

**Certificate Number**

**TC-6446**

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## Validity

**10.10.2018 to 09.10.2020**

**Last Amended on 26.10.2018**

I.	FOOD & AGRICULTURAL PRODUCTS			
1.	<b>Milk &amp; Milk Products</b> <b>(Pasteurized milk, Whole milk Powder, Raw Milk, Butter, Cheese, Dairy Whitener, Paneer, Flavored Milk)</b>	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g or ≥ 1 cfu per ml
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g or ≥ 1 cfu per ml
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per ml or g
				0.30-110 MPN per ml or g
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	≥ 1 cfu per ml or ≥ 10 cfu per g
			IS 5401(P-2):2012	0.30-110 MPN/ml or g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 ml or g
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 ml or g
		Vibrio cholera & Vibrio parahaemolyticus	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present/Absent) per 25 ml or g
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per 1 ml or g / 25 ml or 25 g
		Faecal streptococci	IS 5887(P-2):1976 Reaff. 2013	0.30-110 MPN per ml or g
2.	<b>Sugar and Sugar Product</b>	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	10 cfu per g

## BIOLOGICAL TESTING

I.	FOOD & AGRICULTURAL PRODUCTS			
1.	<b>Milk &amp; Milk Products</b> <b>(Pasteurized milk, Whole milk Powder, Raw Milk, Butter, Cheese, Dairy Whitener, Paneer, Flavored Milk)</b>	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g or ≥ 1 cfu per ml
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g or ≥ 1 cfu per ml
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per ml or g
				0.30-110 MPN per ml or g
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	≥ 1 cfu per ml or ≥ 10 cfu per g
			IS 5401(P-2):2012	0.30-110 MPN/ml or g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 ml or g
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 ml or g
		Vibrio cholera & Vibrio parahaemolyticus	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present/Absent) per 25 ml or g
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per 1 ml or g / 25 ml or 25 g
		Faecal streptococci	IS 5887(P-2):1976 Reaff. 2013	0.30-110 MPN per ml or g
2.	<b>Sugar and Sugar Product</b>	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	10 cfu per g

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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
		Salmonella	IS 5401(P-2):2012 IS 5887(P-3):1999 Reaff. 2013	0.30-110 MPN per g or ml Qualitative (Present/Absent) per 25 g
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per g
3(a).	Beverages (Non-Alcoholic Drinks)	Total plate count (Bacterial Count)	IS 5402:2012	≥ 1 cfu per ml
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 1 cfu per ml
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	≥ 1 cfu per ml
			IS 5401(P-2):2012	0.30-110 MPN per ml
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per ml 0.30-110 MPN per ml
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per ml /25 ml
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25ml
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 ml
		Vibrio cholera & Vibrio parahaemolyticus	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present/Absent) per 25 ml
b.	Beverages (Alcoholic)	Total plate count (Bacterial Count)	IS 5402:2012	≥ 1 cfu per ml
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 1 cfu per ml
		Coliforms Count	IS 5401(P-1): 2002 Reaff.2012	≥ 1 cfu per ml
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	0.30-110 MPN per ml
				Qualitative (Present/Absent) per ml

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4.	<b>Meat and Meat Products (Dried/ Dehydrated Fish, Raw or Coked, Frozen Fish, Canned Fish)</b>	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	≥ 10 cfu per g
			IS 5401(P-2):2012	0.30-110 MPN per g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per 25g
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
5.	<b>Snacks and Instant mixes</b>	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	≥ 10 cfu per g
			IS 5401(P-2):2012	0.30-110 MPN per g
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	0.30-110 MPN per g
				Qualitative (Present/Absent) per g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per 1 g or 25g
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g

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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
		Vibrio cholera	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present/Absent) per 25 g
		Vibrio parahaemolyticus	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present/Absent) per 25 g
6.	Infant Food (Baby Mix, Infant Mix.)	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	≥ 10 cfu per g
			IS 5401(P-2):2012	0.30-110 MPN per g
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	0.30-110 MPN per g
				Qualitative (Present/Absent) per g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per 1 g or 25g
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
7.	Herbs, Spices & Condiments (Red Chilly Powder or Whole, Turmeric Powder, Coriander Powder or Whole Gram Masala, Black Pepper)	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms Count	IS 5401(P-1): 2002 Reaff. 2012	≥ 10 cfu per g
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g

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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
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per 1g or 25 g
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
8.	Bakery & Confectionary Products (Cake, Pastrey, Biscuit, Chocolate)	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms Count	IS 5401(P-1): 2002 Reaff. 2012	≥ 10 cfu per g
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
9.	Coffee and Cocoa Products	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms Count	IS 5401(P-1): 2002 Reaff. 2012	≥ 10 cfu per g
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
10.	Tea	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Coliforms Count	IS 5401(P-1): 2002 Reaff. 2012	≥ 10 cfu per g
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g

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		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	0.30-110 MPN per g
				Qualitative (Present/Absent) per g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per 1 g or 25g
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
<b>II.</b>	<b>WATER</b>			
<b>1.</b>	<b>Drinking Water, Ground /Surface Water, Distilled Water, Swimming Pool Water</b>	Bacterial Count/ Standard plate count/ Heterotrophic count	IS:1622-1981 Reaff. 2014 IS 5402:2012	≥ 1 cfu per ml
		Escherichia coli	IS:1622-1981 Reaff. 2014 IS:15185:2016	Qualitative (Present / Absent) per 100 ml/250ml
		Coliforms	IS:1622-1981 Reaff. 2014	<2-542MPN per 100ml
		Faecal Coliform	IS:1622-1981 Reaff. 2014	Qualitative (Present / Absent) per 100 ml
<b>2.</b>	<b>Packaged Drinking Water, Packaged Natural Mineral Water, Water for Process Food Industry</b>	Aerobic Microbial Count a) at 20-22°C b) at 37°C	IS 5402:2012	≥ 1 cfu per ml
		Yeast and mould Count	IS 5403:1999 Reaff.2013	Qualitative (Present / Absent) per 250ml
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012 IS 15185:2016	Qualitative (Present / Absent) per 250ml

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		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013 IS 15185:2016	Qualitative (Present / Absent) per 250ml
		Salmonella	IS 5887(P-3):1999 Reaff. 2013 IS 15187:2016	Qualitative (Present / Absent) per 250ml
		Faecal streptococci	IS 5887(P-2):1976 Reaff. 2013 IS 15186:2002 Reaff. 2014	Qualitative (Present / Absent) per 250ml
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present / Absent) per 250ml
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present / Absent) per 250ml
		Sulphite reducing anaerobes (Clostridia)	IS 13428:2005 Reaff. 2014 Annex. C	Qualitative (Present / Absent) per 50ml
		Pseudomonas aeruginosa	IS 13428:2005 Reaff. 2014 Annex. D	Qualitative (Present / Absent) per 250ml
		Vibrio cholera	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present / Absent) per 250ml
		Vibrio parahaemolyticus	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present / Absent) per 250ml
<b>III.</b>	<b>ENVIRONMENT AND POLLUTION</b>			
<b>1.</b>	<b>Effluent / Waste water/ Sewage Water (ETP/STP)</b>	Bacterial Count/ Standard plate count/ Heterotrophic count	IS:1622-1981 Reaff. 2014 IS 5402:2012	≥ 1 cfu per ml
		Escherichia coli	IS:1622-1981 Reaff. 2014 IS:15185:2016	Qualitative (Present / Absent) per 100 ml / 250 ml

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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
		Coliforms Faecal Coliform	IS:1622-1981 Reaff. 2014 IS:1622-1981 Reaff. 2014	<2-542 MPN per 100ml Qualitative (Present / Absent) per 100ml
<b>IV.</b>	<b>ANIMAL FOOD &amp; FEED</b>			
<b>1.</b>	<b>Animal &amp; Poultry Food &amp; Feed</b>	Total plate count (Bacterial Count)	IS 5402:2012	≥ 10 cfu per g
		Yeast and mould Count	IS 5403:1999 Reaff.2013	≥ 10 cfu per g
		Shigella	IS 5887(P-7):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
		Vibrio cholera	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present/Absent) per 25 g
		Vibrio parahaemolyticus	IS 5887(P-5):1976 Reaff. 2013	Qualitative (Present/Absent) per 25g
		Coliforms	IS 5401(P-1): 2002 Reaff. 2012	≥ 10 cfu per g
			IS 5401(P-2):2012	0.30-110 MPN per g
		Faecal streptococci	IS 5887(P-2):1976 Reaff. 2013	0.30-110 MPN per g
		Staphylococcus aureus	IS 5887(P-2):1976 Reaff. 2013	Qualitative (Present/Absent) per 1 g or / 25 g
		Salmonella	IS 5887(P-3):1999 Reaff. 2013	Qualitative (Present/Absent) per 25 g
		Escherichia coli	IS 5887(P-1): 1976 Reaff. 2013	Qualitative (Present/Absent) per g

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## CHEMICAL TESTING

I.	METALS & ALLOYS			
1.	<b>Plain Carbon &amp; Low Alloy Steel (Mild Steel, Cable Tray, G.I. Conduit Pipe, M.S Conduit Pipe)</b>	Carbon	IS 228 (Part 1):1987, RA 2012	0.05% to 1.00%
		Manganese	IS 228 (Part 2):1987, RA 2012	0.1% to 5.0%
		Phosphorous	IS 228 (Part 3):1987, RA 2012	0.01% to 0.5%
		Sulphur	IS 228 (Part 9):1989, RA 2014	0.05% to 0.25%
		Silicon	IS 228 (Part 8):1989, RA 2014	0.05% to 5%
2.	<b>Stainless Steel</b>	Carbon	IS 228 (Part 1):1987, RA 2012	0.02% to 1.00%
		Manganese	IS 228 (Part 2):1987, RA 2012	0.1% to 1.5%
		Phosphorous	IS 228 (Part 3):1987, RA 2012	0.01% to 0.5%
		Sulphur	IS 228 (Part 9):1989, RA 2014	0.010% to 0.25%
		Silicon	IS 228 (Part 8):1989, RA 2014	0.05% to 5%
		Chromium	IS 228 (Part 6):1987, RA 2014	10% to 25%
		Nickel	IS 228 (Part 5):1987, RA 2014	1% to 15%
		Molybdenum	IS 228 (Part 7):1990, RA 2012	1.0% to 5%

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<b>II.</b>	<b>METALLIC COATING &amp; TREATMENT SOLUTIONS</b>			
<b>1.</b>	<b>Metals, Armouring Wires &amp; Strips</b>	Mass of Zinc Coating	IS 6745 : 1972, RA 2016	10g/m <sup>2</sup> to 800 g / m <sup>2</sup>
		Uniformity of Zinc Coating	IS:2633:1986 RA 2016	Qualitative
<b>2.</b>	<b>Aluminium Section</b>	Anodic Coating	IS:5523:1983, RA 2016	8 µm to 15 µm
<b>III.</b>	<b>RESIDUES IN FOOD PRODUCTS</b>			
<b>1.</b>	<b>Pesticides</b>			
<b>a.</b>	<b>Cereals, Pulses &amp; Cereal Products</b>	Alachlor	ATHB/SOP/INST/032	0.04 to 20mg/kg
		Atrazine	Issue No.-01	0.04 to 20mg/kg
		Aldrin	Issue Date- 06/06/2016	0.04 to 20mg/kg
		Dieldrin		0.04 to 20mg/kg
		Butachore		0.04 to 20mg/kg
		Chlorpyrifos		0.04 to 20mg/kg
		Alpha HCH		0.04 to 20mg/kg
		Beta HCH		0.04 to 20mg/kg
		Gamma HCH		0.04 to 20mg/kg
		Delta HCH		0.04 to 20mg/kg
		DDT-OP		0.04 to 20mg/kg
		DDT-PP		0.04 to 20mg/kg
		DDD-OP		0.04 to 20mg/kg
		DDD-PP		0.04 to 20mg/kg
		DDE-OP		0.04 to 20mg/kg
		DDE-PP		0.04 to 20mg/kg
		Endosulphan-alpha		0.04 to 20mg/kg
		Endosulphan-beta		0.04 to 20mg/kg
		Endosulphan-sulphate		0.04 to 20mg/kg
		Malathion		0.04 to 20mg/kg
		Methyl Parathion		0.04 to 20mg/kg
		Phorate		0.04 to 20mg/kg
		Phorate Sulfone		0.04 to 20mg/kg
		Phorate Sulfoxide		0.04 to 20mg/kg

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2.	Fruit and Vegetable	Atrazine	ATHB/SOP/INST/033	0.04 to 20mg/kg
		Aldrin	Issue No.-01	0.04 to 20mg/kg
		Dieldrin	Issue Date- 06/06/2016	0.04 to 20mg/kg
		Butachlor		0.04 to 20mg/kg
		Chlorpyrifos		0.04 to 20mg/kg
		Alpha HCH		0.04 to 20mg/kg
		Beta HCH		0.04 to 20mg/kg
		Gamma HCH		0.04 to 20mg/kg
		Delta HCH		0.04 to 20mg/kg
		DDT-OP		0.04 to 20mg/kg
		DDT-PP		0.04 to 20mg/kg
		DDD-OP		0.04 to 20mg/kg
		DDD-PP		0.04 to 20mg/kg
		DDE-OP		0.04 to 20mg/kg
		DDE-PP		0.04 to 20mg/kg
		Endosulphan-alpha		0.04 to 20mg/kg
		Endosulphan-beta		0.04 to 20mg/kg
		Endosulphan-sulphate		0.04 to 20mg/kg
		Malathion		0.04 to 20mg/kg
		Methyl Parathion		0.04 to 20mg/kg
		Phorate		0.04 to 20mg/kg
		Phorate Sulfone		0.04 to 20mg/kg
		Phorate Sulfoxide		0.04 to 20mg/kg
3.	Trace Metal Elements in Food Products			
a.	Meat & Meat Products, Spices and Condiments , Food Grain, Fruit and Vegetables , Dairy Products, Bakery Products, Confectionary Products, Process Food, Non Alcoholic	Barium(as Ba)	FSSAI Manual-2015 Chapter-9, Section-2.0	20 to 1000 mg/kg
		Borates(as B)	FSSAI Manual-2015 Chapter-9, Section-2.0	20 to 1000 mg/kg
		Copper(as Cu)	FSSAI Manual-2015 Chapter-9, Section-2.0	1.5 to 500 mg/kg
		Selenium(as Se)	FSSAI Manual-2015 Chapter-9, Section-2.0	4 to 500 mg/kg
		Silver(as Ag)	FSSAI Manual-2015 Chapter-9, Section-2.0	4 to 500 mg/kg

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	<b>Beverages</b>	Zinc(as Zn)	FSSAI Manual-2015 Chapter-9, Section-2.0	20 to 10000 mg/kg
		Cadmium(as Cd)	FSSAI Manual-2015 Chapter-9, Section-2.0	0.05 to 500 mg/kg
		Lead(as Pb)	FSSAI Manual-2015 Chapter-9, Section-2.0	0.1 to 500 mg/kg
		Mercury(as Hg)	FSSAI Manual-2015 Chapter-9, Section-2.0	0.1 to 20 mg/kg
		Manganese(as Mn)	FSSAI Manual-2015 Chapter-9, Section-2.0	20 to 500 mg/kg
		Nickel(as Ni)	FSSAI Manual-2015 Chapter-9, Section-2.0	1.5 to 500 mg/kg
		Arsenic(as As)	FSSAI Manual-2015 Chapter-9, Section-2.0	0.1 to 500 mg/kg
		Total chromium (as Cr)	FSSAI Manual-2015 Chapter-9, Section-2.0	0.05 to 500 mg/kg
		Antimony(as Sb)	FSSAI Manual-2015 Chapter-9, Section-2.0	4 to 500 mg/kg
<b>IV.</b>	<b>RESIDUE IN WATER</b>			
<b>1.</b>	<b>Pesticides</b>			
<b>a.</b>	<b>Packaged Drinking Water , Drinking Water</b>	Alachlor	IS:14543:2016	0.04 µg/L to 1.0 µg/L
		Atrazine	IS:10500:2012	0.04 µg/L to 1.0 µg/L
		Aldrin		0.010 µg/L to 1.0 µg/L
		Dieldrin		0.010 µg/L to 1.0 µg/L
		Butachlor		0.04 µg/L to 1.0 µg/L
		Chlorpyrifos		0.04 µg/L to 1.0 µg/L
		Alpha HCH		0.010 µg/L to 1.0 µg/L
		Beta HCH		0.010 µg/L to 1.0 µg/L
		Gamma HCH		0.010 µg/L to 1.0 µg/L
		Delta HCH		0.010 µg/L to 1.0 µg/L
		DDT-OP		0.010 µg/L to 1.0 µg/L
		DDT-PP		0.010 µg/L to 1.0 µg/L
		DDD-OP		0.010 µg/L to 1.0 µg/L

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		DDD-PP		0.010 µg/L to 1.0 µg/L
		DDE-OP		0.010 µg/L to 1.0 µg/L
		DDE-PP		0.010 µg/L to 1.0 µg/L
		Endosulfan-alpha		0.010 µg/L to 1.0 µg/L
		Endosulfan -beta		0.010 µg/L to 1.0 µg/L
		Endosulfan -sulphate		0.010 µg/L to 1.0 µg/L
		Ethion		0.04 µg/L to 1.0 µg/L
		Isoproturon		0.02 µg/L to 1.0 µg/L
		Malathion		0.04 µg/L to 1.0 µg/L
		Malaoxon		0.04 µg/L to 1.0 µg/L
		Methyl Parathion		0.04 µg/L to 1.0 µg/L
		Methyl Paraoxon		0.04 µg/L to 1.0 µg/L
		Monocrotophos		0.08 µg/L to 1.0 µg/L
		Phorate		0.04 µg/L to 1.0 µg/L
		Phorate Sulfone		0.04 µg/L to 1.0 µg/L
		Phorate Sulfoxide		0.04 µg/L to 1.0 µg/L
		2,4-Dichlorophenoxy acetic acid		0.04 µg/L to 1.0 µg/L
<b>V.</b>	<b>WATER</b>			
<b>1.</b>	<b>Packaged Drinking Water (other than Packaged Natural Mineral Water), Packaged Natural Mineral Water</b>	pH	IS:3025(P-11)1983, RA-2012	4.0 to 10.0
		Colour	IS:3025(P-04)1983, RA-2012	1hazen to 25hazen
		Turbidity	IS:3025(P-10)1984, RA-2012	1NTU to 40 NTU
		Total dissolved solid	IS:3025(P-16)1984, RA-2012	5mg/l to 2000 mg/l
		Iron(as Fe)	IS:3025(P-53)2003, RA-2014 IS:3025(P-2)2004, RA - 2014	0.05mg/l to 5.0 mg/l
		Nitrate(as NO <sub>3</sub> )	IS:3025(P-34)1988, RA-2014	0.1mg/l to 5.0mg/l

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		Nitrite(as NO <sub>2</sub> )	IS:3025(P-34)1988, RA-2014	0.01mg/l to 10 mg/l
		Fluoride(as F)	IS:3025(P-60)2008, RA-2013,APHA method-4500D	0.1mg/l to 5.0mg/l
		Aluminium(as Al)	IS:3025(P-55)2003, RA-2014	0.01mg/l to 5mg/l
		Chloride(as Cl)	IS:3025(P-32)1988, RA-2014	2mg/l to 5000mg/l
		Sulphate (as SO <sub>4</sub> )	IS:3025(P-24)1986, RA-2014	1mg/l to 1000 mg/l
		Total alkalinity (as HCO <sub>3</sub> )	IS:3025(P-23)1991, RA-2014	1.0mg/l to 500 mg/l
		Calcium(as Ca)	IS:3025(P-40)1991, RA-2014 IS:3025(P-2)2004, RA-2014	2mg/l to 1500mg/l
		Magnesium(as Mg)	IS:3025(P-46)1994, RA-2014 APHA 3500-Mg (B)	1mg/l to 1500mg/l
		Sodium(as Na)	IS:3025(P-45)1993, RA-2014 IS:3025(P-2)2004, RA-2014	5mg/l to 1000mg/l
		Free residual chlorine	IS:3025(P-26)1986, RA-2014	0.1mg/l to 5mg/l
		Phenolic compound (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025(P-43)1992, RA-2014	0.001mg/l to 1.0 mg/l
		Mineral oil	IS:3025(P-39)1991, RA-2014(FTIR)	0.001mg/l to 10 mg/l
		Anionic detergents (as MBAS)	Annex-K of IS:13428-2005,RA-2014	0.1mg/l to 1.0mg/l
		Sulphide(as H <sub>2</sub> S)	IS:3025(P-29)1986, RA-2014	0.05mg/l to 1.0 mg/l
		Cyanide(as CN)	IS:3025(P-27)1986, RA-2014/APHA 4500-E	0.01mg/l to 1.0 mg/l

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2.	Construction Water	pH	IS:3025(P-11)1983, RA-2012	4.0 - 10.0
		Chloride(as Cl)	IS:3025(P-32)1988, RA-2014	5mg/l to 5000mg/l
		Sulphate (as SO <sub>3</sub> )	IS:3025(P-24)1986, RA-2014	1mg/l to 1000 mg/l
		To neutralize 100ml sample of water using phenolphthalein as an indicator, it should not require more than 5 ml of 0.02 normal NaOH	IS:3025(P-22)1986, RA-2014	0.1ml to 50ml
		To neutralize 100ml sample using mixed indicator, it should not require more than 25 ml of 0.02 normal sulphuric acid	IS:3025(P-23)1991, RA-2014	0.1ml to 50 ml
		Organics solids	IS:3025(P-18)1984,RA-2012,	5mg/l to 1000 mg/l
		Inorganic solids	IS:3025(P-16)1984,RA-2012, IS:1069 1993, RA-2013	2mg/l to 5000 mg/l
		Suspended matter	IS: 3025(P-17)-1984, RA-2012	2mg/l to 2000 mg/l
3.	Water for Processed Food Industry	pH	IS:3025(P-11)1983, RA-2012	4.0 – 10.0
		Colour	IS:3025(P-04)1983, RA-2012	1hazen to 25hazen
		Turbidity	IS:3025(P-10)1984, RA-2012	1 NTU TO 40 NTU
		Total solids	APHA 22 <sup>nd</sup> ed2012 method 2540B	2mg/l to 5000 mg/l
		Total Hardness (as CaCO <sub>3</sub> )	IS:3025(P-21)2009,RA-2014	5mg/l to 1000mg/l

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		Sulphate (as SO <sub>4</sub> )	IS:3025(P-24)1986, RA-2014	2mg/l to 1000 mg/l
		Chloride (as Cl)	IS:3025(P-32)1988, RA-2014	2mg/l to 5000mg/l
		Fluoride (as F)	IS:3025(P-60)2008, RA-2013 APHA 22 <sup>nd</sup> Ed.-4500D	0.1mg/l to 5.0mg/l
		Cyanide (as CN)	IS:3025(P-27)1986, RA-2014 APHA 4500-E	0.01mg/l to 1.0 mg/l
		Iron (as Fe)	IS:3025(P-53)2003, RA-2014 IS:3025(P-2)2004, RA-2014	0.05mg/l to 5.0 mg/l
		Magnesium (as Mg)	IS:3025(P-46)1994, RA-2014 APHA 3500-Mg (B)	1mg/l to 1500mg/l
		Nitrate (as NO <sub>3</sub> )	IS:3025(P-34)1988, RA-2014	0.1mg/l to 5.0mg/l
		Phenolic compound (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025(P-43)1992, RA-2014	0.001mg/l to 1.0 mg/l
		Total alkalinity (as HCO <sub>3</sub> )	IS:3025(P-23)1991, RA-2014	1.0mg/l to 1000 mg/l
4.	Reagent Grade Water	Conductivity	IS:3025(P-14)1984, RA-2013	0.2µmhos/cm to 500 µmhos/cm
		Non-volatile residue or total solids	IS:3025(P-18)1984, RA-2012, IS:1069 1993, RA-2013	5mg/l to 10000mg/l
		Silica(as SiO <sub>2</sub> )	IS:3025(P-35)1988, RA-2014	0.1mg/l to 5.0mg/l
		Colour retention of KMnO <sub>4</sub> , at 27*2°C minutes	Annexure A of IS:1070:1992, RA-2013	Qualitative (Pass/Fail)
5.	Water for Swimming Pools	pH	IS:3025(P-11)1983, RA-2012	4.0 -10.0

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		Total alkalinity (as HCO <sub>3</sub> )	IS:3025(P-23)1991, RA-2014	1.0mg/l to 500 mg/l
		Total residual chlorine	IS:3025(P-26)1986, RA-2014	0.1mg/l to 5mg/l
		Oxygen absorbed in 4 hrs at 27°C	IS:3025(P-63)2007, RA-2013	0.4mg/l to 10.0mg/l
		Total dissolved solid	IS:3025(P-16)1984, RA-2012	5mg/l to 5000 mg/l
		Chloride(as Cl)	IS:3025(P-32)1988, RA-2014	2mg/l to 5000mg/l
		Iron(as Fe)	IS:3025(P-53)2003, RA-2014 IS:3025(P-2)2004, RA-2014	0.05mg/l to 5.0 mg/l
		Colour	IS:3025(P-04)1983, RA-2012	1hazen to 25 hazen
		Turbidity	IS:3025(P-10)1984, RA-2012	1NTU to 40 NTU
		Aluminium	IS:3025(P-55)2003, RA-2014	0.01mg/l to 5mg/l
<b>VI.</b>	<b>ANIMAL FOOD &amp; FEEDS</b>			
<b>1.</b>	<b>Pet Foods, Oil Cake, Poultry feed</b>	Moisture	IS 7874( P- 1)-1975, RA-2014	0.1% to 20 %
		Total ash	IS 7874( P- 1)-1975, RA-2014	0.05% to 40%
		Crude protein	IS 7874( P- 1)-1975, RA-2014	0.1% to 80%
		Crude fiber	IS 7874( P- 1)-1975, RA-2014	0.1% to 20%
		Crude fat	IS 7874( P- 1)-1975, RA-2014	0.1% to 20%

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		Acid insoluble ash	IS 7874( P- 1)-1975, RA 2014	0.01% to 5%
		Salt	IS 7874( P- 2)-1975, RA 2009	0.05% to 10%
		Phosphorus	IS 7874( P- 2)-1975, RA 2009/AOAC 965.17 20 <sup>th</sup> Edition, 2016	0.01% to 5%
		Sulphur	IS 1664-2002, RA 2008	0.1% to 10%
<b>VII.</b>	<b>FOOD &amp; AGRICULTURAL PRODUCTS</b>			
<b>1.</b>	<b>Oils &amp; Fats</b>			
<b>a.</b>	<b>Edible Oils</b>	Moisture and volatile matter	IS 548 (P-1)-1964 , RA2015	0.01% to 5%
		Insoluble Impurities	IS 548 (P-1)-1964 , RA2015	0.01% to 1%
		Acid value	IS 548 (P-1)-1964 , RA2015	0.1 to 40
		Free fatty acids	IS 548 (P-1)-1964 , RA2015	0.1% to 10%
		Unsaponifiable matter	IS 548 (P-1)-1964 , RA2015	0.01% to 10%
		Refractive index	IS 548 (P-1)-1964 , RA2015	1.4300 to1.4700
		Specific gravity	IS 548 (P-1)-1964 , RA2015	0.85to 0.95
		Saponification value	IS 548 (P-1)-1964 , RA2015	150 to 300
		Iodine Value	IS 548 (P-1)-1964 , RA2015	7 to 200
		Allyl isothiocyanate	IS 548 (P-1)-1964 , RA2015	0.1% to 1%
		Peroxide Value	IS 548 (P-1)-1964 , RA2015	0.1 meq/kg to100 meq/kg
		Flash Point	IS 1448 (P-21)-2012	50°C to 400°C

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		Test for the Presence Of Karanja (Punjam) Oil And Other Oils containing Phenolic Substances	IS 548(P-2): 1976, RA 2010	Qualitative (Present/Absent)
		Test For the Presence Of Argemone Oil By Paper Chromatographic method	IS548(P-2):1976,RA 2010	Qualitative (Present/Absent)
		Test For the Presence Of Hydrocyanic Acid	IS548(P-2):1976,RA 2010	Qualitative (Present/Absent)
		Test For the Presence Of Mineral Oil	IS 548 (P-2):1976, RA 2010	Qualitative (Present/Absent)
		Test For the Presence Of Groundnut Oil [Bellier Turbidity Temperature] Test	IS 548 (P-2): 1976, RA 2010	10°C to 50°C
		Test For the Presence of Kusum Oil And Other Oils Containing Cyanogenic Compounds	IS 548 (P-2): 1976, RA 2010	Qualitative (Present/Absent)
		Test for the Presence of Castor Oil	IS 548 (P-2): 1976, RA 2010	Qualitative (Present/Absent)
		Test For the Presence Of Neem Oil	IS 548 (P-2): 1976, RA 2010	Qualitative (Present/Absent)
		Test for detection of tricresyl phosphate in edible oil	IS 548 (P-2):Sec22-1993, RA 2009	Qualitative (Present/Absent)
		Poly bromide test	IS 546: 2014	Qualitative (Present/Absent)
		B.R. Reading	IS 548(P-1):1964, RA 2015	40 to 65
		Oryzanol	IS 3448: 2014	0.1% to 10%
		Phosphorous	IS 4276:2014	1 ppm to 500ppm
		Insoluble bromide test	IS 4276:2014	Qualitative (Present/Absent)

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2.	Ghee	Moisture	IS 3508-1966, RA 2013	0.01% to 5%
		Butyro Refractometer Reading	IS 3508-1966, RA 2013	40 to 50
		Polenske Value	IS 3508-1966, RA 2013	0.1 to 10
		Reichert Meissel value	IS 3508-1966, RA 2013	1.0 to 50.0
		Melting point	IS 3508-1966, RA 2013	15°C to 80°C
		Free Fatty acid	IS 3508-1966, RA 2013	0.01% to 10.0%
		Baudouin Test	IS 3508-1966, RA 2013	Qualitative (Pass/Fail)
3.	Cereals, Pulses and Cereals Products			
a.	Wheat Atta	Moisture	IS 1155-1968, RA 2015	0.1% to 20 %
		Total ash	IS 1155-1968, RA 2015	0.05% to 5 %
		Acid insoluble ash	IS 1155-1968, RA 2015	0.01% to 1 %
		Gluten	IS 1155-1968, RA 2015	1% to 25 %
		Alcoholic acidity	IS 1155-1968, RA 2015	0.01% to 1 %
		Granularity	IS 1155-1968, RA 2015	Qualitative (Pass/Fail) on sieve
		Crude Fiber	IS 1155-1968, RA 2015	0.2% to 10 %
		Sedimentation value	IS 13864-2015	10 ml to 40ml
b.	Maida	Moisture	IS 1009-1979, RA 2015	0.1% to 25 %
		Total ash	IS 1009-1979, RA 2015	0.05% to 5 %
		Acid insoluble ash	IS 1009-1979, RA 2015	0.01% to 1 %
		Gluten	IS 1009-1979, RA 2015	1% to 25 %
		Alcoholic acidity	IS 1009-1979, RA 2015	0.01% to 1 %
		Granularity	IS 1009-1979, RA 2015	Qualitative (Pass/Fail) on sieve
c.	Suji	Moisture	IS 1010-1968, RA 2015	0.1% to 25 %
		Total ash	IS 1010-1968, RA 2015	0.05% to 5 %
		Acid insoluble ash	IS 1010-1968, RA 2015	0.01% to 1 %
		Gluten	IS 1010-1968, RA 2015	1% to 20 %
		Alcoholic acidity	IS 1010-1968, RA 2015	0.01% to 2 %
d.	Besan	Moisture	IS:2400-1976, RA 2015	0.1% to 20 %
		Total Ash	IS:2400-1976, RA 2015	0.05% to 5 %
		Acid Insoluble Ash	IS:2400-1976, RA 2015	0.01% to 0.5 %
		Alcoholic Acidity	IS:2400-1976, RA 2015	0.01% to 0.5%

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		Protein	IS:2400-1976, RA 2015	1% to 40 %
		Presence of Lathyrus sativus (khesari dal)	IS:2400-1976, RA 2015	Qualitative (Present/Absent)
e.	Food Grains (Pulses & Whole Grains)	Moisture	IS 4333(P-2)-2002, RA 2017	1 %to 20 %
		Foreign Matter	IS 4333(P-1)-1996, RA 2012	0.01% to 10%
		Other edible grains	IS 4333(P-1)-1996, RA 2012	0.1%to 20%
		Damaged grain	IS 4333(P-1)-1996, RA 2012	0.01% to 10%
		Weevil led grains	IS 4333(P-1)-1996, RA 2012	1 % by count to 20 % by count
		Uric acid	IS 4333(P-5)-1970, RA 2015	10 mg/kg to 200mg/kg
f.	Processed Cereal Based Complementary Food and Milk Cereal Based Complementary Food (Weaning Food)	Moisture	IS 16072-2012	0.1% to 30 %
		Protein	IS 7219-1973, RA 2010	0.1% to 50%
		Total ash	IS 14433-2007, RA 2012	0.05% to 20%
		Acid insoluble ash	IS 14433-2007, RA 2012	0.01 %to 5 %
		Crude fiber	IS 10226 (P-1)-1982, RA2015	0.1% to20%
		Total carbohydrate	IS 1656-2007, RA2012	20% to 90%
		Fat	IS 14433-2007, RA 2012	0.1% to 25%
		Energy	IS 9487-1980, RA 2010	200 kcal/100g to 500kcal/100g
		Vitamin C	IS 5838-1970, RA 2010	1 mg/100g to 200mg/100g
		Total Dietary fiber	AOAC 985.29 20 <sup>th</sup> Edition, 2016	0.5% to 60%
4.	Herbs, Spices and Condiments	Moisture	IS 1797-2017	1% to 30 %
		Total ash	IS 1797-2017	0.5% to 25 %
		Acid insoluble ash	IS 1797-2017	0.02% to 5 %
		Non volatile ether extract	IS 1797-2017	0.5% to 40 %
		Volatile oil	IS 1797-2017	0.1 ml/100g to 20 ml/100g

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		Salt	IS 1797-2017	0.1% to 20 %
		Crude fiber	IS 1797-2017	0.1% to 25 %
		Starch	IS 4706 (P- 2)-1978, RA 2015	40 %to 70 %
		Curcumin	IS 10925-1984, RA 2012	0.5% to 10 %
		Presence of chromate	IS 3576-2010	Qualitative (Present/Absent)
		Piperine	FSSAI Manual- Spices and Condiments, 2016	0.5% to 10%
		Fat	IS 1797-1985, RA 2013	0.5% to 20 %
		Protein	IS 7219-1973, RA 2010	0.1 % to 35 %
		Carbohydrate	IS 1656-2007 , RA 2012	30% to 90 %
		Energy	IS 9487-1980, RA 2010	250 kcal/100g to 550kcal/100g
5.	Honey and Honey Products	Moisture	IS 4941-1994, RA 2008	0.1% to 50 %
		Specific gravity	IS 4941-1994, RA 2008	1 to1.5
		Total Reducing Sugar	IS 4941-1994, RA 2008	50% to 85 %
		Sucrose	IS 4941-1994, RA 2008	0.5% to 10 %
		Fructose-glucose ratio	IS 4941-1994, RA 2008	0.5 to 2
		Ash	IS 4941-1994, RA 2008	0.01% to 5 %
		Acidity	IS 4941-1994, RA 2008	0.01% to 0.5 %
		Fiehe ´ s test	IS 4941-1994, RA 2008	Qualitative (Present/Absent)
		Hydroxymethyl furfural (HMF)	IS 4941-1994, RA 2008	1.0 mg/kg to 1000 mg/kg
		Optical Density at 660nm	IS 4941-1994, RA 2008	0.100 to 0.800
6.	Milk and Dairy Products			
a.	Milk	Total Solid	IS 1479(P-2)-1961, RA2013	1% to 20 %
		Ash	IS 1479(P-2)-1961, RA2013	0.05 %to 2%
		Protein	IS 1479(P-2)-1961, RA2013	0.5% to 10%
		Fat	IS 1479(P-2)-1961, RA2013	0.1% to 10%

**Jitendra B. Vispute**  
Program Manager

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		Solid not fat	IS 10083-1982, RA2013	1% to 15%
		Titratable Acidity	IS 1479(P-1)-2016	0.01 %to10%
		Lactose	IS 1479(P-2)-1961, RA2013	1% to 10%
		<b>Adultrants</b>		
		Cane sugar	FSSAI Manual- Milk and Milk Products, 2016	Qualitative (Present/Absent)
		Starch	FSSAI Manual- Milk and Milk Products, 2016	Qualitative (Present/Absent)
		Added Urea	FSSAI Manual- Milk and Milk Products, 2016	Qualitative (Present/Absent)
		Neutralizer	FSSAI Manual- Milk and Milk Products, 2016	Qualitative (Present/Absent)
		Formaldehyde	FSSAI Manual- Milk and Milk Products, 2016	Qualitative (Present/Absent)
<b>b.</b>	<b>Milk Powder</b>	Moisture	IS 1165-2002, RA2013	0.1% to 10 %
		Total solid	IS 1165-2002, RA2013	80% to 99.5 %
		Fat	IS 1165-2002, RA2013	0.5% to 40 %
		Total ash	IS 1165-2002, RA2013	0.1% to 8 %
		Titratable acidity	IS 1165-2002, RA2013	0.01% to 5 %
		Protein	IS 7219-1973, RA 2010	0.1% to 40 %
		Carbohydrate	IS 1656-2007, RA 2012	20% to 70 %
		Energy	IS 9487-1980, RA 2010	250 Kcal/100g to 600 Kcal/100g
<b>c.</b>	<b>Condensed Milk, Partly Skimmed and Skimmed condensed milk, UHT Condensed Milk and UHT Condensed Skimmed Milk</b>	Total milk solid	IS 1166-1986 , RA 2013	10% to 40 %
		Fat	IS 1166-1986, RA 2013	0.1% to 20 %
		Sucrose	IS 1166-1986, RA 2013	1% to 60 %
		Titratable Acidity(as lactic acid)	IS 1166-1986, RA 2013	0.01% to 1 %
		Accelerated Storage Test on Container	IS 1166-1986, RA 2013	Qualitative (Pass/Fail)
		Titratable Acidity(as lactic acid) after incubation, of packages for 7 days at 37°C	IS 1166-1986 , RA 2013	0.01% to 1 %

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d.	Paneer	Moisture	IS 10484-1983, RA 2014	0.1% to 80 %
		Milk fat	IS 10484-1983, RA 2014	0.5% to 70 %
		Titratable Acidity	IS 10484-1983, RA 2014	0.01% to 2 %
e.	Skimmed Milk Powder	Moisture	IS 13334 (Part-1)-2014/ IS 13334 (Part-2)-2014	0.1% to 20 %
		Total solid	IS 13334 (Part-1)-2014/ IS 13334 (Part-2)-2014	80% to 99.5 %
		Fat	IS 13334 (Part-1)-2014/ IS 13334 (Part-2)-2014	0.1% to 30 %
		Total ash	IS 13334 (Part-1)-2014/ IS 13334 (Part-2)-2014	0.1% to 10 %
		Titratable acidity	IS 13334 (Part-1)-2014/ IS 13334 (Part-2)-2014	0.01% to 5 %
7.	Oil Seeds and by Products	Moisture	IS 3579-1966, RA 2015	0.1% to 25 %
		Oil content	IS 3579-1966, RA 2015	0.1% to 80 %
		Acid value of extracted fat	IS 3579-1966, RA 2015	0.1 to 10
		Damaged Seed & Weevilled seeds	IS 3579-1966, RA 2015	0.02 %to 25 %
		Slightly damaged seeds	IS 3579-1966, RA 2015	0.02% to 15 %
		Shrivelled and immature seeds	IS 3579-1966, RA 2015	0.02% to 15 %
		Impurities	IS 3579-1966, RA 2015	0.01% to 20 %
8.	Tea	Moisture	IS 13853-1994, RA 2009	0.1% to 20 %
		Total ash	IS 13854-1994, RA 2009	1% to 10 %
		Water soluble ash of total ash	IS 13855-1993, RA 2009	1.0% to 80%
		Acid insoluble ash	IS 13857-1993, RA 2009	0.1% to 5 %
		Water extract	IS 13862-1999, RA 2009	1% to 60 %
		Alkalinity of water soluble ash expressed as KOH	IS 13856-1993, RA 2009	0.1% to 10 %
		Crude fiber	IS 10226 (P-1)-1982, RA 2015	0.1% to 20 %
9.	Fruit and Fruit Products			
a.	Pickle	Drained wt	IS 2860-1964, RA 2008	1% to 90%

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		Acidity	IS 3501-1966, RA 2009	0.1% to 10%
		Sodium chloride	IS 3501-1966, RA 2009	0.1% to 20%
<b>10.</b>	<b>Jams, Juices, Sauces &amp; Concentrates</b>			
<b>a.</b>	<b>Jam, Jelly</b>	Total soluble solid	IS 5861-1993, RA 2008	1% to 99%
<b>b.</b>	<b>Ketchup, Sauce</b>	Total soluble solid	IS 3882-1966, RA 2010	1% to 99%
		Acidity	IS 2860-1964, RA 2008	0.1% to 10%
<b>11.</b>	<b>Vegetables &amp; Vegetables Products</b>			
	<b>Dehydrated Peas</b>	Moisture	IS 4624-1978, RA2013	0.1% to 20%
		Total ash	IS 4624-1978, RA2013	0.1% to 10%
		Acid insoluble ash	IS 4624-1978, RA2013	0.01% to 2%
		Peroxidase test	IS 4624-1978, RA2013	Qualitative (Present/Absent)
<b>12.</b>	<b>Bakery &amp; Confectionery Products</b>			
<b>a.</b>	<b>Biscuit and Cookies</b>	Moisture	IS 1011-2002, RA2009	1% to 30 %
		Acidity of extracted fat	IS 1011-2002, RA2009	0.1% to 5%
		Acid insoluble ash	IS 1011-2002, RA2009	0.01% to 5%
		Total ash	IS 12711-1989, RA 2010	0.1% to 5%
		Protein	IS 7219-1973, RA 2010	1.0% to 20 %
		Fat	IS 12711-1989, RA 2010	0.5% to 40 %
		Carbohydrate	IS 1656-2007, RA 2012	25% to 80%
		Energy	IS 9487-1980, RA 2010	300 kcal/100g to 600kcal/100g
		Sugar as sucrose	IS 2650-1975, RA 2010	0.5% to 40%
		Total Dietary Fiber	AOAC 985.29 20 <sup>th</sup> Edition, 2016	0.5% to 20%
<b>b.</b>	<b>Namkeen</b>	Moisture	IS 15271-2003, RA2013	1% to 10 %
		Acid insoluble ash	IS 15271-2003, RA2013	0.01% to 5 %
		Fat	IS 15271-2003, RA2013	1% to 60 %
		Acid value of extracted fat	IS 15271-2003, RA2013	0.1% to 5%
		Peroxide value	IS 15271-2003, RA2013	0.1 meq/kg to 100meq/kg
		Protein	IS 7219-1973, RA 2010	0.5% to 40 %
		Carbohydrate	IS 1656-2007, RA 2012	20% to 80%
		Energy	IS 9487-1980, RA 2010	400 kcal/100g to 700kcal/100g

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<b>c.</b>	<b>Toffee</b>	Moisture	IS 6287-1985, RA2010	0.1% to 25%
		Acid insoluble ash	IS 6287-1985, RA2010	0.01% to 0.5 %
		Sulphated ash	IS 6287-1985, RA2010	0.01% to 10%
		Reducing sugar	IS 6287-1985, RA2010	1% to 90%
		Sucrose	IS 6287-1985, RA2010	1% to 80%
		Fat	IS 6287-1985, RA2010	0.1% to 20%
		Protein	IS 6287-1985, RA2010	0.1% to 20%
		Lactose (in milk Toffee)	IS 1479(P-2)-1961, RA2013	0.5% to 10%
<b>13.</b>	<b>Sugar and Sugar Products</b>			
<b>a.</b>	<b>Sugar</b>	Loss on drying	IS 15279-2003, RA 2013	0.01% to 20%
		Reducing sugar	IS 15279-2003, RA 2013	0.01% to 5%
		Colour	IS 15279-2003, RA 2013	10 IU to 500 IU
		Conductivity ash	IS 15279-2003, RA 2013	0.01% to 5%
<b>b.</b>	<b>Liquid Glucose</b>	Total solid content	IS 873-1974, RA2010	50% to 99%
		Total ash	IS 873-1974, RA2010	0.01% to 5%
		pH	IS 873-1974, RA2010	1 to 14
		Sulphur dioxide	IS 873-1974, RA2010	10 mg/kg to 500mg/kg
<b>c.</b>	<b>Gur</b>	Moisture	IS 12923-1990, RA 2013	0.01 %to 50%
		Reducing sugar	IS 12923-1990, RA 2013/ FSSAI Manual- Beverages, Sugar and Sugar Products & Confectionary Products, 2015	1% to 10%
		Sucrose	IS 12923-1990, RA 2013/ FSSAI Manual- Beverage, Sugar and Sugar Products & Confectionary Products, 2015	1% to 90%
		Water insoluble matter	IS 12923-1990, RA 2013/ FSSAI Manual- Beverage, Sugar and Sugar Products & Confectionary Products, 2015	0.1% to 10%

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		Sulphated ash	IS 12923-1990, RA 2013	0.1% to 10%
		Acid insoluble ash	IS 12923-1990, RA 2013	0.05% to 5%
14.	Starch and Starch Products	Moisture	IS 4706 (P-2)-1978, RA 2015	0.1% to 20%
		Total ash	IS 4706 (P-2)-1978, RA 2015	0.05% to 10%
		Acid insoluble ash	IS 4706 (P-2)-1978, RA 2015	0.01% to 5%
		Sulphated ash	IS 4706 (P-2)-1978, RA 2015	0.01% to 10%
		Starch	IS 4706 (P-2)-1978, RA 2015	1% to 90%
		Protein	IS 4706 (P-2)-1978, RA 2015	0.1% to 30%
		pH of aqueous extract	IS 4706 (P-2)-1978, RA 2015	1to 14
		Free acidity	IS 4706 (P-2)-1978, RA 2015	1 ml/100g to 100ml/100g
		Sulphur dioxide	IS 4706 (P-2)-1978, RA 2015	10 mg/kg to 500mg/kg
		Alcoholic acidity	IS 4706 (P-2)-1978, RA 2015	0.01% to 5%
		Crude fiber	IS 4706 (P-2)-1978, RA 2015	0.1% to 20%
15.	Nut & Nut Products			
a.	Solvent Extracted Flour	Moisture	IS 4684-1975, RA 2015	0.1% to 20%
		Total ash	IS 4684-1975, RA 2015	0.05% to 10%
		Ash insoluble ash	IS 4684-1975, RA 2015	0.01% to 5%
		Crude protein	IS 4684-1975, RA 2015	0.5% to 80%
		Crude fiber	IS 4684-1975, RA 2015	0.1% to 10%
		Fat	IS 4684-1975, RA 2015	0.1% to 20%
		Acid value of extracted fat	IS 4684-1975, RA 2015	0.1 to 10
b.	Meat and Meat Products	Moisture	IS 5960(P-5)-2001, RA 2009	1% to 90%

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		Total fat	IS 5960(P-3)-1970 , RA 2010	0.1% to 60%
		Total ash	IS 5960(P-2)-2000, RA 2009	0.1% to 10%
		Salt	IS 5960(P-6)-1997, RA2009	0.1% to 10%
		Protein	IS 5960(P-1)-1996, RA2009	0.2% to 90%
<b>c.</b>	<b>Tobacco and Tobacco Products</b>	Loss on Heating	IS 5643-1999, RA 2009	0.1% to 40%
		Total ash	IS 5643-1999 , RA 2009	0.05% to 30%
		Ash insoluble in HCl	IS 5643-1999 , RA 2009	0.01% to 10%
		Added colouring matter	FSSAI Manual- Food Additives, 2016	Qualitative (Present/Absent)
<b>d.</b>	<b>Infant Foods</b>	Total alkaloid as Nicotine	IS 5643-1999, RA 2009	0.1% to 10 %
		Moisture	IS 14433-2007, RA 2012	0.1% to 10 %
		Protein	IS 14433-2007, RA2012	0.1% to 40%
		Fat	IS 14433-2007, RA 2012	0.1% to 40%
		Total ash	IS 14433-2007, RA 2012	0.05% to 10%
		Acid insoluble ash	IS 14433-2007, RA 2012	0.01% to 10%
		Total carbohydrate	IS 1656-2007, RA2012	1% to 80%
		Energy	IS 9487-1980, RA 2010	200 kcal/100g to 600kcal/100g
		Vitamin C	IS 5838-1970, RA 2010	1 mg/100g to 200mg/100g
<b>16. a.</b>	<b>Beverages Alcoholic</b>			
		Ethyl alcohol content	IS 3752-2005, RA2009	1%v/v to 90%v/v
		Total acidity	IS 3752-2005, RA2009	1 g/100litres to 2500g/100litres
		Methanol	IS 3752-2005, RA2009	5ppm to 200 ppm
		Volatile acidity as acetic acid	IS 3752-2005, RA2009	1 g per 100litres to 150g per 100litres
		Residue on evaporation	IS 3752-2005, RA2009	0.1% to 30%
		Esters	IS 3752-2005, RA2009	1 g per 100litres to 200g per 100litres

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		Furfural	IS 3752-2005, RA2009	0.1 g per 100litres to 12g per 100litres
		Aldehyde as acetaldehyde	IS 3752-2005, RA2009	1 g per 100litres to 45g per 100litres
		Higher alcohol as amyl alcohol	IS 3752-2005, RA2009	1 g per 100litres to 400g per 100litres
<b>b.</b>	<b>Non Alcoholic</b>	Total Soluble Solid	IS 13815-2010	1% to 99%
		Acidity	IS 2860-1964, RA 2008	0.1% to 10%
<b>17.</b>	<b>Coffee &amp; Cocoa Products</b>			
<b>a.</b>	<b>Chocolates</b>	Moisture	IS 1163-1992, RA 2009	0.1% to 10%
		Total fat	IS 1163-1992, RA 2009	0.1% to 60%
		Milk fat	IS 1163-1992, RA 2009	0.1% to 15%
		Milk solids	IS 1163-1992, RA 2009	0.5 %to 25%
		Sugar	IS 1163-1992, RA 2009	0.5% to 90 %
		Acid insoluble ash	IS 1163-1992, RA 2009	0.01% to 10%
<b>18.</b>	<b>Others</b>			
<b>a.</b>	<b>Marconi Spaghetti Vermicelli, Egg Noodles</b>	Moisture	IS 1485-1993, RA 2015	0.1% to 30%
		Total ash	IS 1485-1993, RA 2015	0.05% to 20%
		Acid insoluble ash	IS 1485-1993, RA 2015	0.01% to 5%
		Protein	IS 1485-1993, RA 2015	0.1% to 40%
<b>b.</b>	<b>Malted and Malt Based Foods</b>	Moisture	IS 16072-2012	0.1% to 10%
		Total protein	IS 7219-1973, RA2010	0.1% to 50%
		Total fat	IS 11721-2013	0.1% to 60%
		Total ash	IS 14433-2007, RA2012	0.1% to 10%
		Acid insoluble ash	IS 14433-2007, RA2012	0.01% to 5%
		Test for starch	IS 1806-1975 RA 2011	Qualitative (Present/Absent)
		Added colour	FSSAI Manual- Food Additives, 2016	Qualitative (Present/Absent)
<b>c.</b>	<b>Edible Common Salt, Iodized Salt/ Vacuum Evaporated Iodized Salt and Refined Iodized</b>	Moisture	IS 253-2014/ IS 7224-2006, RA 2010	0.01% to 10%
		Ferro cyanide	IS 253-2014/ IS 7224-2006, RA 2010	Not more than 10ppm
		Sodium chloride	IS 253-2014/ IS 7224-2006, RA 2010	1%to 99.9%

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	<b>Salt</b>	Matter soluble in water other than sodium chloride	IS 253-2014/ IS 7224-2006, RA 2010	0.01% to 5%
		Water insoluble matter	IS 253-2014 / IS 7224-2006, RA 2010	0.01% to 10%
		Calcium	IS 253-2014/ IS 7224-2006, RA 2010	0.002% to 1%
		Magnesium	IS 253-2014/ IS 7224-2006, RA 2010	0.001% to 1%
		Alkalinity as Na <sub>2</sub> CO <sub>3</sub>	IS 253-2014/ IS 7224-2006, RA 2010	0.01% to 2%
		Sulphate	IS 253-2014/ IS 7224-2006, RA 2010	0.01% to 5%
		Iodine	IS 7224-2006 , RA 2010	1 mg/kg to 250mg/kg
<b>19.</b>	<b>Fatty Acid Products</b>			
<b>a.</b>	<b>Edible Oils and Fats</b>	Saturated Fat	ATHB/SOP/INST/009 Issue No.-01 Issue Date-31/01/2017	0.04 to 80%
		Monounsaturated Fat	ATHB/SOP/INST/009 Issue No.-01 Issue Date-31/01/2017	0.04 to 80%
		Polyunsaturated Fat	ATHB/SOP/INST/009 Issue No.-01 Issue Date-31/01/2017	0.04 to 80%
		Trans Fat	ATHB/SOP/INST/009 Issue No.-01 Issue Date-31/01/2017	0.04 to 80%
		Cholesterol	ATHB/SOP/INST/009 Issue No.-01 Issue Date-31/01/2017	5 to 100 mg/kg
<b>b.</b>	<b>Processed Foods (Ready to Eat Food)</b>	Saturated Fat	ATHB/SOP/INST/009 Issue No.-01 Issue Date-31/01/2017	0.04 to 80%
		Monounsaturated Fat	ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%

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		Polyunsaturated Fat	Issue Date-31/01/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Trans Fat	Issue Date-31/01/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Cholesterol	Issue Date-31/01/2017 ATHB/SOP/INST/010 Issue No.-01	5 to 100 mg/kg
20.	Bakery & Bakery Product	Saturated Fat	Issue Date-13/02/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Monounsaturated Fat	Issue Date-31/01/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Polyunsaturated Fat	Issue Date-31/01/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Trans Fat	Issue Date-31/01/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Cholesterol	Issue Date-31/01/2017 ATHB/SOP/INST/010 Issue No.-01	5 to 100 mg/kg
21.	Milk & Dairy Products	Saturated Fat	Issue Date-13/02/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Monounsaturated Fat	Issue Date-31/01/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Polyunsaturated Fat	Issue Date-31/01/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%
		Trans Fat	Issue Date-31/01/2017 ATHB/SOP/INST/009 Issue No.-01	0.04 to 80%

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		Cholesterol	Issue Date-31/01/2017 ATHB/SOP/INST/010 Issue No.-01 Issue Date-13/02/2017	5 to 100 mg/kg
<b>22.</b>	<b>Sugar &amp; Sugar Products</b>			
<b>a.</b>	<b>Honey &amp; Honey Products</b>	Sucrose	AOAC 977.20 & ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
		Fructose	AOAC 977.20 & ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
		Maltose	AOAC 977.20 & ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
		Glucose	AOAC 977.20 & ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
<b>23.</b>	<b>Process Food (Thermally Processed Fruit &amp; Vegetable Juices)</b>	Sucrose	AOAC 982.14 & AOAC 977.20 ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
		Fructose	AOAC 982.14 & AOAC 977.20 ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
		Maltose	AOAC 982.14 & AOAC 977.20 ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%

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		Glucose	AOAC 982.14 & AOAC 977.20 ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
24.	Bakery Product	Sucrose	AOAC 982.14 & ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
		Fructose	AOAC 982.14 & ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
		Maltose	AOAC 982.14 & ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
		Glucose	AOAC 982.14 & ATHB/SOP/INST/011 Issue No.-01 Issue Date-28/12/2017	0.5% to 80%
VIII.	SOIL & ROCK			
1. a.	Clays & Soils Soil	pH	IS: 2720 (P-26):1987, RA-2011	2-12
		Calcium Carbonate as CaCO <sub>3</sub>	IS:2720 (P-23):1976, RA-2010	1% to 50%
		Organic Matter	IS:2720 (P-22):1972, RA-2015	0.1% to 20%
		Total Soluble Solid	IS:2720 (P-21):1977, RA-2016	0.5% to 30%
		Electrical Conductivity (EC)	IS: 14767:2000, RA-2016	1 µmhos/cm to 10000 µmhos/cm

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		Total Phosphorus	IS: 10158:1982, RA-2009	5 mg/kg to 5000 mg/kg
		Total Kjeldahl Nitrogen	IS:14684-1999 RA 2014	0.1% to 50%
		Potassium	IS: 9497:1980, RA 2010 (ICP-OES)	1 mg/kg to 1000 mg/kg
		Sodium	IS: 9497:1980, RA-2010 (ICP-OES)	1 mg/kg to 1000 mg/kg
<b>IX.</b>	<b>BUILDING MATERIAL</b>			
<b>1.</b>	<b>Hydraulic Cement/ Portland Cement/ Portland Pozzolana Cement/ Portland Slag Cement</b>	Aluminum Oxide	Cl.4.6.1 of IS 4032 : 1985; RA. 2009	0.1% to 20 %
		Calcium Oxide	Cl.4.7.2 of IS 4032 : 1985; RA. 2009	0.1% to 70 %
		Chloride	IS 4032 : 1985; RA. 2009	0.01% to 1 %
		Insoluble Residue	IS 4032 : 1985; RA. 2009	0.1% to 40 %
		Iron Oxide	Cl.4.5.2 of IS 4032 : 1985; RA. 2009	0.1% to 10 %
		Loss on Ignition	IS 4032 : 1985; RA. 2009	0.1% to 10 %
		Magnesium Oxide	Cl.4.8.2 of IS 4032 : 1985; RA. 2009	0.5% to 15 %
		Silica	IS 4032 : 1985; RA. 2009	0.1% to 50 %
	<b>Fly Ash</b>	Total Sulphur as SO <sub>3</sub>	IS 4032 : 1985; RA. 2009	0.5% to 5 %
		Sodium Oxide (Na <sub>2</sub> O)	IS:4032 : 1985; RA. 2009	0.01% to 1 %
		Potassium Oxide (K <sub>2</sub> O)	IS:4032 : 1985; RA. 2009	0.01 %to 2 %
<b>2.</b>		Loss on Ignition	IS: 1727 : 1967, RA 2008	0.1% to 15.0%
		Silica	IS: 1727 : 1967, RA 2008	20% to 65.0%
		Fe <sub>2</sub> O <sub>3</sub> +Al <sub>2</sub> O <sub>3</sub>	IS: 1727 : 1967, RA 2008	0.5% to 50 %
		Magnesium Oxide	IS: 1727 : 1967, RA 2008	0.4 %to 10%
		SO <sub>3</sub>	IS: 1727 : 1967, RA 2008	0.1% to 5.0%
	<b>Plaster of Paris/</b>	Available Alkali Na <sub>2</sub> O	IS: 1727 : 1967, RA 2008	0.01% to 3.0%
		Chloride	IS: 1727 : 1967, RA 2008	0.01% to 0.15%
<b>3.</b>		Free Lime	IS:1288:1982, RA 1999	0.1% to 70%
		Loss on Ignition	IS:2547(P-1):1976, Appendix B, RA 2007	0.1% to 10%

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4.	Gypsum	Total Sulphur as SO <sub>3</sub>	IS:1288:1982, RA 1999	0.5 % to 50%
		Calcium oxide	IS:2547(P-1):1976, Appendix C, RA 2007	0.1% to 10.0%
		Magnesium oxide	IS:1288:1982, RA 1999	0.5% to 15%
5.	Bentonite	pH Value	IS:6186:1997, RA 2010	1 - 13
6.	Admixture	Ash Content	IS: 9103 : 1999 Annex E, RA 2013	1% to 35 %
		Chloride Content	IS: 9103 : 1999 Annex E, RA 2013	0.1% to 10 %
		Dry Material Content	IS: 9103 : 1999 Annex E, RA 2013	1% to 70 %
		pH Value	IS: 9103 : 1999 Annex E, RA 2013	2 – 12
		Relative Density	IS: 9103 : 1999 Annex E, RA 2013	1 – 1.5
7.	Mortar, cement Concrete	Ratio of ingredient (Cement Content of Hardened Portland Cement Concrete)	Cl. 9 of IS:1199:1959, RA 2013	Qualitative
8.	Stone Aggregate	Alkali aggregate reactivity	Cl. 3.0 of IS:2386(Part-7): 1963 RA 2016	Qualitative
X.	ATMOSPHERIC POLLUTION			
1.	Ambient Air	Suspended particulate matter	IS:5182(P-04):1999,RA 2014	5 to 1000 µg/m <sup>3</sup>
		Oxides of nitrogen (as NO <sub>2</sub> )	IS:5182(P-06):2006,RA 2012	6 to 750 µg/m <sup>3</sup>
		Sulphur dioxides (as SO <sub>2</sub> )	IS:5182(P-02):2001,RA 2012	5 to 1050 µg/m <sup>3</sup>
		Particulate matter (PM 10)	IS:5182(P-23):2006,RA 2012	10 to 1000 µg/m <sup>3</sup>
		Particulate matter (PM 2.5)	LAB SOP(ATHB/ENV/01) Issue No. -01 Issue Date: 11/10/2016	10 to 500 µg/m <sup>3</sup>

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		Ozone	IS:5182(P-09):1974,RA 2014	10 to 600 µg/m³
		Ammonia as NH <sub>3</sub>	LAB SOP(ATHB/ENV/02) Issue No. -01 Issue Date: 11/10/2016	5 to 1000 µg/m³
		Benzene	IS:5182(P-11):1974,RA 2014 ATHB/ENV./03	3.0 to 100 µg/m³
		Benzo(a) pyrene	USEPA-TO-13 A , IS:5182(P-12):1974,RA 2014 ATHB/ENV./03	0.5 to 50 ng/m³
		Lead	IS:5182(P-22):1974,RA 2014	0.002 to 5 µg/m³
		Nickel	LAB SOP(ATHB/ENV/04) Issue No. -01 Issue Date: 11/10/2016	2.0 to 50 ng/ m³
		Arsenic	LAB SOP(ATHB/ENV/04) Issue No. -01 Issue Date: 11/10/2016	2.0 to 10 ng/ m³
		Carbon Monoxide	IS:5182(P-10):1999,RA 2014	1 to 200 µg/m³
		Toluene	IS:5182(P-11):2006,RA 2014	3 to 100 µg/m³
		Xylene	IS:5182(P-11):2006,RA 2014	3 to 100 µg/m³
2.	Stack Emission	Particulate matter	IS:11255(P-01)1985,RA-2014	5 to 1000 mg/Nm³
		Sulphur dioxides (as SO <sub>2</sub> )	IS:11255(P-02)1985,RA-2014	2 to 5000 mg/Nm³
		Nitrogen dioxide (as NO <sub>x</sub> )	IS:11255(P-07)2005,RA-2012	10 to 1000mg/Nm³
		Oxygen (as O <sub>2</sub> )	IS:13270-1992,RA-2014 or by orsat apparatus/GC	1 to 21%
		Carbon monoxide (as CO)	IS:13270-1992,RA-2014 or by orsat apparatus/GC	0.2 to 2%

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		Carbon dioxide (as CO <sub>2</sub> )	IS:13270-1992,RA-2014 or by orsat apparatus/GC	0.2 to 20%
3.	Ambient Noise	Site testing Ambient noise level	IS:9989:1981,RA-2001	30 to 130dB(A)
4.	Source Noise Level	Noise level at source	IS:4758:1968, RA-2017	30 to 130dB(A)
XI.	POLLUTION & ENVIRONMENT			
1.	Waste Water (Effluent/ Sewage)	Colour	IS:3025(P-04)1983, RA-2012	1 to 500 Hazen
		Total suspended solids	APHA 22 <sup>nd</sup> ed 2012 method 2540D	5 to 20000 mg/l
		pH	IS:3025(P-11)1983, RA-2012	1.0 to 14.0
		Temperature	IS:3025(P-09)1984, RA-2006	5°C to 60°C
		Oil & Grease	IS:3025(P-39)1993, RA-2014	5 to 100mg/l
		Ammonia(as NH <sub>3</sub> -N)	IS:3025(P-34)1988, RA-2014	5 to 50mg/l
		Total Kjeldahl nitrogen (as NH <sub>3</sub> )	APHA 22 <sup>nd</sup> ed 2012 method 4500-norg B(macro Kjeldahl method) APHA 22 <sup>nd</sup> ed 2012 method-4500-NH <sub>3</sub> C (Titrimetric method)	5 to 100mg/l
		Biochemical oxygen demand(3 days at 27°C)	IS:3025(P-44)1993, RA-2014	2 to 10000 mg/l
		Chemical oxygen demand	APHA 22 <sup>nd</sup> ed 2012 method-5220B(open reflux method)	5 to 20000 mg/l
		Cyanide(as CN)	IS:3025(P-27)1986, RA-2014 APHA 22 <sup>nd</sup> ed 2012 4500 E	0.01 to 1.0 mg/l

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		Fluoride(as F)	IS:3025(P-60)2008, RA-2013, APHA method-4500D	0.1 to 5.0mg/l
		Phosphorus(as P)	IS:3025(P-31 )1988, RA-2014(stannous chloride Method)	1 to 20mg/l
		Sulphide(as H <sub>2</sub> S)	IS:3025(P-29)1986, RA-2014	0.05 to 1.0 mg/l
		Phenolic compound (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025(P-43)1992, RA-2014	0.001 to 1.0 mg/l
		Total Iron	IS:3025(P-53)2003, RA-2014 IS:3025(P-2)2004, RA 2014	0.05 to 5.0 mg/l
<b>XII.</b>	<b>WATER</b>			
<b>1.</b>	<b>Drinking Water, Surface Water, Ground Water</b>	pH	IS:3025(P-11)1983, RA-2012	4.0 – 10.0
		Colour	IS:3025(P-04)1983, RA-2012	1 to 25 Hazen
		Turbidity	IS:3025(P-10)1984, RA-2012	1 to 40 NTU
		Total dissolved solid	IS:3025(P-16)1984, RA-2012	5 to 2000 mg/l
		Chloride(as Cl)	IS:3025(P-32)1988, RA-2014	2 to 5000mg/l
		Chloramines(as Cl <sub>2</sub> )	IS:3025(P-26)1986, RA-2014	0.2 to 5.0mg/l
		Calcium(as Ca)	IS:3025(P-40)1991, RA-2014	2 to 1500mg/l
		Aluminium(as Al)	IS:3025(P-55)2003, RA-2014	0.01 to 5mg/l
		Anionic detergents (as MBAS)	Annex-K of IS:13428-2005, RA-2014	0.1 to 1.0mg/l

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		Ammonia(as N)	IS:3025(P-34)1988, RA-2014	0.1 to 50mg/l
		Fluoride(as F)	IS:3025(P-60)2008, RA-2013,APHA 22nd 2012 method-4500D	0.1 to 5.0mg/l
		Phenolic compound (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025(P-43)1992, RA-2014	0.001 to 1.0 mg/l
		Iron(as Fe)	IS:3025(P-53)2003, RA-2014 IS:3025(P-2)2004, RA-2014	0.05 to 5.0 mg/l
		Free residual chlorine	IS:3025(P-26)1986, RA-2014	0.1 to 5mg/l
		Nitrate(as NO <sub>3</sub> )	IS:3025(P-34)1988, RA-2014	0.1 to 5.0mg/l
		Magnesium(as Mg)	IS:3025(P-46)1994, RA-2014 APHA 22 <sup>nd</sup> ed 2012 3500-Mg (B)	1 to 1500mg/l
		Sulphate (as SO <sub>4</sub> )	IS:3025(P-24)1986, RA-2014	1 to 1000 mg/l
		Total alkalinity (as CaCO <sub>3</sub> )	IS:3025(P-23)1991, RA-2014	1.0 to 500 mg/l
		Total Hardness (as CaCO <sub>3</sub> )	IS:3025(P-21)2009, RA-2014	10 to 1000 mg/l
		Sulphide(as H <sub>2</sub> S)	IS:3025(P-29)1986, RA-2014	0.05 to 1.0 mg/l
		Cyanide(as CN)	IS:3025(P-27)1986, RA-2014 APHA 22 <sup>nd</sup> ed 2012 4500 E	0.01 to 1.0 mg/l
		Mineral oil	IS:3025(P-39)1991, RA-2014 (FTIR)	0.001 to 50 mg/l
		Acidity(as CaCO <sub>3</sub> )	IS:3025(P-22)1986, RA-2014	1 to 500 mg/l

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<b>2.</b>	<b>THM (Trihalomethane)</b>			
<b>a.</b>	<b>Packaged Drinking Water , Mineral Water, Pond Water, River Water, Borewell Water, Food Processing Water, Dialysis Water</b>	Bromoform	APHA 23rd Edition 2017 - 6232	0.04 to 1.0 mg/L
		Dibromochloromethane	APHA 23rd Edition 2017 - 6232	0.04 to 1.0 mg/L
		Bromodichloromethane	APHA 23rd Edition 2017 - 6232	0.04 to 1.0 mg/L
		Chloroform	APHA 23rd Edition 2017 - 6232	0.04 to 1.0 mg/L
<b>b.</b>	<b>Waste Water (Effluent/ Sewage), Swimming Pool Water</b>	Bromoform	APHA 23rd Edition 2017 - 6232	0.04 to 1.0 mg/L
		Dibromochloromethane	APHA 23rd Edition 2017 - 6232	0.04 to 1.0 mg/L
		Bromodichloromethane	APHA 23rd Edition 2017 - 6232	0.04 to 1.0 mg/L
		Chloroform	APHA 23rd Edition 2017 - 6232	0.04 to 1.0 mg/L
<b>3.</b>	<b>Trace Metal Elements in water</b>			
<b>a.</b>	<b>Drinking Water, Ground /Surface Water, Processed Food Water, Swimming Pool Water</b>	Barium(as Ba)	IS:3025(P-2)2004, RA-2014	20 to 10000 µg/L
		Borates(as B)	IS:3025(P-2)2004, RA-2014	20 to 10000 µg/L
		Copper(as Cu)	IS:3025(P-2)2004, RA-2014	20 to 10000 µg/L
		Selenium(as Se)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Silver(as Ag)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Zinc(as Zn)	IS:3025(P-2)2004, RA-2014	20 to 5000 µg/L
		Cadmium(as Cd)	IS:3025(P-2)2004, RA-2014	2 to 500 µg/L
		Lead(as Pb)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L

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		Mercury(as Hg)	IS:3025(P-2)2004, RA-2014	0.8 to 20 µg/L
		Manganese(as Mn)	IS:3025(P-2)2004, RA-2014	20 to 500 µg/L
		Nickel(as Ni)	IS:3025(P-2)2004, RA-2014	10 to 500 µg/L
		Arsenic(as As)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Total chromium (as Cr)	IS:3025(P-2)2004, RA-2014	20 to 500 µg/L
		Antimony(as Sb)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
4.	Packaged Drinking Water, Mineral Water	Barium(as Ba)	IS:3025(P-2)2004, RA-2014	20 to 10000 µg/L
		Borates (as B)	IS:3025(P-2)2004, RA-2014	20 to 10000 µg/L
		Copper(as Cu)	IS:3025(P-2)2004, RA-2014	20 to 1000 µg/L
		Selenium(as Se)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Silver(as Ag)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Zinc(as Zn)	IS:3025(P-2)2004, RA-2014	20 to 10000 µg/L
		Cadmium(as Cd)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Lead(as Pb)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Mercury(as Hg)	IS:3025(P-2)2004, RA-2014	0.8 to 20 µg/L
		Manganese(as Mn)	IS:3025(P-2)2004, RA-2014	20 to 500 µg/L
		Nickel(as Ni)	IS:3025(P-2)2004, RA-2014	10 to 500 µg/L

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		Arsenic(as As)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Total chromium (as Cr)	IS:3025(P-2)2004, RA-2014	20 to 500 µg/L
		Antimony(as Sb)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
5.	Waste Water (Effluent/ Sewage Water)	Barium(as Ba)	IS:3025(P-2)2004, RA-2014	20 to 1000 µg/L
		Borates (as B)	IS:3025(P-2)2004, RA-2014	20 to 1000 µg/L
		Copper(as Cu)	IS:3025(P-2)2004, RA-2014	20 to 10000 µg/L
		Selenium(as Se)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Silver(as Ag)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Zinc(as Zn)	IS:3025(P-2)2004, RA-2014	20 to 500 µg/L
		Cadmium(as Cd)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Lead(as Pb)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Mercury(as Hg)	IS:3025(P-2)2004, RA-2014	0.8 to 20 µg/L
		Manganese(as Mn)	IS:3025(P-2)2004, RA-2014	20 to 500 µg/L
		Nickel(as Ni)	IS:3025(P-2)2004, RA-2014	10 to 500 µg/L
		Arsenic(as As)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L
		Total chromium (as Cr)	IS:3025(P-2)2004, RA-2014	20 to 500 µg/L
		Antimony(as Sb)	IS:3025(P-2)2004, RA-2014	4 to 500 µg/L

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<b>6.</b>	<b>Polycyclic Aromatic Hydrocarbons</b>			
<b>a.</b>	<b>Drinking Water, Ground /Surface Water, Processed Food Water, Swimming Pool Water, Packaged Drinking Water, Mineral Water, Waste Water (Effluent/ Sewage Water)</b>	Naphthalene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Acenaphthylene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		2-Bromonaphthalene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Acenaphthene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Fluorene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Phenanthrene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Anthracene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Fluoranthene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Pyrene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Benzo(a) anthracene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Chrysene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Benzo(a)fluoranthene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Benzo(a)Pyrene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
		Indeno (1,2,3-cd) pyrene	APHA 23 <sup>rd</sup> Ed. 2017 -6440	0.000045 to 0.1 mg/l
<b>7.</b>	<b>Poly Chlorinated Biphenyl</b>			
<b>a.</b>	<b>Drinking Water, Ground /Surface Water, Processed Food Water, Swimming Pool Water, Packaged Drinking Water, Mineral Water, Waste Water (Effluent/ Sewage Water)</b>	2- Chlorobiphenyl	APHA 23 <sup>rd</sup> Ed 2017.-6630	0.000010 to 0.1 mg/l
		2,3- Dichlorobiphenyl	APHA 23 <sup>rd</sup> Ed 2017.-6630	0.000010 to 0.1 mg/l
		2,4,5-Trichlorobiphenyl	APHA 23 <sup>rd</sup> Ed 2017.-6630	0.000010 to 0.1 mg/l
		2,2,4,4 Tetrachlorobiphenyl	APHA 23 <sup>rd</sup> Ed 2017.-6630	0.000010 to 0.1 mg/l
		2,2,3,4,6- Pentachlorobiphenyl	APHA 23 <sup>rd</sup> Ed 2017.-6630	0.000010 to 0.1 mg/l
		2,2,4,4,5,6- Hexachlorobiphenyl	APHA 23 <sup>rd</sup> Ed 2017.-6630	0.000010 to 0.1 mg/l
		2,2,3,3,4,4,6- Heptachlorobiphenyl	APHA 23 <sup>rd</sup> Ed 2017.-6630	0.000010 to 0.1 mg/l
		2,2,3,3,4,4,5,6- Octachlorobiphenyl	APHA 23 <sup>rd</sup> Ed 2017.-6630	0.000010 to 0.1 mg/l
<b>XIII.</b>	<b>HAZARDOUS &amp; RESTRICTED CHEMICALS</b>			
<b>1.</b>	<b>Toys and Sports Equipments</b>			
<b>a.</b>	<b>Migration of Certain Elements</b>	Antimony (Sb)	IS 9873 Part 3:2017	2-600mg/kg
		Arsenic (As)		1-200mg/kg

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		Barium (Ba)		2-10000mg/kg
		Cadmium(Cd)		2-700mg/kg
		Chromium(Cr)		1-600mg/kg
		Lead(Pb)		2-900mg/kg
		Mercury(Hg)		1-600mg/kg
		Selenium(Se)		2-5000mg/kg
b.	Total Concentration of Certain Elements	Antimony (Sb)	IS 9873 Part 5:2017	2-600mg/kg
		Arsenic (As)		1-200mg/kg
		Barium (Ba)		2-10000mg/kg
		Cadmium(Cd)		2-700mg/kg
		Chromium(Cr)		1-600mg/kg
		Lead(Pb)		2-900mg/kg
		Mercury(Hg)		1-600mg/kg
		Selenium(Se)		2-5000mg/kg
c.	Finger Paints Detection of Certain Azo Colourants and Determination of Free Primary Aromatic Amines (Colourants)	Benzidine(92-87-5)	IS 9873 (Part 7): 2017	0.5-2000mg/kg
		2-Naphthylamine (91-59-8)		0.5-2000mg/kg
		4-Chloro-2-methylaniline (4-Chloro-o-toluidine) (95-69-2)		0.5-2000mg/kg
		4-Aminobiphenyl (92-67-1)		0.2-2000mg/kg
		o-Aminoazotoluene (4-o-Tolyazo-o-toluidine) (97-56-3)		0.5-2000mg/kg
		2-Amino-4-nitrotoluene (5-Nitro-o-toluidine)(99-55-8)		0.5-2000mg/kg
		2,4-Diaminoanisole (615-05-4)		0.5-2000mg/kg
		4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline) (101-77-9)		0.5-2000mg/kg

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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
		3,3'-Dimethoxybenzidine (119-90-4)		1.0-2000mg/kg
		3,3'-Dimethylbenzidine (119-93-7)		1.0-2000mg/kg
		3,3'-Dimethyl-4,4'-diaminodiphenylmethane (4,4'-Methylenedi-o-toluidine)(838-88-0)		1.0-2000mg/kg
		p-Cresidine (6-Methoxy-m-toluidine)(120-71-8)		0.5-2000mg/kg
		2,2' - Dichloro - 4,4' - methylenedianiline (4,4'-Methylene-bis-2-chloroaniline)(101-14-4)		1.0-2000mg/kg
		4,4'-Oxydianiline(101-80-4)		1.0-2000mg/kg
		4,4'-Thiodianiline(139-65-1)		1.0-2000mg/kg
		o-Toluidine(95-53-4)		0.5-2000mg/kg
		2-Methoxyaniline (o-Anisidine)(90-04-0)		0.5-2000mg/kg
		4-Aminoazobenzene (60-09-3)		0.5-2000mg/kg
		4-Methyl-m-phenylenediamine (Toluene-2,4-diamine) (95-80-7)		0.5-2000mg/kg
		2,4,5-Trimethylaniline (137-17-7)		0.5-2000mg/kg
d.	Preservatives	Benzoic Acid	IS 9873 Part 7:2017, 95/32/EC 7 July 1995	0.2 -10% w/w
		Sodium Benzoate		0.2 -10 % w/w
		Ammonium Benzoate		0.2 -10% w/w
		Potassium Benzoate		0.2 -10% w/w
e.	Hexachlorobenzene, Polychlorinated	Hexachlorobenzene (HCB)	IS 9873 Part 7:2017	1.0-1000mg/kg

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	<b>Biphenyl and Benzo[α] pyrene (Limit of Impurities)</b>	PCB congener 28 (2,4,4'-Trichlorobiphenyl)		0.1-500mg/kg
		PCB congener 52 (2,2',5,5'-Tetrachlorobiphenyl)		0.1-500mg/kg
		PCB congener 101 (2,2',4,5,5'-Pentachlorobiphenyl)		0.1-500mg/kg
		PCB congener 118 (2,3',4,4',5-Pentachlorobiphenyl)		0.1-500mg/kg
		PCB congener 138 (2,2',3,4,4',5'-Hexachlorobiphenyl)		0.1-500mg/kg
		PCB congener 153 (2,2',4,4',5,5'-Hexachlorobiphenyl)		0.1-500mg/kg
		PCB congener 180 (2,2',3,4,4',5,5'-Heptachlorobiphenyl)		0.1-500mg/kg
		PCB congener 209 (Decachlorobiphenyl)		0.1-500mg/kg
		Benzo[α]pyrene (B[α]P)		0.01-500mg/kg
		pH	EN ISO 787-9:1995	1-14
f.	<b>Paints- Container of Finger paints</b>	Taste & Smell	IS 9873-7: 2017 ISO 8124-7: 2015 (Clause 4.10 & A.10)	Qualitative
g.	<b>Phthalates: Determination of Certain Phthalates Esters in Toys and Children's Products</b>	Bis (2-ethyl hexyl) phthalate (DEHP)	IS 9873 Part 6:2017 IS 9873 Part 9:2017	1 to 10000mg/kg
		Dibutyl phthalate(DBP)		1 to 10000mg/kg
		Benzyl butyl phthalate(BBP)		1 to 10000mg/kg
		Di-n-octyl phthalate(DNOP)		1 to 10000mg/kg

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## MECHANICAL TESTING

I.	BUILDING MATERIALS			
1.	Coarse Aggregate	Sieve Analysis	IS 2386 (Part 1): 1963 (RA 2016)	4.75mm to 80 mm / 0 to 100 %
		Elongation Index	IS 2386 (Part 1): 1963 (RA 2016)	1 % to 50 %
		Flakiness Index	IS 2386 (Part 1): 1963 (RA 2016)	1 % to 50 %
		Material Finer than 75 micron	IS 2386 (Part 1): 1963 (RA 2016)	0.1 % to 15 %
		Bulk Density	IS 2386 (Part 3): 1963 (RA 2016)	1 kg/l to 3 kg/l
		Specific Gravity	IS 2386 (Part 3): 1963 (RA 2016)	2.3 to 3.5
		Water Absorption	IS 2386 (Part 3): 1963 (RA 2016)	0 % to 5 %
		Crushing Value	IS 2386 (Part 4): 1963 (RA 2016)	5 % to 30 %
		Impact Value	IS 2386 (Part 4): 1963 (RA 2016 )	5 % to 30 %
		10% Fine Value	IS 2386 (Part 1): 1963 (RA 2016)	5 kN to 300 kN
		Aggregate Abrasion value	IS 2386 (Part 4): 1963 (RA 2016)	5 % to 30 %
		Organic Impurities	IS 2386 (Part 2): 1963 (RA 2016)	Qualitative
2.	Fine Aggregate	Sieve Analysis	IS 2386 (Part 1): 1963 (RA 2016)	150 μ to 10 mm / 0 to 100 %
		Material Finer than 75 micron	IS 2386 (Part 1): 1963 (RA 2016)	0.0 % to 15 %
		Bulk Density	IS 2386 (Part 3): 1963 (RA 2016)	1 kg/l to 3 kg/l

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		Specific Gravity	IS 2386 (Part 3): 1963 (RA 2016)	2.3 to 3.5
		Water Absorption	IS 2386 (Part 3): 1963 (RA 2016)	0.1 % to 5 %
		Organic Impurities	IS 2386 (Part 2): 1963 (RA 2016)	Qualitative
3.	<b>Hydraulic Cement (Ordinary Portland Cement/ Portland Cement/ Pozzolana Cement/ Portland Slag Cement)</b>	Consistency	IS 4031 (Part 4): 1988 (RA 2014)	10 % to 35 %
		Setting Time (Initial)	IS 4031 (Part 5): 1988 (RA 2014)	10 min to 300 min
		Setting Time (Final)	IS 4031 (Part 5): 1988 (RA 2014)	10 min to 600 min
		Soundness Auto Clave expansion method	IS 4031 (Part 3): 1988 (RA 2014)	0.02 % to 4 %
		Soundness Le-Chatlier Method	IS 4031 (Part 3): 1988 (RA 2014)	0.0 mm to 5 mm
		Compressive Strength	IS 4031 (Part 6): 1988 (RA 2014)	10 N/mm <sup>2</sup> to 80 N/mm <sup>2</sup>
		Fineness (Blain Air)	IS 4031 (Part 2): 1999 (RA 2013)	100 m <sup>2</sup> /kg to 700 m <sup>2</sup> /kg
		Fineness by dry sieving	IS 4031 (Part 1): 1996 (RA 2016)	1.0 % to 10 %
		Drying Shrinkage	IS 4031 (Part 10): 1988 (RA 2014)	0.01 % to 0.5%
		Density	IS 4031 (Part 11): 1988 (RA 2014)	1.8 g/cc to 3.8 g/cc
4.	<b>Bricks (Burnt Clay Bricks/Fly Ash Bricks)</b>	<b>Dimensions</b>		
		Length	IS 1077: 1992 (RA 2016)	4000 mm to 5000 mm
		Width	IS 12894-2002 RA 2017	2000 mm to 2500mm
		Height		1300 mm to 1500mm
		Water Absorption	IS 3495 (Part 2): 1992 (RA 2016)	0.1 % to 30 %
		Efflorescence	IS 3495 (Part 3): 1992 (RA 2016)	Qualitative

**Jitendra B. Vispute**  
Program Manager

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		Compressive Strength	IS 3495 (Part 1): 1992 (RA 2016)	1 N/mm <sup>2</sup> to 20 N/mm <sup>2</sup>
5.	Fly Ash	Fineness (Blain Air)	IS 1727: 1967 (RA 2013)	100 m <sup>2</sup> / kg to 500 m <sup>2</sup> / kg
		Particle Retained on 45 µ sieve	IS 1727: 1967 (RA 2013)	0 % to 80 %
6.	Concrete Cube	Compressive Strength	IS 516: 1959 (RA 2013)	10 N/mm <sup>2</sup> to 75 N/mm <sup>2</sup>
8.	Paver Block	Water absorption	Annex C, Cl -6.2.4 of IS 15658:2006 (RA 2017)	0-20 %
		Compressive Strength	Annex D, Cl. 6.2.5 of IS 15658:2006 (RA 2017)	10-65 N/mm <sup>2</sup>
9.	Concrete Chequered Tile	Water absorption	IS 13801:2013	0-20%
		Wet Transverse Strength	IS 13801:2013	1-10 N/mm <sup>2</sup>
10.	Concrete Flooring Tile	Water absorption	Annex E, Cl.- 12.5 of IS 1237: 2012 (RA 2017)	0-20%
		Wet Transverse Strength	Annex F, Cl.- 12.6 of IS 13801:2013	1-10 N/mm <sup>2</sup>
11.	Ceramic Tile (Wall Tile/ Floor Tile/Vitrified Tile)	Water absorption	IS 13630(P-2) :2006 (RA 2016)	0-20%
		Modules of rupture	IS 13630(P-6): 2006 (RA 2016)	1-20 N/mm <sup>2</sup>
		Scratch Hardness of Surface ( mohs)	IS 13630(P-13): 2006 (RA 2016)	1-10 no
13.	Bentonite	Fineness by dry sieving	IS 6186:1986 (RA 2010)	70 to 100 %
		Moisture	IS 6186:1997 (RA 2003)	0.1 % to 10 %
		Sand Content	IS 6186:1997 (RA 2003)	0.1 % to 20 %
14.	Bitumen	Specific Gravity	IS 1202:1978 (RA 1998)	1 gm/cc to 1.3 gm/cc
		Penetration	IS 1203:1978 (RA 1998)	5 mm to 200 mm
		Softening Point	IS 1205:1978 (RA 1998)	40 °C to 65 °C

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<b>II.</b>	<b>SOIL &amp; ROCK</b>			
<b>1.</b>	<b>Soil</b>	Grain Size Analysis	IS 2720 (Part 4): 1985 (RA 2015)	0.075 mm to 4.75 mm 0.01 - 100%
		Sp. Gravity	IS 2720 (Part 3 /Sec I and II): 1980 (RA 2011)	1.5 to 3.0
		Liquid Limit	IS 2720 (Part 5): 1985 (RA 2015)	15 % to 80 %
		Plastic Limit	IS 2720 (Part 5): 1985 (RA 2015)	7 % to 35 %
		Light Compaction Test	IS 2720 (Part 7): 1980 (RA 2011)	MDD-1 g/cc to 2.5 g/cc OMC- 1 % to 40%
		Heavy Compaction Test	IS 2720 (Part 8): 1983 (RA 2015)	MDD-1 g/cc to 2.5 g/cc OMC- 1 % to 40%
		CBR Test	IS 2720 (Part 16): 2001 (RA 2011)	1 % to 50%
		Free Swell Index	IS 2720 (Part 40): 1977 (RA 2011)	0.1 % to 100 %
<b>III.</b>	<b>TOYS &amp; SIMILAR PRODUCTS</b>			
<b>1.</b>	<b>Toys with Small Parts</b>	Small part test Drop test Torque test Tension test Compression test Flexure Test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.4 & 4.5 Clause 5.2 Clause 5.24.2 Clause 5.24.3 Clause 5.24.5 Clause 5.24.6 Clause 5.24.7 Clause 5.24.8	Qualitative
<b>2.</b>	<b>Toys with Edges</b>	Sharp Edge test Torque test Tension Test Compression Test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.6, Clause 5.8 Clause 5.24.5	Qualitative

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			Clause 5.24.6 Clause 5.24.7	
3.	Toys with Point	Sharp Point test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.7 Clause 5.9	Qualitative
4.	Toys with Projections	Normal use test Flexure Test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.8 Clause 5.24.3 Clause 5.24.5 Clause 5.24.6 Clause 5.24.7 Clause 5.24.8	Qualitative
5.	Toys with Metal Wire and Rod	Flexure test Tension test Sharp Edge test Sharp point test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.9 Clause 5.24.8. Clause 5.24.6.4 Clause 5.8 Clause 5.9	Qualitative
6.	Toys with Flexible Plastic Sheeting	Thickness	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.10, Clause 5.10	0.001 mm to 1 mm Qualitative
7.	Toys with Glass & Marbles	Drop Test Torque Test Tension Test Compression Test Flexure test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause- 4.5.7 Clause 5.24.2 Clause 5.24.5 Clause 5.24.6 Clause 5.24.7 Clause 5.24.8	Qualitative
8.	Toys with Expanding Materials	Expanding materials Drop Test Torque Test Tension Test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.3.2 Clause 5.21	Qualitative

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		Compression Test Small part	Clause 5.24.2 Clause 5.24.5 Clause 5.24.6 Clause 5.24.7 Clause 5.2	
9.	<b>Folding Mechanisms and Springs</b>	Toy pushchairs and perambulators Folding mechanism test Other toy with folding mechanisms Folding & sliding Mechanism Accessibility part of component Spring	IS 9873 (Part 1): 2017 ISO 8124-1:2014  Clause 5.22.2 Clause 5.22.3 Clause 5.7  Clause 4.12 Clause 4.14	Qualitative
10.	<b>Mouth Actuated and other toys intended to be put in the mouth</b>	Small part test Abuse Test Durability of mouth actuated toy	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.26 Clause 5.2 Clause 5.24, 5.20	Qualitative
11.	<b>Toys – Balloons</b>	Balloons Thickness Small Part test Tension test Torque test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.5.6 Clause 4.10 Clause 5.10 Clause 4.26 (d)	0.001mm to 1 mm  Qualitative
12.	<b>Toys - Enclosures/ Confined Spaces/ Toy Bag</b>	Load Chest lid durability	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 5.13.2 Clause 4.16	Qualitative
13.	<b>Heavy Immobile Toys / Stability of stationary floor toy/Toys intended to bear the mass of child</b>	Stability & over load test Stability test of stationary floor toys Folding or sliding mechanism	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.15 Clause 5.12/ 5.12.6	Qualitative

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14.	<b>Projectile Toys</b>	Tension Test Small ball & suction cup Torque Test Kinetic Energy Test Normal use Test Abuse Test Impact Test Compression Test length of suction cup	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 5.15 Clause 5.24.5 Clause 5.2 Clause 5.24.6 Clause 5.24 Clause 5.37 Clause 4.18	Qualitative  (0.01 to 10) Joules
15.	<b>Aquatic Toys and Inflatable Toys</b>	Torque Test Tension Test Small Part test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 5.2 Clause 4.20	Qualitative
16.	<b>Toys – Acoustics</b>	Emission Sound pressure Level Test Normal use Test Abuse Test Impact Test Torque Test Tension Test Compression Test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 5.25 Clause 4.29	45 dB to 130 dB
17.	<b>Toys – Length of Cords, Chains and Electrical Cable in Toys / Straps intended to be worn fully or partially around the neck / Cords, Straps and Elastics / Cords</b>	Thickness Length of cords, chains and electrical cables Self-retracting pull cords	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.11 Clause 5.11.1 Clause 5.11.2	0.2mm to 5mm  Qualitative
18.	<b>Liquid Filled Toys</b>	Leakage test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.25 Clause 5.19	Qualitative

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19.	Hemispheric-Shaped Toys	Abuse Test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.5.8 Clause 5.24	Qualitative
20.	Toys with Holes, Clearance and Accessibility of Mechanisms	Accessibility Test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 5.7 Clause 4.13.1, 4.13.2, 4.13.4, 4.13.5	Qualitative
21.	Toys with Simulated Protective Devices	Impact Test for face	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.17 Clause 5.14	Qualitative
22.	Toys with Pacifiers	Test for pacifiers	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.5.5	Qualitative
23.	Squeeze toys, Rattles and certain other toys / Certain toys with spherical ends	Template test Shape & size	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.5.1 Clause 5.3 Clause 4.5.4, 5.6	Qualitative
24.	Toys – Balls	Template test Small ball & suction cup test Torque Test Tension Test Drop test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.5.2 Clause 5.4 Clause 5.24.2 Clause 5.24.5 Clause 5.24.6	Qualitative
25.	Toys – Pompoms	Tension Test Template test	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.5.3 Clause 5.24.6 Clause 5.5	Qualitative
26.	Toys	Flammability – Burning rate Test relating to	IS 9873 (Part-2):2017 ISO 8124-2:2014	Qualitative

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		beards, moustaches, wigs, etc. Test relating to beards, moustaches, wigs, etc. Test relating to toys to be worn on head Test for soft filled toys Thermal & Flammability Hazard	Clause 5.2 Clause 5.3 Clause 5.4 Clause 5.5	
27.	<b>Toys Stability &amp; Over Load Requirements</b>	Dynamic Strength test For Wheeled ride on toys	IS:9873(P-1):2017 ISO 8124-2:2014 Clause 4.15 5.24.4, 5.27	Qualitative
28.	<b>Toys – Scooter</b>	Sharp Edge Test Sharp Point test Stability & Over load Test Static strength for toy scooter Break Performance for toys scooter Strength of toy scooter tube	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.30 Clause 5.8 Clause 5.9 Clause 5.12.2 Clause 5.26 Clause 5.28, Clause 5.29	Qualitative
29.	<b>Toys with Magnet</b>	Magnets and magnetic components, Tension test for magnets, Magnetic flux index Impact test for magnets Soaking test for magnets	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 4.31, Clause 5.31, Clause 5.32, Clause 5.33 Clause 5.34	0.6kg <sup>2</sup> mm <sup>2</sup> to 7000kg <sup>2</sup> mm <sup>2</sup>  Qualitative
30.	<b>Toys cover the Face</b>	Simulated protective equipment, such as helmets, hats and goggles Impact test for toys that cover the face Impact test for toys that cover the face	IS 9873 (Part 1): 2017 ISO 8124-1:2014  Clause 4.17  Clause 5.14	Qualitative

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31.	Washable Toys	Washable toys	IS 9873 (Part 1): 2017 ISO 8124-1:2014 Clause 5.23	10 g to 500 g Qualitative
32.	Safety of Toys-Swings, Slides & Similar activity toys for Indoor & Outdoor Family Domestic Use – Swings, Slides, Barriers, Rung ladders, stepladders, Stairways cross beam, Entrapment, Toddler Swings, Seesaws, Carousels and Rocking Toys, Inflatable Activity Toys, Paddling Pools	Maximum height	Cl. 4.1, IS:9873(P-4):2017 ISO:8124(P-4): 2014	Upto 3000mm
		Stability	IS:9873(P-4):2017 ISO:8124(P-4): 2014Cl. 6.1.1, Cl. 6.1.2, Cl. 6.1.3, Cl. 6.1.4, Cl. 6.1.5	Qualitative
		Static Strength	Cl. 6.2, IS:9873(P-4):2017 ISO:8124(P-4): 2014	Qualitative
		Dynamic Strength of barriers and handrails	Cl. 6.3, IS:9873(P-4):2017 ISO:8124(P-4): 2014	Qualitative
		Test for head and neck entrapment	Cl. 6.5, IS:9873(P-4):2017 ISO:8124(P-4): 2014	Qualitative
		Toggle Test	Cl. 6.6, IS:9873(P-4):2017 ISO:8124(P-4): 2014	Qualitative
		Test for protrusions	Cl. 6.7, IS:9873(P-4):2017 ISO:8124(P-4): 2014	Qualitative
		Durability test for suspension connectors and means of suspensions	Cl. 6.8, IS: 9873(P-4):2017 ISO:8124(P-4): 2014	Qualitative
		Deflation of inflatable activity Toys	Cl. 6.9, IS:9873(P-4):2017 ISO:8124(P-4): 2014	Qualitative
		Static Load Test for paddling pools with non-inflatable walls	Cl. 6.10, IS:9873(P-4):2017 ISO:8124(P-4): 2014	Qualitative
IV.	<b>MECHANICAL PROPERTIES OF METALS</b>			
1.	Steel/ Reinforcement/ Structural Steel	Tensile Strength	IS 1608: 2005 (RA 2017) Cl-4.9.1	100 N/mm <sup>2</sup> to 800 N/mm <sup>2</sup>
		Yield Strength	IS 1608: 2005 (RA 2017) Cl -4.9.2.1	50 N/mm <sup>2</sup> to 600 N/mm <sup>2</sup>

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		Percentage Elongation after fracture	IS 1608: 2005 (RA 2017) Cl -4.4.2	5 % to 30 %
		Bend Test	IS 1599: 2012 (RA 2017) Cl- 4.2	Qualitative 8 mm to 40 mm (Mandrel Dia.(mm) 16, 20, 24, 30, 32, 36, 40, 48, 50, 60, 64, 75, 80, 84, 96, 100, 108, 112, 120, 125, 128, 140, 144, 150, 160, 168, 180, 192, 200, 216, 240)
		Rebend Test	IS 1786: 2008 (RA 2013) Cl -9.4	Qualitative 8 mm to 40 mm Mandrel Dia.(mm) 32, 40, 48, 50, 56, 60, 70, 72, 84, 96, 112, 120, 28, 140, 150, 160, 168, 175, 192, 196, 200, 216, 224, 240, 252, 256, 280, 288, 320
2.	Steel Tubes (G.I. Pipe)	Tensile strength	IS:1608-2005 Cl. 4.9.1	50 to 600 N/mm <sup>2</sup>
		Percentage of Elongation after fracture	IS:1608-2005 Cl. 4.4.2	5% to 30%
		Bend Test	IS:2329-2005	Qualitative
3.	M.S Conduit Pipe	Outside diameter	IS:9537(P-2)-1981 Cl. 7.2	10 to 32mm (Mandrel Dia.of gauges (in mm) 16,20,25,32,40,50,63 for checking minimum &maximum outside diameter
		Wall Thickness	IS:9537(P-2)-1981/Cl. 7.3	0.01to 25mm
		Compression Test	IS:9537(P-2)-1981 Cl. 9.3	200 to 5000 N
		Bend Test	IS:9537(P-2)-1981 Cl. 9.2	Qualitative

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Program Manager

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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>V.</b>	<b>PLASTIC &amp; POLYMERS</b>			
<b>1.</b>	<b>Unplasticized PVC pipes for potable water supplies</b>	Density/ Specific Gravity	IS:12235(P-14)-2004, RA 2014	1.1 to 1.80 gm/cc
		Longitudinal Reversion Test	IS:12235(P-5/sec-1)-2004, RA 2014	0.1 to 20%
		Vicat Softening Temperature	IS:12235(P-2)-2004, RA 2014	60 to 150°C
		Sulphated Ash	IS:4985-2000, RA-2015 Annex-B	0.1 to 50%
		Dimension a).Wall Thickness b).Outside Diameter	IS:12235(P-1)-2004, RA 2014	0.1 to 25 mm 10 to 650 mm
		Resistance to Internal Hydrostatic Pressure	IS:12235(P-8/sec-1)-2004, RA 2014	Visual
		Resistance to external Blows at 0°C	IS:12235(P-9)-2004, RA 2014	Visual
		Opacity	IS:12235(P-3)-2004, RA 2014	0.01 to 1%
<b>2.</b>	<b>High Density Polyethylene Pipes for Potable Water Supplies</b>	Density/ Specific Gravity	IS:7328-1992, RA-2013 Annex. A	0.840 to 1.000 gm/cc
		Longitudinal Reversion Test	IS:4984-2016 Annex. F	0.1 to 20%
		Melt Flow Rate/Index	IS:2530-1963, RA 2008 Cl. 7	0.1 to 5g/10 minutes
		Dimension (a) Wall Thickness (b) Outside Diameter	IS:4984-2016 Cl. 7.4	0.1 to 25 mm 16 to 1000 mm
		Internal Pressure Creep Rupture Test	IS:4984-2016 Annex. E	Visual
<b>3.</b>	<b>Chlorinated Polyvinylchloride (CPVC) pipes for potable hot and</b>	Density/ Specific Gravity	IS:12235(P-14)-2004,RA 2014	1.35 to 1.80 gm/cc
		Longitudinal Reversion Test	IS:12235(P-5/Sec-)-2004, RA 2014	0.1 to 20 %

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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>Cold Water Distribution Supplies</b>	Vicat Softening Temperature	IS:12235(P-2)-2004 RA 2014	60 to 150 °C
		Dimension (a).Wall Thickness (b).Outside Diameter	IS:12235(P-1)-2004 RA 2014	0.1 to 25 mm 10 to 250 mm
		Resistance to Internal Hydrostatic Pressure	IS:12235(P-8/Sec-1)-2004, RA 2014	Visual
		Resistance to external Blows at 0°C	IS:12235(P-9) 2004, RA 2014	Visual
		Opacity	IS:12235(P-3)-2004, RA 2014	0.01 to 1%
<b>4.</b>	<b>Polypropylene Random Copolymer Pipes for Hot and Cold Water Supplies</b>	Density/ Specific Gravity	IS:12235(P-14)-2004, RA 2014	0.800 to 0.9999 gm/cc
		Longitudinal Reversion Test	IS:12235(P-5/Sec-1)-2004 RA 2014	0.1 to 10%
		Dimension (a).Wall Thickness (b).Outside Diameter	IS:12235(P-1)-2004, RA 2014	0.1 to 25 mm 10 to 250 mm
		Hydrostatic Characteristics (Internal Creep Rupture)	IS:12235(P-8/Sec-1)-2004, RA 2014	Visual
		Melt Mass Flow Rate	IS:13360(P-4/Sec-1)-2000, RA 2013	0.1 to 5g/10 minutes