

Laboratory **Bali Test House Pvt. Ltd., Street No.12, Jeevan Nagar, Focal Point, Phase- V, Ludhiana, Punjab**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7302**

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
<b><u>BIOLOGICAL TESTING</u></b>				
<b>I.</b>	<b>WATER</b>			
<b>1.</b>	<b>Packaged Drinking Water/ Packed Natural Mineral Water</b>	Escherichia coli	IS: 5887 (Part 1) 1976 (RA 2009)	Qualitative (Present/Absent per 250 ml)
		Coliform	IS 5401 (Part 1)-2012	Qualitative (Present/Absent per 250 ml)
		Faecal Streptococci	IS 5887 (Part 2)-1976 (RA 2013)	Qualitative (Present/Absent per 250ml.)
		Sulphite reducing Bacteria	IS: 13428-2005, Annex. C, (RA 2014))	Qualitative(Present/Absent per 50 ml)
		Pseudomonas aeruginosa	IS 13428-2005, Annex. D, (RA 2014))	Qualitative(Present/Absent per 250 ml)
		Total Viable Count at 22°C	IS:5402-2012	≥1cfu/ml
		Total Viable Count at 37°C	IS 5402-2012	≥1cfu/ml
		Yeast &Mould	IS 5403-1999(RA 2013)	Qualitative (Present/Absent per 250 ml)
		Salmonella	IS 5887 (Part 3)-1999 (RA 2009), IS:15187-2016 OR ISO 6340 :1995	Qualitative (Present/Absent per 250 ml)
		Shigella	IS 5887 (Part 7)1999 (RA 2013)	Qualitative(Present/Absent per 250 ml)
		Vibrio cholera & V. parahaemolyticus	IS 5887 (Part 5)-1976 (RA 2013)	Qualitative(Present/Absent per 250 ml)
		Staphylococcus aureus	IS 5887 (Part 2)-1976 (RA 2013)	Qualitative(Present/Absent per 250 ml.)

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2.	Swimming pool water	Standard Plate Count	IS 3328-1993 (RA 2013)	≥1cfu/ml
3.	Drinking Water	Escherichia coli	IS 1622-1981 (RA 2014)	Qualitative(Present/Absent per 100 ml.)
		Coliform Bacteria	IS 1622-1981, (RA 2014)	≥1.80MPN per 100ml
		Faecal Coliform Bacteria	IS 1622-1981, (RA 2014)	Qualitative(Present/Absent per 100 ml)
4.	Water For Processed Food Industry	Coliform Bacteria	IS 1622-1981, (RA 2014)	≥1.80 MPN/100ml
		Standard Plate Count	IS 1622-1981, (RA 2014)	≥1cfu/ml
		Thermophilic Bacteria	IS 4251-1967, (RA 2015)	≥1cfu/ml
		Proteolytic and Lipolytic Organisms	IS 4251-1967, (RA 2015)	≥1cfu/ml
	Water for medicinal purpose	Bacterial Endo toxin test	IP 2014	Qualitative (Pass/Fail)
5.	UV, Based Water Purifier	Microbiological test for UV water purifier by challenge organism	IS 14724: 1999 Clause. 6.2.2.3 (RA 2009)	0 to 100 %
II.	<b>ENVIRONMENT AND POLLUTION</b>			
1.	Waste Water & Industrial effluents	Faecal Coliform, (MFT)	APHA-23 <sup>rd</sup> Edition Chapter- 9222 D, Page no. 9-89	≥1cfu/100ml
		Faecal Streptococci, (MPN)	IS 1622-1981 (RA 2014) or APHA-23 <sup>rd</sup> Edition Chapter- 9230 B, Page no. 9 – 118	≥1.80MPN/100ml
		Faecal Streptococci, (MFT)	IS 1622-1981 (RA 2014) or APHA-23 <sup>rd</sup> Edition Chapter- 9230 C, Page no. 9-119	≥1cfu/100ml
		Total Coliform, (MFT)	APHA-23 <sup>rd</sup> Edition Chapter- 9222 B, Page No.9-82	≥1cfu/100ml
2.	Bioburden			

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	<b>estimation of Classified &amp; Non Classified area/Items</b>			
a.	<b>Air/ Swabs</b>	Total plate count	IS 5402- 2012	≥ 1 cfu /x cm <sup>2</sup> /plate/Swab
		Yeast and mould count	IS 5403-1999 (RA 2013)	≥ 1 cfu /x cm <sup>2</sup> /plate/Swab
		Coliform	IS 5401 (Part-I) 2012	≥cfu/xcm <sup>2</sup>
		E. coli	IS 5887 (Part-I) 1976, (RA 2009)	Qualitative (Present /Absent/ Swab) Qualitative (Present /Absent/ x cm <sup>2</sup> )
		Salmonella	IS 5887(Part-III)- 1999 (RA 2009)	Qualitative (Present /Absent/ Swab ) Qualitative (Present /Absent/ x cm <sup>2</sup> )
III.	<b>FOOD AND AGRICULTURAL PRODUCTS</b>			
1.	<b>Processed cereal Based Weaning Foods</b>	Bacterial Count Coliform	IS 5402-2012 IS 5401(P-1)-2012	≥10 cfu/gm ≥10 cfu/gm
2.	<b>Milk Cereal Based Complementary Food</b>	Bacterial Count	IS 5402-2012	≥10 cfu/gm
		Coliform	IS 5401(P-1)-2012	≥10 cfu/gm
		Staphylococcus aureus	IS 5887(P- 2)-1976, ((RA 2013))	Qualitative (Present/Absent per gm/ 25gm)
		Salmonella	IS :5887(P-3)-1999 (RA 2009)	Qualitative (Present/Absent per 25g)
		Shigella	IS 5887(P7):1999, (RA 2013)	Qualitative (Present/Absent per 25g)
3.	<b>Ready to Eat Protein Rich Extruded Foods</b>	Bacterial Count	IS 5402-2012	≥10 cfu/gm
		Coliform	IS 5401(P-1)-2012	≥10 cfu/gm
		Salmonella	IS 5887(P-3)-1999 (RA 2009)	Qualitative (Present/Absent per 25g)

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4.	<b>Protein Rich Supplements for Infants and Pre-school Children</b>	Bacterial Count	IS 5402-2012	≥10 cfu/gm
		Coliform	IS 5401(P-1)-2012	≥10 cfu/gm
5.	<b>Ready to Eat Extruded snacks</b>	Bacterial Count	IS 5402-2012	≥10cfu/gm
		Coliform	IS 5401(P-1)-2012	≥10 cfu/gm
		E. coli	IS 5887 (P-1)-1976, (RA 2009)	Qualitative(Present/Absent per g)
		Salmonella	IS 5887(P-3)-1999, (RA 2009)	Qualitative(Present/Absent per 25g)
		Shigella	IS 5887(P-7):1999 (RA 2013)	Qualitative(Present/Absent per 25g)
6.	<b>Quick Frozen Vegetables</b>	Bacterial Count	IS 5402-2012	≥10cfu/gm
		Coliform	IS 5401(P-1)-2012	≥10 cfu/gm
		E. coli	IS 5887 (P-1)-1976 (RA 2009)	Qualitative(Present/Absent per g)
		Staphylococcus aureus	IS 5887 (P- 2)-1976 (RA 2013)	Qualitative(Present/Absent per 25g)
		Total Plate Count	IS 5402-2012	≥1cfu/ml
7.	<b>Non-alcoholic Beverages</b>	Coliform Count	IS 5401(P-1)-2012	≥1cfu/ml
		Yeast &Mould Count	IS 5403:1999(RA 2013)	≥1cfu/ml
		Vibrio cholerae	IS 5887 (P-5)-1976 (RA 2013)	Qualitative (Present/Absent per /25ml)
		Vibrio parahemolyticus	IS 5887 (P-5)-1976 (RA 2013)	Qualitative (Present/Absent per /25ml)
		8.	<b>Edible Full Fat</b>	Total Bacterial Count

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	<b>Soya Flour</b>	Coliform	IS 5401(P-1)-2012	≥10 cfu/g
		Salmonella	IS :5887(P-3)-1999, (RA 2009)	Qualitative (Present or absent per 25 g)
<b>9.</b>	<b>Cooked Food (Veg./ Non-veg.)</b>	Total Bacterial Count	IS 5402-2012	≥10 cfu/g
		Coliform	IS 5401(P-1)-2012	≥10 cfu/g
		E. coli	IS 5887 (P-1)-1976, (RA 2009)	Qualitative (Present/Absent per g/25g)
		Salmonella	IS :5887(P-3)-1999, (RA 2009)	Present/Absent per g/25g
		Shigella	IS :5887(P-7):1999, (RA 2013)	Qualitative (Present/Absent per g/25g)
		Staphylococcus aureus	IS 5887 (P- 2)-1976 (RA 2013)	Qualitative (Present/Absent per g/25g)
		Yeast &Mould Count	IS 5403:1999(RA 2013)	≥10 cfu/gm
<b>10.</b>	<b>Milk and Dairy Products</b>	Methylene Blue Reduction Test (MBRT)	IS 1479 (P-3)-1977 (RA 2013)	Qualitative (Poor/very good (1/2hr. to 5hr.))
		Total Plate Count	IS 1479 (P-3)-1977 (RA 2013) OR IS 5402-2012	≥1cfu/ml or 0.1gm
		Psychrophillic Bacteria Count	IS 1479 (P-3)-1977 (RA 2013)	≥1cfu/ml or 0.1gm

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		Thermophillic Count	IS 1479 (P-3)-1977 (RA 2013) OR IS 5402-2012	≥1cfu/ml or 0.1gm
		Staphylococcus aureus	IS 5887 (P- 2)-1976 (RA 2013)	≥1cfu/ml or 0.1gm
		Coliform Count	IS 5401(P-1)-2012 OR IS 1479 (P-3)-1977 (RA 2013)	≥1cfu/ml or 0.1gm
		Salmonella	IS :5887(P-3)-1999 (RA 2009)	Present/Absent per 25gm
		Shigella	IS :5887(P-7):1999 (RA 2013)	Qualitative (Present/Absent per 25gm)
		Yeast &Mould Count	IS 5403:1999 (RA 2013)	≥1cfu/ml or 0.1gm
		E. coli	IS 5887 (P-1)-1976, (RA 2009)	Qualitative (Present/Absent per gm)
		Faecal Streptococci	IS 5887 (P- 2)-1976 (RA 2013)	≥1cfu/0.1gm Qualitative (Present/Absent/gm)
		Listeria monocytogenes	IS 14988(P-1)-2001 (RA 2012)	Qualitative (Present/Absent per gm/ 25gm)
11.	<b>Condensed milk partly Skimmed &amp; Skimmed Condensed Milk</b>	Accelerated Storage Test (Canned Food)	IS 1166-1986 (RA 2013)	Qualitative( Complies/does not comply)
12.	<b>Infant Milk Substitute</b>	Bacterial Count	IS 5402-2012	≥10cfu/gm
		Coliform Count	IS 5401(P-1)-2012	≥10 cfu/gm
		Staphylococcus aureus	IS 5887 (P- 2)-1976, (RA 2013)	Qualitative (Present/Absent/0.1g)

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		Salmonella	IS :5887(P-3)-1999, (RA 2009)	Qualitative (Present/Absent per 25 g)
		Shigella	IS :5887(P-7):1999, (RA 2013)	Qualitative (Present/Absent per 25 g)
		Yeast & Mould Count	IS 5403:1999, (RA 2013)	≥1cfu/0.1gm Qualitative (Present/Absent/0.1 gm)
		E. coli	IS 5887 (P-1)-1976, (RA 2009)	Qualitative (Present/absent per 0.1gm)
13.	<b>Raw and Finished Food Products</b>			
	<b>a) Ready To Serve (Bakery Products)</b>	E.coli	IS 5887 (P-1)-1976, (RA 2009)	Qualitative (Present/Absent per g)
		Staphylococcus aureus	IS 5887 (P- 2)-1976, (RA 2013)	Qualitative (Present/Absent per g/25 g)
		Salmonella	IS :5887(P-3)-1999, (RA 2009)	Qualitative (Present/absent per g/ 25g)
	<b>b) Food and Dairy Products</b>	Aerobic Microbial Count	IS 5402-2012	≥10 cfu/gm
		Coliform Count	IS 5401(P-1)-2012	≥10 cfu/gm
14.	<b>Spices &amp; Condiments</b>	Salmonella	IS :5887(P-3)-1999, (RA 2009)	Qualitative (Present/Absent per g/25g)
15.	<b>Meat &amp; Meat Products</b>	Total Plate Count	IS 5402-2012	≥10 cfu/gm
		E. coli	IS 5887 (P-1)-1976, (RA 2009)	Qualitative (Present/Absent per g)
		Salmonella	IS :5887(P-3)-1999, (RA 2009)	Qualitative (Present/Absent per g/25g)

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		Staphylococcus aureus	IS 5887 (P- 2)-1976, (RA 2013)	Qualitative (Present/Absent per g/ 25g)
		Yeast & Mould Count	IS 5403:1999, (RA 2013)	≥10 cfu/gm
		Listeria monocytogenes	IS 14988(P-1)-2001, (RA 2012)	Qualitative (Present/Absent per g/25g)
16.	Thermally Processed Fruits and Vegetable Products	Total Plate Count	IS 5402-2012	≥1 cfu/ml ≥10 cfu/gm ≥1 cfu/0.1gm
		Incubation Test at 37°C for 10 days & 55°C for 7 days	IS 2860-1964,(RA 2008)	Qualitative (Present/ Absent)
17.	Dehydrated Fruits and Vegetable Products, Soup Powder, Desiccated Coconut Powder	Total Plate Count	IS 5402-2012	≥10 cfu/gm
		Staphylococcus aureus	IS 5887 (P- 2)-1976, (RA 2013)	Qualitative (Present/Absent per ml/gm/25gm/25ml)
		Salmonella	IS :5887(P-3)-1999, (RA 2009)	Qualitative (Present/Absent per ml/gm/25gm/25ml)
		Shigella	IS :5887(P-7):1999, (RA 2013)	Qualitative (Present/Absent per ml/gm/25gm/25ml)
		E. coli	IS 5887 (P-1)-1976, (RA 2009)	Qualitative (Present/Absent/gm/ml)
		Vibrio cholera	IS 5887 (P-5)-1976, (RA 2013)	Qualitative(Present/Absent /ml/gm/25gm/25ml)



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IV.	AYUSH PRODUCTS			
1.	Herbal Products (Ayurvedic, Siddha, Unani medicine) Microbial limit test	Total Aerobic Microbial Count (Plate Count for Bacteria and Fungi)	API of India Vol II, (Part 2) (App. 2,2.4.1)	≥10cfu/gm or ≥1cfu/ml
		E.coli	API of India Vol II, (Part 2) (App. 2,2.4.2)	Qualitative (Present/Absent per g)
		Salmonella	API of India Vol II, (Part 2) (App. 2,2.4.2)	Qualitative (Present/Absent per g)
		Staphylococcus aureus	API of India Vol II, (Part 2) (App. 2,2.4.2)	Qualitative (Present/Absent per gm)
		Pseudomonas aeruginosa	API of India Vol II, (Part 2) (App. 2,2.4.2)	Qualitative (Present/Absent per g)

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

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<b><u>CHEMICAL TESTING</u></b>				
<b>I.</b>	<b>WATER</b>			
	<b>Water Packaged &amp; drinking water/water for industrial use/ borewell water/river water/ raw water/ construction water/ water for food processing industry</b>	Colour	IS 3025 (Part-4)-1983 (RA 2017)	2 to 400 Hazen Unit
		Odour	IS 3025 (Part -5)-1983 (RA 2017)	N.A.
		Turbidity	IS 3025 (Part -10)-1984 (RA 2017)	1 to 200 NTU
		Total Dissolved solids	IS 3025 (Part -16)-1984 (RA 2017)	10 to 3000 mg/l
		pH	IS 3025 (Part -11) -1983 (RA 2017)	4 to 14
		Barium	IS 13428: 2005(RA 2014)	1 to 10 mg/l
		Copper	IS 3025 (Part -42)-1992 (RA 2014)	0.1 to 10 mg/l
		Iron	IS 3025 (Part -53)-2003 (RA 2014)	0.1 to 100 mg/l
		Manganese	APHA 23 <sup>rd</sup> Edn.2017 3111 B	0.1 to 10 mg/l
		Nitrate	IS 3025 (Part -34)-1988 (RA 2014)	0.1 to 10 mg/l
	Nitrite	IS 3025 (Part -34)-1988 (RA 2014)	0.1 to 5 mg/l	

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		Fluoride	IS 3025 (Part -60)- 2008 (RA 2013)	0.1 to 10 mg/l
		Zinc	IS 3025 (Part -49)-1994 (RA 2014)	0.1 to 10 mg/l
		Silver	IS 13428: 2005 (RA 2014)	0.1 to 5 mg/l
		Aluminium	IS 3025 (Part -55)-2003(RA 2014)	0.1 to 10 mg/l
		Chloride	IS 3025 (Part -32)-1988 (RA 2014)	1 to 400 mg/l
		Selenium	IS 3025 (Part -56)-2003(RA 2014)	0.1 to 5 mg/l
		Sulphate	IS 3025 (Part -24)-1986 (RA 2014)	5 to 200 mg/l
		Alkanity	IS 3025 (Part -23)-1986 (RA 2014)	10 to 500 mg/l
		Calcium	IS 3025 (Part -40)-1991 (RA 2014)	1 to 400 mg/l
		Magnesium	IS 3025 (Part -46)-1994 (RA 2014)	1 to 400 mg/l
		Sodium	IS 3025 (Part -45)-1993 (RA 2014)	1 to 100 mg/l
		Residual Free Chlorine	IS 3025 (Part -26)-1986 (RA 2014)	1 to 10 mg/l

**Ajay Kumar Sharma**  
Convenor

**N. Venkateswaran**  
Program Director

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		Anionic Surface active agents	IS 13428: 2005 (RA2014)	0.1 to 04 mg/l
		Sulphide	IS 3025 (Part -29)-1986 (RA 2014)	0.1 to 05 mg/l
		Antimony	APHA 23 <sup>rd</sup> Edn.2017 3111 B	0.1 to 1 mg/l
		Borates	IS 13428: 2005 (RA 2014)	1.1 to 4 mg/l
		Cadmium	IS 3025 (Part -41)-1992 (RA 2014)	0.1 to 1 mg/l
		Arsenic	IS 3025 (Part -37)-1988 (RA 2014)	0.1 to 2 mg/l
		Cyanide	IS 3025 (Part-27)-1986 (RA 2014)	0.1 to 1 mg/l
		Lead	IS 3025 (Part -47)-1994 (RA 2014)	0.1 to 2 mg/l
		Chromium	IS 13428: 2005 (RA 2014)	1.1 to 1 mg/l
		Total Hardness	IS 3025 (Part 21)-2009 (RA 2014)	10 to 2000mg/l
		Nickel	APHA 23 <sup>rd</sup> Edn.2017 3111 B	0.1 to 1 mg/l
<b>II.</b>	<b>FOOD AND AGRICULTURAL PRODUCTS</b>			
<b>1</b>	<b>Cereal and Cereal Products(Wheat flour,maida and other related products)</b>	Total Moisture	IS 1155-1968(RA 2015)/IS1009-1979(RA 2015)/ FSSAI LAB MANUAL-2016	0.5 to 30%

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		Total Ash	IS 1155-1968(RA 2015)/IS1009-1979(RA 2015)/ FSSAI LAB MANUAL-2016	0.1 to 20%
		Acid Insoluble Ash	IS 1155-1968(RA 2015)/IS1009-1979(RA 2015)/ FSSAI LAB MANUAL-2016	0.1 to 20%
		Crude Fibre	IS 1155-1968(RA 2015)/FSSAI LAB MANUAL-2016	0.1 to 30%
		Protein	IS 7219-1973 (RA2010)/FSSAI LAB MANUAL-2016	0.5 to 50%
		Calorific Value	By calculation	50 to 900kcal/100g
		Alcoholic Acidity	IS 1155-1968(RA 2015)/IS1009-1979 (RA 2015)/ FSSAI LAB MANUAL-2016	0.1 to 5%
		Fat	FSSAI LAB MANUAL-2016	0.1 to 50%
		Gluten	FSSAI Lab Manual 2016	0.5 to 20%

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2	Grains and Pulses, Wheat, Maize, Rice.	Moisture Content	IS 4333(P-2)2015	0.5 to 30%
		Physical Examination of food grains/Refractions	IS 4333(P-1) (RA2012)	
		-Damaged and weevilled seeds or kernels		0.1 to 10%
		-Slightly damaged seeds and kernels		0.1 to 10%
		-Split or broken kernels		0.1 to 10%
		-Shriveled or immature seeds or kernels		0.1 to 10%
		-Impurities		0.1 to 10%
		- Dust		0.1 to 5%
		-Other seeds		0.1 to 5%
		Acid insoluble ash	FSSAI LAB MANUAL-2016	0.1 to 20%
		Total Ash	FSSAI LAB MANUAL-2016	0.1 to 20%
		Crude Fibre	FSSAI LAB MANUAL-2016	0.1 to 30%

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3.	Oilseed	Physical Examination /Refractions -Damaged and weevilled seeds -Slightly damaged seeds and -Split or broken kernels -Shriveled or immature seeds or kernels -Impurities Moisture Acid value of extracted oil Oil Content	IS 3579-1966(RA 2015)     IS 3579-1966(RA 2015) IS 3579-1966(RA 2015)  IS 3579:1964,(RA 2015)	  0.1 to 10%  0.1 to 10%  0.1 to 10% 0.1 to 10%  0.1 to to 10% 0.5 to 30% 0.1 to 30  20 to 60%
4.	Bakery products(Biscuit, Bread)	Moisture Ash Acid insoluble ash Acidity of extracted fat Fat Protein Crude fibre Alcoholic acidity pH of aqueous extract	IS 12711:1989(RA 2010) IS 12711:1989(RA 2010) IS 12711:1989(RA 2010) IS 12711:1989(RA 2010) IS 12711:1989(RA 2010) IS7219-1973(RA 2010) IS 12711:1989(RA 2010) IS 12711:1989(RA 2010) IS 12711:1989(RA 2010)	0.5 to 30% 0.1 to 20% 0.1 to 20% 0.1-30% 0.1 to 50% 0.5 to 50% 0.1 to 30% 0.1 to 5% 1 to 13

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5.	Oil & Fat	Moisture and Insoluble Impurities	IS 548(P-1)-1964 (RA2015)/ FSSAI LAB MANUAL-2016	0.5 to 10%
		Saponification Value	IS 548(P-1)-1964 (RA2015) / FSSAI LAB MANUAL-2016	100 to 250
		Acid Value	IS 548(P-1)-1964 (RA2015) / FSSAI LAB MANUAL-2016	0.1 to 40
		Unsaponifiable Matter	IS 548(P-1)-1964 (RA2015) / FSSAI LAB MANUAL-2016	0.1 to 5%
		Specific Gravity	IS 548(P-1)-1964 (RA2015) / FSSAI LAB MANUAL-2016	0.6 to 1.1
		Bellier Turbidity Temperature	IS 548(P-2)-1964 (RA2010)	10 to 50°C
		Titre of Fatty Acids	IS 548(P-1)-1964 (RA2015) / FSSAI LAB MANUAL-2016	0.1 to 40
		Melting Point	IS 548(P-1)-1964 (RA2015) / FSSAI LAB MANUAL-2016	5 to 60°C
		Peroxide Value	IS 548(P-1)-1964 (RA2015) / FSSAI LAB MANUAL-2016	0.2 to 80meq/1000g

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		Butyrefractometer Reading at 40°	IS 10633-1999 (RA2004)/ FSSAI LAB MANUAL-2016	1.2 to 88
		Flash Point	IS 548(P-1)-1964 (RA2015)/ FSSAI LAB MANUAL-2016	100 to 300°C
		Refractive Index at 40°C	IS 548(P-1)-1964 (RA 2015)/ FSSAI LAB MANUAL-2016	1.423 to 1.478
		Test for sesame oil	IS 548(P-1)-1964 (RA 2015)/ FSSAI LAB MANUAL-2016	Qualitative (Present/absent)
		Test for Cottonseed Oil	IS 548(P-2)-1964 (RA 2010)/ FSSAI LAB MANUAL-2016	Qualitative (Present/absent)
		Test Linseed Oil	IS 548(P-2)-1964 (RA 2010)/ FSSAI LAB MANUAL-2016	Qualitative (Present/absent)
		Test for Presence of Mineral Oil	IS 548(P-2)-1964 (RA 2010)/ FSSAI LAB MANUAL-2016	Qualitative (Present/absent)
		Test for Presence of Castor Oil	IS 548(P-2)-1964 (RA 2010)/ FSSAI LAB MANUAL-2016	Qualitative (Present/absent)
		Test For presence of Argemone Oil	IS 548(P-2)-1964 (RA 2010)/ FSSAI LAB MANUAL-2016	Qualitative (Present/absent)

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		Test for Presence of Hydrocyanic Acid	IS 548(P-2)-1964 (RA 2010)/ FSSAI LAB MANUAL-2016	Qualitative (Present/absent)
		Test for Rancidity	IS 548(P-1)-1964 (RA 2015)	Qualitative (Present/absent)
		Nickel	FSSAI LAB MANUAL 2016	0.1 to 7.5 mg/kg
6.	<b>Starch and Starch Products</b>	Moisture	IS4706(P-2)1978(RA 2015)	0.1 to 15%
		Total Ash	IS4706(P-2)1978(RA 2015)	0.1 to 20%
		Acid Insoluble Ash	IS4706(P-2)1978(RA 2015)	0.05 to 20%
		Total Ash excluding NaCl	IS4706(P-2)1978(RA 2015)	0.05 to 10%
		Sulphated Ash	IS4706(P-2)1978(RA 2015)	0.1 to 20%
		Starch	IS4706(P-2)1978(RA 2015)	1 to 90%
		Protein	IS4706(P-2)1978(RA 2015)	0.1 to 30%
		pH of aqueous extract	IS4706(P-2)1978(RA 2015)	1 to 14
		Free Acidity	IS4706(P-2)1978(RA 2015)	0.1 to 5%
		Sulphur Dioxide	IS4706(P-2)1978(RA 2015)	1 to 1000mg/kg
		Alcoholic Acidity	IS4706(P-2)1978(RA 2015)	0.1 to 5%
		Crude Fiber	IS4706(P-2)1978(RA 2015)	0 to 50%

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7	Honey	Specific Gravity Moisture Percent by mass Reducing Sugars HMF content Sucrose Fructose-Glucose Ratio Ash Content Acidity Fiehe's Test Optical Density	IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008) IS 4941-1984 (RA 2008)	1.21 to 1.50 10 to 40% 1 to 90% 0.2 to 150mg/kg 0.1 to 90% 0.8 to 1.3 0.1 to 5% 0.023 to 5% Qualitative(Identification) 0.02 to 1.5
8	Diary and Diary Products a)Milk	SNF  Fat  Sucrose/cane sugar  Titrable Acidity as Lactic Acid  Moisture  Total Solids (milk solids and added salts)  Total Ash	IS 1479(P2)1961 (RA2013) /FSSAI LAB MANUAL2016  IS 1224(P-1)1977 (RA2012) / FSSAI LAB MANUAL2016  FSSAI LAB MANUAL2016  IS 11765-1986 (RA 2017)  IS 1479(P - 2)1961 (RA2013)  IS 1479(P2)1961 (RA2013)  IS 1479(P2)1961(RA2013)	1 to 50%  0.1 to 50%  1 to 90%  0.1 to 40%  10 to 90%  1 to 99.9%  0.1 to10%

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	<b>b) Paneer</b>	Fat	IS:1224(P-2)1977 (RA2013) /IS:10484-1983 (RA2014) / FSSAI LAB MANUAL2016	Max 50%
		Moisture	IS 10484-1983 (RA2014)/ FSSAI LAB MANUAL2016	Max 60%
		Titration Acidity	IS 10484-1983 (RA2014)	Max 0.50%
	<b>c) Ghee and Butter</b>	Butyrefractometer reading at 40°C	IS:3508-1966 (RA 2013)/ FSSAI LAB MANUAL2016	0.1 to 100
		Moisture and Volatile Matter	IS 3508-1966 (RA 2013)/ FSSAI LAB MANUAL2016	0.1- to 10%
		Free Fatty Acid	IS 3508-1966 (RA 2013)/ FSSAI LAB MANUAL2016	0.1 to 20%
		RM Value	IS 3508-1966 (RA 2013)/ FSSAI LAB MANUAL2016	1 to 40%
		Polenske Value	IS 3508-1966 (RA 2013)/ FSSAI LAB MANUAL2016	1 to 20
		Baudouins Test	IS 3508-1966 (RA 2013)/ FSSAI LAB MANUAL2016	Qualitative (Present/absent)
		Salt as NaCl	IS 3507-1966 (RA 2013)	0.1 to 5%

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		Titration Acidity as Lactic acid	IS 3508-1966 (RA 2013)	0.1 to 5%
	<b>d) Yoghurt/Curd</b>	Total milk Solids	FSSAI LAB MANUAL2016	Up to 13.5%
		Milk Fat	FSSAI LAB MANUAL2016	Up to 3.0%
		Sugars/cane sugar	FSSAI LAB MANUAL2016	Up to 6.0%
		Titration Acidity	IS 1479(P-1)1961 (RA 2013)	0.8-1.2%
		Protein	FSSAI LAB MANUAL2016	UP to 3.2%
	<b>e) Ice-cream</b>	Weight in grams	IS:2802-1964 (RA 2011)	Upto 540
		Total Solids	IS 2802-1964 (RA 2011)	Upto 36.0%
		Milk fat	IS 2802-1964 (RA 2011)	Upto 10.0%
		Acidity	IS 2802-1964 (RA 2011)	Upto 0.25%
		Sucrose	IS 2802-1964 (RA 2011)	Upto 15.05
<b>9.</b>	<b>Spices and Condiments</b>	Moisture	IS 1797-2017/FSSAI LAB MANUAL2016	0.2 to 40%
		Total Ash	IS 1797-2017/FSSAI LAB MANUAL2016	0.1 to 20%
		Acid Insoluble Ash	IS 1797-2017/ FSSAI LAB MANUAL2016	0.1 to 20%
		Water Insoluble Ash	IS 1797-2017/ FSSAI LAB MANUAL2016	0.1 to 20%
		Alcoholic Soluble Extract	IS 1797-2017/ /FSSAI Manual 2016	0.1 to 20%
		Cold Water-Soluble	IS 1797-2017//FSSAI	0.1 to 20%

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		Extract Volatile Oil	Manual 2016 IS 1797-2017//FSSAI Manual 2016	0.2 to 10%
		Non-Volatile Ether Extract	IS 1797-2017/ /FSSAI Manual 2016	0.1 to 75%
		Crude Fiber	IS 1797-2017 / /FSSAI Manual 2016	0.1 to 50%
		Salt as NaCl	IS 1797-2017	0.1 to 10%
		Synthetic Colors	IS 1797-2017/ FSSAI Manual 2016	Qualitative (Present/Absent)
		Extraneous Matter (Dirt, insect infestations, stones, damaged, insect damaged, floral waste, discolor, immature/headless, broken pinheads, unripe units)	IS 1797-2017/ FSSAI LAB MANUAL2016	Qualitative
10.	Nuts, Raisins and Dry Fruits	Extraneous Foreign Matter (stones, dirt, clay insects, mould and mouldy, discolor, insects, insects fragments, rodent)	IS 4333 P-1- 1999 (RA 2012)	Qualitative
		Moisture	IS 4684-1975 (RA 2015)	1.1 to 30%
		Damaged Kernels	IS 4333 P-1- 1999 (RA 2012)	Qualitative
		Unopened shell	IS 4333 P-1- 1999	Qualitative

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		Empty Shell	(RA 2012) IS 4333 P-1- 1999	Qualitative
		Blemished	(RA 2012) IS 4333 P-1- 1999	Qualitative
		Damaged units	(RA 2012) IS 4333 P-1- 1999	Qualitative
		Acidity of Extracted Fat	(RA 2012) IS 1011-2002(RA 2009)	1.1 to 5%
		Sugared Raisins	IS 4333 P-1- 1999 (RA 2012)	Qualitative
		Ash insoluble in dilute HCl	IS 13846-2009	0.1 to 5%
11.	<b>Alcoholic Beverages (Rum, Vodka, Whisky, Beer, Wine)</b>	Relative Density	IS 3752-1988 (RA 2009)	0.8 to 0.9
		Ethyl Alcohol Content	IS 3752-1988 (RA 2009)	1 to 90%
		Total Acid As Tartaric Acid	IS 3752-1988 (RA 2009)	1 to 10g/l
		Volatile acidity as Acetic acid	IS 3752-1988 (RA 2009)	1 to 10g/l
		Residue on evaporation	IS 3752-1988 (RA 2009)	0.1 to 10%
		Esters as CH <sub>3</sub> COOC <sub>2</sub> H <sub>5</sub>	IS 3752-1988 (RA 2009)	0.1 to 200g/l
		Methyl Alcohol	IS 3752-1988 (RA 2009)	0.4 to 2g/100lt
		Aldehyde as Acetaldehyde	IS 3752-1988 (RA 2009)	1 to 100g/100lt
12.	<b>Meat and meat products</b>	Total fat	IS 5960 (P-3)1970 (RA 2010)	0.1 to 60%
		Total moisture	IS 5960 (P-5)2001 (RA 2009)	0.1 to 50%

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		Ash insoluble in HCL	IS 5960 (P-2)( RA 2009)	0.1 to 10%
		Sodium chloride	IS 5960 (P-6)1997 (RA 2009)// FSSAI LAB MANUAL2016	0.1 to 30%
		Protein	IS 5960(P-1)1976 (RA2009)/ FSSAI LAB MANUAL2016	0.1 to 30%
13.	<b>Sweet and confectionary products (sugar boiled confectionary, milk toffee,buttertoffee, chewing gum bubble gum)</b>	Moisture	IS 6287-1985 (RA 2010)	0.1 to 30%
		Sulphated Ash	IS 6287-1985 (RA 2010)	0.1 to 20%
		Acid Insoluble Ash	IS 6287-1985 (RA 2010)	0.1 to 10%
		Total Protein	IS 4684-1975 (RA 2015)	0.1 to 40%
		Fat	IS 6287-1985 (RA 2010)	0.1 to 30%
		Reducing Sugars	IS 6287-1985 (RA 2010)	0.1 to 60%
		Sucrose	IS 6287-1985 (RA 2010)	0.1 to 95%
		Sulphur Dioxide	IS 4706(P-2)1978 (RA 2015)	10 to 5000mg/kg
14.	<b>Fruits and Vegetable Products</b>	Titration Acidity	FSSAI LAB MANUAL2016	0.1 to 10%
		Total Soluble Solids	FSSAI LAB MANUAL2016	1 to 80%
		Copper	IS 2860-1964 (RA 2008)	1.3 to 7.5mg/kg
		Calcium	IS 2860-1964 (RA 2008)	5-500mg/kg
		Salt as NaCl	FSSAI LAB MANUAL2016	0.1 to -25%
		Moisture	FSSAI LAB MANUAL2016	1 to 10%
		Total Ash	FSSAI LAB MANUAL2016	1 to 11%
		Sulphur Dioxide	IS 4706(P-2)1978 (RA 2015)	10 to 5000mg/kg



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		Reducing Sugars	FSSAI LAB MANUAL2016	0.1 to 60%
		Sucrose	FSSAI LAB MANUAL2016	0.1 to 95%
		Acid insoluble Ash	FSSAI LAB MANUAL2016	Up to 0.2%
		Alcoholic Soluble Extract	IS 3543-1966 (RA 2009)	Up to 30%
		Ether soluble Extract	IS 3543-1966 (RA 2009)	Up to 8%
15.	a) Fruit Juices/Fruit Drinks/Fruit Concentrates	pH	IIS 13815-2010	2.0 to 10.0
		Pulp Content	IMUFA60/EN 12134:1997	5.0 to 15.0%
		Total Soluble Solids	IIS 13815-2010	0 to 80%
		Titration Acidity	IS:13844-2003 (RA 2008)	0.50 to 5.0%
		Added Coloring Matter	FSSAI LAB MANUAL-2016	Qualitative (Absent/Present)
16.	Heavy Metals ( Cereal & Cereal Products, Spices & Condiments)	Mercury	FSSAI LAB MANUAL2016	0.1mg/kg-50mg/kg
		Lead	FSSAI LAB MANUAL2016	2mg/kg to 500 mg/kg
		Copper	FSSAI LAB MANUAL2016	5mg/kg to 500 mg/kg
		Cadmium	FSSAI LAB MANUAL2016	5mg/kg to 500 mg/kg
		Iron	FSSAI LAB MANUAL2016	5mg/kg to 500 mg/kg
		Zinc	FSSAI LAB MANUAL2016	5mg/kg to 500 mg/kg
		Nickel	FSSAI LAB MANUAL2016	5mg/kg to 500 mg/kg
		Chromium	FSSAI LAB MANUAL2016	5mg/kg to 500 mg/kg
		Tin	FSSAI LAB MANUAL2016	10mg/kg to 100mg/kg
		Arsenic	FSSAI LAB MANUAL2016	5mg/kg to 500 mg/kg
III.	<b>POLLUTION &amp; ENVIRONMENT</b>			
1.	<b>WASTE WATER</b>	Total Suspended Solids	APHA 23 <sup>rd</sup> Edn.2017 2540 D	2 to 200 mg/l

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		Oil & Grease	IS: 3025 (Part -39)-1991 (RA 2014)	4 to 200 mg/l
		Ammonical Nitrogen	APHA 23 <sup>rd</sup> Edn.2017 4500 C	2 to 20 mg/l
		Kjeldahl Nitrogen	APHA 23 <sup>rd</sup> Edn.2017 4500 B	2 to 20 mg/l
		Free Ammonia	APHA 23 <sup>rd</sup> Edn.2017 4500 C	2 to 20 mg/l
		Chemical Oxygen Demand	APHA 23 <sup>rd</sup> Edn.2017 5220 B	2 to 400 mg/l
		Biochemical Oxygen Demand at 27 C for 3 days	IS: 3025 (Part -44)-1993 (RA 2014)	20 to 200 mg/l
		Hexavalent Chromium	IS: 3025 (Part -52)-2003 (RA 2014)	0.1 to 2.0 mg/l
		Phosphorus	APHA 23 <sup>rd</sup> 4500 C 2017	1 to 10 mg/l
		Bio Assay	IS: 6582: 1971 (RA 2009)	1 to 100 %
		Vanadium	APHA 23 <sup>rd</sup> Edn 3111 B 2017	1.1 to 5.0 mg/l
		Nitrate Nitrogen	IS 3025(Part -34):1988 (RA 2014)	0.5 to 5.0 mg/l
<b>IV.</b>	<b>ATMOSPHERIC POLLUTION</b>			
<b>1.</b>	<b>Stack Emissions Monitoring</b>	Particulate Matter	IS 11255 (Part 1) – 1985 (RA 2014)	5 to 1000 mg/Nm <sup>3</sup>
		Sulphur Dioxide (SO <sub>2</sub> )	IS 11255 (Part 2) – 1985 (RA 2014) / Lab SOP No BTHPL/SOP/ENV/01 Issue No. 02 dt. 01/04/2017 for Flue gas analyzer method	5 to 2000 mg/Nm <sup>3</sup> 10 to 1000 mg/Nm <sup>3</sup>
		Oxides of Nitrogen	IS:11255 (Part-7) 2017	5 to 1000mg/Nm <sup>3</sup>

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		(NO <sub>x</sub> )		
			Lab SOP No BTHPL/SOP/ENV/01 Issue No. 02 dt. 01/04/2017 Flue gas analyzer method	10 to 1000mg/Nm <sup>3</sup>
		Carbon dioxide as CO <sub>2</sub>	Lab SOP No BTHPL/SOP/ENV/01 Issue No. 02 dt. 01/04/2017 Flue gas analyzer method	0.2 to 20 %
			IS 13270:1992 (RA 2014) – Orsat apparatus method	0.2 to 20 %
		Carbon monoxide as CO	Lab SOP No BTHPL/SOP/ENV/01 Issue No. 02 dt. 01/04/2017 Flue gas analyzer method	1 to 500ppm
		Oxygen as O <sub>2</sub>	Lab SOP No BTHPL/SOP/ENV/01 Issue No. 02 dt. 01/04/2017 Flue gas analyzer method	1 to 25 %
		Flue gas Velocity	IS:11255 (Part 3)- 2008	3 to 30 m/sec
		Flow Rate	IS 11255 (Part 3) – 2008	10 to 1200000 Nm <sup>3</sup> /hr
		Temperature	IS 11255 (Part 3) – 2008	Ambient to 600°C
2.	<b>Ambient Air Monitoring</b>	Temperature	IS 5182 (Part-4) 1999 (RA 2014)	10 °C to 50 °C
		Suspended Particulate Matter (SPM)	IS:5182 (Part-4) 1999 (RA 2014)	5 to 1000 µg/ m <sup>3</sup>
		Particulate Matter – 10 µm (PM <sub>10</sub> )	IS:5182 (Part-23) 2006 ((RA 2017))/CPCB Guidelines Volume -I, May-2011	10 to 1000 µg/ m <sup>3</sup>
		Particulate Matter – 2.5 µm (PM <sub>2.5</sub> )	IS:5182 (Part-23) 2006 ((RA 2017))/ CPCB Guidelines Volume -I, May-2011	5 to 500 µg/ m <sup>3</sup>
		Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (Part-2) 2017/	5 to 500 µg/ m <sup>3</sup>

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			CPCB Guidelines Volume - I, May-2011	
		Oxides of Nitrogen (NO <sub>x</sub> )	IS:5182 (Part-6) 2006 (RA 2017)) / CPCB Guidelines Volume -I, May-2011	9 to 500 µg/ m <sup>3</sup>
		Ozone (O <sub>3</sub> )	IS:5182 (Part-9) 1974 (RA 2014)& CPCB Guidelines Volume -I, May-2011	10 to 100 µg/ m <sup>3</sup> 100 to 1000 µg/ m <sup>3</sup>
		Ammonia (NH <sub>3</sub> )	CPCB Guidelines Volume - I, May-2011 & BTHPL/ENV/07, Issue No. 02 dt. 01/04/2017	0.1 to 10 µg/ m <sup>3</sup> 10 to 1000 µg/ m <sup>3</sup>
3.	Noise Level Monitoring	Noise Level -Ambient	IS 9989-1981 (RA 2008)	40 to 110 dB(A)
		DG Noise	IS 4758-1968 ((RA 2017))/ BTHPL/ENV/02 Issue No. 02 dt. 01/04/2017	40 to 110 dB(A)
V.	<b>METALS &amp; ALLOYS</b>			
1.	<b>Stainless Steel/ Carbon steel (Low Carbon/Medium Carbon/High carbon steel)Cast &amp; pig Iron/Spring Steel/High Speed Steel, Plates, Strips, Alloy Steel, Fitting Welding &amp; TMT Bar, Forging, Structural Steel, Steel Casting</b>	Carbon	IS 228 (P-1); 1987, (RA 2012)	0.05 to 2.5%
			IS:12308 (P-11);1991, (RA 2012)	1.5 to 4.5%
		Manganese	IS 228 (P-2); 1987, (RA 2012)	0.1 to 1.5%
			IS:12308 (P-10);1991, (RA 2012)	0.1 to 7%
		Sulphur	IS 228 (P-9); 1989, (RA 2014)/ IS:12308 (P-2);1987, (RA 2012)	0.005 to 0.25%
		Silicon	IS 228 (P-8); 1989, (RA 2014)/IS:12308 (P-6);1991, (RA 2012)	0.05 to 6%
		Phosphorus	IS 228 (P-3); 1987, (RA 2012)/IS:12308	0.01 to 0.50%

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			(P-5);1991, (RA 2012)	
		Chromium	IS 228 (P-6); 1987, (RA 2014) / IS:12308 (P-8);1997, (RA 2012)	0.1 to 28%
		Nickel	IS 228 (P-5); 1987, (RA 2014)	0.1 to 25%
		Molybdenum	IS 228 (P-10); 1989, (RA 2009)	0.01 to 1.5%
<b>VI.</b>	<b>TEXTILE</b>			
<b>1.</b>	<b>Textile &amp; Related Products (Textile Yarn, Fiber Fabric &amp; Garments)</b>	Colour Fastness to Washing	IS/ISO 105 (C10) 2006 IS/ISO 105 (C06) : 2010 AATCC 61:2013	Grade 1 to 5 ±0.5
		Colour Fastness to Rubbing/Crocking	IS 766:1988 (RA 2009), ISO 105 (X12): 2001, AATCC 165:2008	Grade 1 to 5 ±0.5
		Colour Fastness to Perspiration	IS 971:1983 (RA 2009) AATCC 15:2013 ISO 105 (E04) : 2013	Grade 1 to 5 ±0.5
		Colour Fastness to Dry Cleaning by using Perchloro ethylene solvent	ISO 105 (D01) 2010, AATCC 132:2013 IS 4802-1988, (RA 2010)	Grade 1 to 5 ±0.5
		Colour Fastness to Light (MBTL light fastness tester)	IS 2454:1985 (RA 2010)	Grade 1 to 5 ±0.5
		Colour Fastness to Water	IS 767-1988 (RA 2009) ISO 105 (E01):2013 AATCC 107:2013	Grade 1 to 5 ±0.5
		Colour Fastness to Sublimation	ISO 105 (X-11) 1994(E) AATCC 133:2013	Grade 1 to 5 ±0.5

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		Colour Fastness to Organic Solvent	IS 688:1988 (RA 2009) ISO 105 (X05) 1994	Grade 1 to 5 ±0.5
		Water Repellency of Fabrics- Spray Water Test	ISO 4920:1981 AATCC 22:2010 IS:390-1975, (RA 2008)	Rating 0 to 100
		Dimensional Stability to Washing & Drying	ISO 5077 :2007 AATCC 135:2014 AATCC 150: 2012 IS 665-1989, (RA 2010)	±1% to 25%
		Retention of Crease in Fabric after repeated home laundering	ISO 7769:2006 AATCC 88C-2006	Grade 1 to 5 ±0.5
		Skewness Changes in Fabric of Garments twist resulting from automatic home laundering	AATCC 179-2004 ISO 16322-1,2,3: 2005	2% to 40 %
		Determination of Spirality after laundering	IS/ISO 16322-1,2,3 - 2005	2% to 40 %
		Colour Fastness to Light of textile wetted with artificial perspiration	ISO 105 (B07) AATCC 125-2013	Grade 1 to 5 ±0.5
		Colour Fastness to Bleaching - Hypochlorite - Peroxide	IS 762-1988 (RA 2009) AATCC 188-2008 IS 763-1988, (RA 2009) AATCC101-2009	Grade 1 to 5 ±0.5
		Colour Fastness to Spotting – Acids	ISO 105 (E05) – 2015 AATCC 6-2006	Grade 1 to 5 ±0.5

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		Colour Fastness to Spotting – Alkalis	ISO 105 (E06) – 2015 AATCC-6-2006	Grade 1 to 5 ±0.5
		Colour Fastness to Rubbing – Organic Solvent	IS 3426-1982 (RA 2010) ISO 105 (D02) :1993	Grade 1 to 5 ±0.5
		CMC- Calculation of Colour Difference	IS:15098-2002, (RA 2010) ISO 105- J03 AATCC 173-2009	1% to 100%
		Identification & Blend Composition	IS 3416 (Part 1,2) 1988, (RA 2008) IS 667-1981, (RA 2008) IS 3421-1988, (RA 2010) IS 2006- 1988, (RA 2009) AATCC 20 AATCC 20A	3% to 100%
		Wool Content	IS 8476:1977, (RA 2010)	3% to 100%
		Solvent Soluble Matter of Textile Material	IS 4390:2001, (RA 2012)	0.1% to 20%
		Chloride Content of Textile Material	IS 4202:1967, (RA 2010)	0.1% to 5%
		Sulphate Content of Textile Material	IS 4203:1967,(RA 2010)	0.1% to 5%
		Chromium & Iron Content of Textile Material	IS 4655:1968,(RA 2010)	0.5% to 5%
		Water Soluble Matter of Textile Material	IS 3456:1966, (RA 2010)	0.2% to 20%
		Formaldehyde Content (free & released)	IS 14563 (Part -1,2) 1998, (RA 2003) ISO 14184 AATCC 112	10mg/kg to 1000mg/kg

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		pH of Aqueous extract (Hot & Cold Method)	IS 1390- 1983, (RA 2009)	1 to 14
		Scouring Loss of Textile Material	IS 2360-1977,(RA 2008) Appendix A-6	0.5% to 20%
		Ash Content in Textile Material	IS 199:1989, (RA 2010)	0.2% to 25%
	<b>Tarpaulin</b>	Proofing Content for coated fabric: a) Determination of Single texture rubberized water proof fabric	IS 5915-1970, (RA 2012), Appendix C	100 g/m <sup>2</sup> to 500g/m <sup>2</sup>
		b) Determination of Double texture rubberized water proof fabric	IS 6110-1983, (RA 2012) Appendix D	100 g/m <sup>2</sup> to 500g/m <sup>2</sup>
		c) Determination of Common proofed Canvas/duck & Paulin (tarpaulin)	IS 2089-1977, (RA 2012) Appendix A	30% to 100%
		d) Alumina Content in Textile Material	IS 2089-1977,(RA 2012)	0.1% to 15%
		e) Zinc Content	IS 2089-1977,(RA 2012)	0.1% to 15%
<b>VII.</b>	<b>SOLID FUELS</b>			
<b>1</b>	<b>Coal/Pet Coke</b>	GCV	IS 1350 (Part - 2)- 2017	150 to 8000 Kcal/kg
		Moisture	IS 1350 (Part - 1) 1984,(RA 2013)	0.2 to 50%



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		Ash	IS 1350 (Part - 1)-1984,(RA 2013)	0.5 to 60%
		Fixed Carbon	IS 1350 (Part - 4)-1974,(RA 2010)	0.1 to 70%
		Sulphur	IS 1350 (Part - 3)-1969,(RA 2010)	0.1 – 10%
		Volatile Matter	IS 1350 (Part - 1)-1984,(RA 2013)	0.5 – 30%

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

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<b><u>MECHANICAL TESTING</u></b>				
<b>I</b>	<b>TEXTILE MATERIAL</b>			
<b>1.</b>	<b>Textile Fabric &amp; Garments</b>	Breaking strength (Reveled strip)	IS:1969 (PART-1)-2009 IS:7016 (PART-2) 1981, (RA 2008)	40-5000N
		Thread/Unit Length of Woven Fabric	IS 1963-2004,(RA 2008)	79 dm to 315 dm (20-80/Inch)
		Dimensional Stability	IS 2977-1989,(RA 2010)	(-) 10% to (+) 2%
		Bursting Strength of Fabric	IS 1966(PART-1) 2009	0 kg/cm <sup>2</sup> to 45 kg/cm <sup>2</sup>
		Crease Recovery Angle Test	IS 4681-1981,(RA 2008)	10° to 180°
		Water Proofness Test (Bun desman Test)	IS 7016 (PART-7) 2009	Qualitative
		Tear Strength By (Elmendorf Test)	IS 7016 (PART-3), Method B- 1981 (RA 2008)-	240-5440 gf
		Length And Width of The Fabric	IS 1954-1990, (RA 2007)	5 cm TO 200 cm
		Single End Breaking Force & Elongation At Break	IS:1670-1991 (RA 2007)	2.5 N to 100 N) 0.25kgf to 10 kgf) elongation –(6% - 10%)
		Fabric Weight (Mass Per Unit)	IS 1964-2001 (RA 2010) IS 7016(PART-1)1982 (RA 2008) Cl. 4	10g/m <sup>2</sup> to 1000g/m <sup>2</sup>
		Fabric propensity to surface fuzzing and to pilling	IS 10971-(PART-1) 2011 ISO- 12945-1-2000	Qualitative (Grade 1 to 5)
		Abrasion of Resistance Of fabrics By Martindale Method	IS 12673-1989, (RA 2010) (Method-1)	Qualitative

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		Twist In Yarns	IS 832 (I & II) 1985 (RA 2010)	1 to 9999 turns/m
		Flammability Apparels (45°C)	IS 11871-1986 (RA 2004)	1 s to 25 s
		Air Permeability on Fabric	IS 11056-2013 Method 'B'	10 to 30 cc/sec/cm <sup>2</sup>
		Appearance after washing	IS/ISO 105 (C-6) 2006 IS/ISO 105 (C-10) 2006	Qualitative (grade 1 to 5)
	<b>Yarn</b>	Linear Density of Yarn	IS 1315-1977,(RA 2010)	10 to 60 ne 10 to 59 tex
	<b>Fiber</b>	Length of Man –Made Stable Fibers	IS 10014 (PART1 A2) 1984 (RA 2008)	10 mm to 120 mm
		Average Fiber Diameter (Micron)	ISO: 137-1975	10 to 200 micron
<b>II.</b>	<b>MECHANICAL PROPERTIES OF METALS</b>			
<b>1.</b>	<b>Ferrous materials alloys and products</b>	Tensile strength	IS 1608-2005	6 kN to 1000kN
		Yield stress/ 0.2% proof	IS 1608-2005	6 kN to 1000kN
		Elongation	IS 1608-2005	5 to 85 %
		Reduction in area	IS 1608-2005	1 to 50%
		Bend	IS : 1599-2012	Qualitative (Mandrel dia- 10,20,32,40,60 mm)
		Rock well hardness B	IS 1586 (Part-1)- 2012	20 to 100 HRBW
		Rock well hardness C	IS 1586 (Part-1)- 2012	20 to 70 HRC