Disagreeable)
		Turbidity	IS 3025(Part 10)	1 NTU to 2000 NTU
		Total dissolve solids	IS 3025(Part 16)	1.0 mg/l to 3000 mg/l
		Total soluble solids	IS 3025(Part 17)	1.0 mg/l to 2000 mg/l
		Total Solids	IS 3025(Part 15)	1 mg/l to 10000 mg/l
		рН	IS 3025(Part11)	3 to 12
		Total Hardness as (CaCO3)	IS 3025(Part 21)	1 mg/l to 5000 mg/l

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		Total Alkalinity	IS 3025(Part 23)	1 mg/l to 5000 mg/l	
		Acidity (as CaCO <sub>3</sub> )	IS 3025(Part 22)	1 mg/l to 500 mg/l	
		Chloride	IS 3025(Part 32)	1 mg/l to 2500 mg/l	

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#### MECHANICAL TESTING

I.	TOYS AND SIMILAR PRODUCTS			
1.	Toys and similar products	Sharp point test	IS 9873(Part 1): Clause 5.9	Qualitative
		Sharp edge test	IS 9873(Part 1): Clause 5.8	Qualitative
		Torque test	IS 9873(Part 1): Clause 5.24.5	Qualitative
		Compression test	IS 9873(Part 1): Clause 5.24.7	Qualitative
		Flexure test	IS 9873(Part 1): Clause 5.24.8	Qualitative
		Drop test	IS 9873(Part 1): Clause 5.24.2 & 5.24.3	Qualitative
		Impact test	IS 9873(Part 1): Clause 5.14	Qualitative
		Thickness	IS 9873(Part 1): Clause 5.10	0.01mm to 10.0mm Qualitative
		Flammability test	IS 9873 (Part 2)	Qualitative