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

CHEMICAL TESTING

I.	FOODS & AGRICULTURAL PRODUCTS			
1.	Cereals & Pulses, and cereal products			
a.	Chana (Bengal Gram),	Moisture	IS 4333(Part 2)	5 %to 20%
	Maize,Bajra, Wheat,Barley	Foreign matter	IS 4333(Part 1)	0.1 % to 20%
		Damaged Seeds	IS 4333(Part 1)	0.1 % to 15%
		Broken, Splits	IS 4333(Part 1)	0.1 % to 15%
		Green, Immature, Shrunken, Shrivelled seeds	IS 4333(Part 1)	0.1 % to 15%
		Weeviled Seeds / Insect damaged	IS 4333(Part 1)	0.1 % to 15%
		Varietal admixture	IS 4333(Part 1)	0.1 % to 15%
		Slightly Damaged or touched	IS 4333 (Part 1)	0.5 % to 15%
		Count Per 100g	IS 4333(Part 4)	325 to 460
		Shrivelled or Immature	IS 4333(Part 1)	0.1 % to 15%
		Other edible grains	IS 4333(Part 1)	0.1 % to 15%

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		Total defects [foreign matter, other edible grains, damaged kernel (other than infestation damaged), shrivelled/ broken grains]	IS 4333(Part 1)	By Calculation
		Hectolitre Weight	IS 4333(Part 3)	60 kg/HL to 90 kg/HL
		Damaged Discoloured	IS 4333(Part 1)	0.1 % to 20 %
		TCW (Weight of thousand grains)	IS 4333(Part 4)	30 g to 60 g
b.	Atta	Moisture	IS 1155	5 % to 15%
		Total Ash	IS 1155	0.1 % to 2.5 %
		Acid insoluble ash	IS 1155	0.02 % to 2 %
		Protein (N X 5.70)	IS 7219	5 % to 16%
		Dry Gluten (On Dry Basis)	IS 1155	4 % to 14%
		Alcoholic Acidity	IS 1155	0.01 % to 5%
		Crude fiber	IS 10226(Part 1) / IS 1155	0.1 % to 10%
		Carbohydrates	IS 1656	By Calculation
		Fat	AOAC 922.06, 20 th Edition	0.1 % to 5%
		Energy	IS 14433	By Calculation

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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.	Maida, Besan	Moisture	IS 1009	5 % to 15%
		Total Ash	IS 1009	0.1 % to 2%
		Acid insoluble ash	IS 1009	0.02 % to 2%
		Protein (N X 5.70)	IS 7219	5 % to 30%
		Dry Gluten (On Dry Basis)	IS 1009	3 % to 17%
		Crude fiber	IS 10226(Part 1)	0.1 % to 10%
		Carbohydrates	IS 1656	By Calculation
		Fat	AOAC 922.06, 20 th Edition	0.1 % to 5%
		Alcoholic Acidity	IS 1009	0.05 % to 0.5%
d.	Bombay Rawa, Suji	Moisture	IS 1010	5 % to 15%
	Cuji	Total Ash	IS 1010	0.5 % to 2.5%
		Acid insoluble ash	IS 1010	0.02 % to 0.5%
		Protein	IS 7219	4 % to 13%
		Dry Gluten (On Dry Basis)	IS 1010	3 % to 12%
		Crude fiber	IS 10226(Part 1)	0.1 % to 10%
		Carbohydrates	IS 1656	30 % to 70% (By Calculation)
		Fat	AOAC 20 th edition 922.06	0.1 % to 5%
		Alcoholic Acidity	IS 1010	0.05 % to 0.5%
		Energy	IS 14433	1 Kcal per 100g to 1000 Kcal per 100g

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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.	Guar Seeds and Products			
a.	Guar Seeds	Whitish seeds	IS 2813	20 % to 100 %
		Volatile matter/ Moisture	IS 7437	2 g/100g to 15 g/100g
		Foreign matter	IS 2813	0.1 % to 10 %
		Damaged seeds	IS 2813	0.1 % to 10 %
b.	Guar Gum	Moisture/ Volatile matter	IS 7437	2 % to 15 %
		Foreign Particles (All non gum particles)	IS 2813	0.1 % to 5%
		Particle Size (pass through 14 mesh / 20 mesh)	IS 2813	0.01 % to 10 %
		Black, dark red and brown coloured splits	IS 2813	0.1 % to 3 %
		Undehusked Splits	IS 2813	0.1 % to 20 %
		Protein (Nx6.25)	IS 7437/IS 7219	1 % to 15 %
		Residue Insoluble in acid	IS 3988	0.1 % to 7 %
		Viscosity at 27ºC	IS 3988	500 centipose to 5000 centipose
		Total ash	IS 10502/ IS 7437	0.1 % to 2. 5%
		Gum Content	IS 7437	By Calculation
		pH (1% Aqueous Solution)	IS 7437	1 to 14

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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.	Herbs, Spices and Condiments			
a.	Turmeric Fingers	Freedom from moulds and insect infestation	IS 3576	Qualitative (Present/Absent)
		Moisture	IS 1797	5 % to 20 %
		Defective Rhizomes	IS 3576	0.1 % to 15%
		Extraneous Matter	IS 3576	0.01 % to 10%
b.	Turmeric Powder	Moisture	IS 1797	8 % to 20%
		Total Ash	IS 1797	1 % to 10%
		Acid insoluble ash	IS 1797	0.02 % to 2.5%
		Chromate	IS 3576	Qualitative
C.	Cumin Seeds	Moisture	IS 1797	2 % to 15%
		Foreign matter	IS 2447	0.1 % to 10 %
		Damaged Discoloured shriveled and Immature seeds	IS 2447	0.5 % to 10%
		Insect damaged matter	IS 2447	0.1 % to 20%
d.	Chilli Whole	Moisture	IS 1797	1 % to 20%
		Extraneous matter	IS 2322	0.1 % to 10 %
		Unriped and marked and broken fruits	IS 2322	0.1 % to 50 %

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		Insect Damaged Matter	IS 2322	1 % to 50 %
		Color	IS 2322	Qualitative (Visual)
		Free from Moulds, insects, etc	IS 2322	Qualitative (Present/Absent)
е.	Chilli and chilli	Moisture	IS 1797	1 % to 18%
	products	Total Ash	IS 1797	1 % to 10%
		Acid insoluble ash	IS 1797	0.02 % to 2%
		Crude fibre	IS 1797	20 % to 40%
f.	Coriander Whole & Powder	Moisture	IS 2443	1 % to 20%
		Total Ash	IS 2443	2 % to 8%
		Acid insoluble ash	IS 2443	0.02 % to 2%
		Crude fiber	IS 1797	20 % to 40%
		Extraneous matter	IS 2443	0.1 % to 10%
		Damaged Discolored & Shrivelled seeds	IS 2443	0.1 % to 10%
		Weevilled seeds	IS 2443	0.1 to 10
		Coriander Splits	IS 2443	0.1 to 50

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g.	Pepper	Moisture	IS 1797	1 % to 20%
		Light berries	IS 1798	0.1 % to 5%
		Foreign matter	IS 1797	0.05 % to 10%
4.	Oil seed and by products			
a.	Castor Seed	Oil content	IS 3579	30 % to 60 %
		Fotri (Husk) and damaged Seeds	IS 3579	0.1 % to 10 %
		Sand, Silica and Stones	IS 3579	0.1 % to 10 %
		Moisture	IS 3579	1 % to 10%
b.	Soyabean	Foreign matter/ Impurities	IS 3579	0.1 % to 10 %
		Green seeds	STP No.NCML-TC/STP/001 Issue No.01;Effective date 25.11.2016	0.1 % to 20 %
		Damaged Seeds	IS 3579	0.1 % to 20 %
		Protein (N x 6.25)	IS 7219	5 % to 50%
		Moisture	IS 3579	2 % to 15%
C.	Mustard Seeds	Moisture	IS 3579	1 % to 10 %
		Oil Content	IS 3579	30 % to 50 %
		Free fatty acid (as oleic acid)	IS 548(Part 1)	0.1 % to 3 %
		Impurities (Foreign matter)	IS 3579	0.1 % to 10 %

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		Damaged and shriveled	IS 3579	0.1 % to 20 %
		Insect damaged matter	IS 3579	0.1 % to 20 %
5.	Edible Oil and Fats			
a.	Oil & Fats	Moisture	IS 548 (Part 1)	0.01 % to 2%
		Saponification value	IS 548 (Part 1)	100 to 250
		Refractive Index at 40°C	IS 548 (Part 1)	1.4220 to 1.4890
		lodine value	IS 548 (Part 1)	5 to 200
		Unsaponifiable matter	IS 548(Part 1)	0.1 % to 1%
		Acid value	IS 548(Part 1)	0.1 to 10
		Free Fatty Acid	IS 548(Part 1)	0.1 % to 5%
		Peroxide value (meq /1000g)	IS 548(Part 1)	0.1 meq/1000 g to 20 meq/1000 g
		Insoluble Impurities	IS 548(Part 1)	0.01 % to 5 %
		Specific gravity at 30/30 ⁰ C	IS 548(Part 1)	0.6 to1.4
		Baudouin Test in Ghee/Vanaspati	IS 548(Part 2)	Qualitative (Positive/Negetive)
		Mineral Oil test	IS 548(Part 2)	Qualitative (Present/Absent)

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6.	Milk and Dairy Products	Total solids	IS 1479(Part 2)/ IS 11622	1 % to 98%
		Acidity of Milk	AOAC 33.2.06 (947.05)	0.1 % to 5%
		Milk Fat	IS 11721	0.05 % to 10%
		Milk Protein	IS 7219	1 % to 40%
		Total ash	IS 14433	1 % to 10 %
		Solids Not Fat	IS 10083	5 % to 20%
7.	Sugar and By Products			
a.	Sugar (Raw)	Dirt, Filth, Iron filings, and Added Colouring matter	IS 15279/ IS 5982	Qualitative (Present/Absent)
		Extraneous matter	IS 15279/ IS 5982	0.01 % to 5%
		Moisture /Loss on drying	IS 15279/ IS 5982	0.01 % to 15%
		Grain size retained on sieves (1.18MM, 600 Micron & 425 Micron)	IS 498	60 % to 100%
		ICUMSA Colour	ICUMSA - GS9/1/2/3-8	50 ICUMSA units to 350 ICUMSA units
11.	ANIMAL FOOD & FI	EEDS		
1.	Animal Feeds	Total Ash	AOAC 942.05 20 th Edition, IS 7874 (Part 1)	0.1 % to 10%
		Acid insoluble Ash	IS 7874 (Part 1)	0.02 % to 10%
		Oil Content / Crude fat	IS 3579 / IS 7874(Part I)	2 % to 10 %

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		Protein (N x 6.25)	IS 7219	0.1 % to 80%
		Crude Fiber	AOAC 20 th edition, 4.6.01 (962.09) / IS 10226 (Part 1)	0.1 % to 15%
		pH of aqueous extract (10%)	AOAC 20 th edition, (940.20)	1 % to 14
2.	Oil Seed Meal/ Cake	Crude fibre	IS 7874 (Part I)	5 % to 35%
	Oanc	Oil Content	IS 7874 (Part I)	0.05 % to 10%
		Protein (N x 6.25)	IS 7874(Part 1)	15 % to 50%
		Total Ash	IS 7874(Part 1)	0.5 % to 10%
		Sand and Silica or Acid insoluble ash	IS 7874(Part 1)	0.02 % to 10%
		Moisture	IS 7874 (Part 1)	5 % to 15%
111.	WATER			
1.	Drinking Water, Borewell Water	рН	IS 3025(Part 11)	1-13
	and RO Water Tol	Total Dissolved Solids	IS 3025(Part 16)	10 mg/l to 2000 mg/l
		Conductivity	IS 3025(Part 14)	5 μS/cm to 10000 μS/cm
		Chloride	IS 3025(Part 32)	10 mg/l to 500 mg/l
		Alkalinity	IS 3025(Part 23)	5 mg/l to 1000 mg/l
		Total hardness	IS 3025(Part 21)	10 mg/l to 1000 mg/l
		Nitrate	IS 3025(Part 34)	0.5 mg/l to 100 mg/l

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		Nitrite	IS 3025(Part 34)	0.01 mg/l to 10 mg/l
		Fluoride	IS 3025(Part 60)	Qualitative
		Sulphate	IS 3025(Part 24)	10 mg/l to 500 mg/l
		Calcium	IS 3025(Part 40)	5 mg/l to 500 mg/l
		Magnesium	IS 3025(Part 46) (Calculation Basis)	5 to 500 mg/l (BY Calculation)
		Sodium	IS 3025(Part 45)	1.0 mg/l to 500 mg/l
		Potassium	IS 3025(Part 45)	1.0 mg/l to 500 mg/l