Laboratory	**The South India Textile Research Association, 13/37, Avinashi Road, Aerodrome PO, Coimbatore, Tamil Nadu**	
Accreditation Standard	**ISO/IEC 17025: 2005**	
Certificate Number	**TC-6944** ***(in lieu of T-3837, T-0358 & T-0359)***	**Page 1 of 23**
Validity	**31.01.2018 to 30.01.2020**	**Last Amended on 20.02.2018**

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

BIOLOGICAL TESTING

I.	**BIOLOGICAL TESTS ON OTHER MISCELLANEOUS TEST ITEMS**			
1.	**Medical Textile Materials-Fabric**	Bacteriostatic activity	AATCC Test Method 147-2016	Min:1 mm (Zone of inhibition)
		Bactericidal activity	AATCC Test Method 100-2012	1% to 99.99%
2.	**Medical Textile Materials - Fibre, Yarn and Fabric**	Antimicrobial activity of a substrate bound, non-leaching antimicrobial agent.	ASTM E2149-10 (2013a)	1% to 99.99%
3.	**Medical Textile-Face Mask**	Medical Textiles - Evaluation of the Bacterial Filtration Efficiency of Surgical Face Masks.	ASTM F2101-2014 IS 16288 - 2014	Upto 99.9%
4.	**Medical Textile-Surgical Gown, Drapes, Air Suits**	Resistance of Materials Used in Protective Clothing to Penetration by Blood-Borne Pathogens Using Phi-X174 Bacteriophage Penetration as a Test System	ASTM F1671-2013	Qualitative (Pass or Fail)
5.	**Medical Textile-Fabric**	Population of microorganisms (Facultative, non fastidious aerobic bacteria, yeast and moulds)	ISO 11737-1:2006	≥ 10 cfu/g

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
6.	**Medical Textile-Wound Dressings**	Primary wound dressings – Part 1:Aspects of absorbency 3.4 Fluid affinity of amorphous hydrogel dressings	EN 13726-1:2002	(Qualitative) (3.4. Category of amorphous hydrogel dressing)
		3.5 Gelling characteristics		(Qualitative) 3.5. Gelled or not-gelled.
		3.6 Dispersion characteristics		(Qualitative) 3.6. Dispersion or non-dispersion
		3.7 Dispersion/ Solubility of hydrogel dressings		(Qualitative) 3.7. Dispersed/not-dispersed/dissolved/not dissolved
II.	**FOOD AND AGRICULTURAL PRODUCTS**			
1.	**Tea**	Aerobic Plate Count	IS 5402:2012	>10 cfu/ g
		Yeast and Molds Count	IS 5403:1999 (RA 2013)	>10 cfu/ g
		E.coli	IS 5887 (Part 1):1976 (RA 2013)	(Present / Absent)/ g
		E.coli	IS 5887 (Part 1):1976 (RA 2013)	>10 cfu/ g
		Enumeration of Coliforms	IS 5401 (Part 1):2012	>10 cfu/ g
		S. aureus	IS 5887 (Part 8/Sec I):2002 (RA 2012)	>10 cfu/ g
		Salmonella Spp	IS 5887 (Part 3):1999 (RA 2013)	Qualitative (Present / Absent)/ 25 g
2.	**Coffee**	Aerobic Plate Count	IS 5402:2012	>10 cfu/ g
		Yeast and Molds Count	IS 5403:1999 (RA 2013)	>10 cfu/ g

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		E.coli	IS 5887 (Part 1):1976 (RA 2013)	Qualitative (Present / Absent)/ g
		E.coli	IS 5887 (Part 1):1976 (RA 2013)	>10 cfu/ g
		Enumeration of Coliforms	IS 5401 (Part 1):2012	>10 cfu/ g
		S. aureus	IS 5887 (Part 8/Sec I):2002 (RA 2012)	>10 cfu/ g
		Salmonella Spp	IS 5887 (Part 3):1999 (RA 2013)	Qualitative (Present / Absent)/ 25 g
III.	**WATER**			
1.	**Drinking Water, Ground Water, Surface Water, Water for Industrial Purpose**	Standard Plate Count	IS 1622:1981 (RA 2014)	>1 cfu/ml
		Total Coliforms	IS 1622:1981 (RA 2014)	(2 MPN to 100 MPN)/ 100 ml
		E.coli	IS 1622:1981 (RA 2014)	(2 MPN to 100 MPN)/ 100 ml
2.	**Packaged Drinking Water (Other than Packaged Natural Mineral Water**	Aerobic microbial count/ml at 37°C & 22°C	IS 5402:2012	≤1cfu
		Coliform	IS 15185:2016	Qualitative (Present /Absent)/ 100 ml (Present / Absent)/ 250 ml
		E.coli	IS 15185:2016	Qualitative (Present / Absent)/ 250ml
		Faecal streptococci	IS 15186:2002 (RA 2009)	Qualitative (Present / Absent)/ 250ml
		Staphylococcus aureus	IS 5887 (Part 2):1976 (RA 2009)	Qualitative (Present / Absent)/ 250ml
		Pseudomonas aeruginosa	IS 13428:2005 (RA 2014) Amd.2011/Annex D	Qualitative (Present / Absent)/ 250ml
		Yeast and Mold	IS 5403:1999 (RA 2013)	Qualitative (Present / Absent)/ 250ml

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Salmonella spp	IS 15187:2016	Qualitative (Present / Absent)/ 250ml
IV.	**ENVIRONMENT AND POLLUTION**			
1.	**Waste water (Treated and Untreated Effluent)**	Standard Plate Count	IS 1622:1981 (RA 2014)	>1 cfu/ml
		Total Coliforms	IS 1622:1981 (RA 2014)	(2 MPN to 1600 MPN)/ 100 ml
		Fecal Coliforms	IS 1622:1981 (RA 2014)	(2 MPN to 1600 MPN)/ 100 ml
		Fecal streptococci	IS 1622:1981 (RA 2014)	(2 MPN to 1600 MPN)/ 100 ml
		E.coli	IS 1622:1981 (RA 2014)	(2 MPN to 1600 MPN)/ 100 ml

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Validity	**31.01.2018 to 30.01.2020**	**Last Amended on 20.02.2018**	

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		CHEMICAL TESTING		
I.	**TEXTILES**			
1.	**Fibre, Yarn , Fabric, Apparels, Garments, Made-ups, Carpets, Terry Fabrics & its Products, Technical Textiles, Medical Textiles**	pH value of aqueous extracts of textile materials	IS:1390-1983 (RA 2013), AATCC81:2016, ISO 3071:2005	1 to 14
		Barium Activity Number of cotton textile materials	IS:1689-1973 (RA 2013)	100 to 180
		Identification of Textile Fibres	AATCC 20-2013	Qualitative
		Chemical analysis of mixtures of polyester fibres with cotton or regenerated cellulose (P/C&P/V)	IS:3416-1988 Reaffirmed 2008, AATCC 20A-2014	2 to 100
		Chemical analysis of binary mixtures of Acrylic and certain other fibres	IS:3421-1988 (RA 2010)	2 to 100
		Dimensional Changes of woven fabrics (other than wool) on soaking in water	IS:2977-1989 (RA 2010)	(-)50% to 50%
		Identification of the application classes of dyes on textile materials – cotton and other cellulosic fibres	IS:4472-1967 (RA 2010)	Qualitative
		Colour Fastness of textile materials to water	IS:767-1988 (RA 2009), ISO 105 E01-2013	Qualitative Grade 1 to 5

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Textiles – Tests for Colour Fastness, Part C10 Colour Fastness to Washing with Soap or Soap and Soda	IS/ISO 105-C 10:2006 (E)	Qualitative Grade 1 to 5
		Colour Fastness to Perspiration	IS:971-1983 (RA 2009), ISO 105 E04-2013	Qualitative Grade 1 to 5
		Colour fastness to rubbing	IS 766- 1989 (RA 2009), ISO 105 X12:2016	Qualitative Grade 1 to 5
		Dimensional Stability to Washing	ISO 3759:2011/ ISO 5077:2007/ ISO 6330: 2012, AATCC 135:2012	(-)50% to (+)50%
2.	**Fibre, Yarn, Fabrics, Non-oven, Medical Textiles**	Water Soluble Substances	IS 14944- of Section 6.12	Upto 5%
		Ether Soluble Substances	IS 14944- of Section 6.13	Upto 5%
		Sulphated ash	IS 14944- of Section 6.18	Upto 5%
3.	**Fibre, Yarn, Fabric, Apparels, Garments, Made-ups, Carpets, Terry Fabrics & its Products, Technical Textiles, Medical Textiles**	Absorbency	AATCC 79:2014	0 to 60 s
		Colour Fastness to Sublimation	IS 975:1988 RA 2004	Qualitative Grade 1 to 5
		Colour Fastness to Hot Pressing	IS 689:2004 AATCC 133:2013	Qualitative Grade 1 to 5
		Colour Fastness to Dry Cleaning	IS 4802:1988 ISO 105 D01:2010	Qualitative Grade 1 to 5
		Colour Fastness to Saliva	DIN 53160-1:2010	Qualitative Grade 1 to 5
		Colour Fastness to Artificial Light	ISO 105 B02:2014 AATCC 16 (E) IS 2454:1985 (RA 1996)	Qualitative Grade 1 to 5
		Quantitative chemical analysis of binary mixtures of regenerated cellulose fibre and cotton, Sodium zincate/ Sulphuric acid method	IS 1889 Part 1&4:1979	2% to 100%

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Water Repellency – Spray Test	AATCC 22:2014	Qualitative Grade 0 to 100
4.	**Fabrics, Apparels, Garments, Made-ups, Terry Fabrics & its products, Technical Textiles, Packaging Textiles, Others (Auxiliaries & Chemicals)**	PVC	Beilstein Method & FTIR	Qualitative
		Bio degradability	OECD – 301 D	Upto 100%
II.	**HAZARDOUS & RESTRICTED CHEMICALS**			
1.	**Fibre, Yarn , Fabric, Apparels, Garments, Made-ups, Carpets, Terry Fabrics & its Products, Technical Textiles, Medical Textiles**	Certain metals – Extractable heavy metals		
		Antimony	BS EN 16711-2:2015	0.005 mg/kg to 100 mg/kg
		Arsenic		0.005 mg/kg to 10 mg/kg
		Chromium		0.5 mg/kg to 100 mg/kg
		Cadmium		0.1 mg/kg to 100 mg/kg
		Cobalt		0.5 mg/kg to 100 mg/kg
		Copper		0.5 mg/kg to 100 mg/kg
		Lead		0.005 mg/kg to 100 mg/kg
		Nickel		0.5 mg/kg to 1000 mg/kg
		Mercury		0.025 mg/kg to 100 mg/kg
		Antimony	BS EN 16711-1:2015	0.005 mg/kg to 100 mg/kg
		Arsenic		0.005 mg/kg to 10 mg/kg
		Cadmium		0.1 mg/kg to 100 mg/kg
		Chromium		0.5 mg/kg to 100 mg/kg
		Cobalt		0.5 mg/kg to 100 mg/kg
		Copper		0.5 mg/kg to 100 mg/kg
		Lead		0.005 mg/kg to 100 mg/kg
		Nickel		0.5 mg/kg to 1000 mg/kg
		Mercury		0.025 mg/kg to 100 mg/kg

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	**Textile Product**	Certain aromatic amines derived from azo colorants	BS EN 14362-1:2017	5 mg/kg to 1000 mg/kg
		4-Amino biphenyl		
		4-Chloro-o-toluidine		
		Benzidine		
		2-Naphthyl amine		
		O-Amino azo toluene		
		2-Amino-4-nitrotoluene		
		P-Chloroaniline		
		3,3-Dichlorobenzidine		
		2,4-Diaminoanisole		
		4,4-Diamino diphynyl methane		
		3,3-Dimethyl benzidine		
		O-Dianisidine		
		4,4 Methylene BIS 2-Methyle Aniline		
		P-cresidine		
		4,4'-Methylene bis(2-chloro aniline		
		4,4-Oxydianiline		
		4,4-Thiodianiline		
		O-Toluidine		
		2,4-Diaminotoluene		
		2,4,5-Trimethyl aniline		
		O-Anisidine,		
		2,4-Xylidine		
		2,6- Xylidine,		
		4-Amino Azo Benzene	BS EN 14362-3:2017	5 mg/kg to 1000 mg/kg

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Alklphenol ethoxylates (APEO) OPEO NPEO	BS EN ISO 18254-1:2016	0.2 mg/kg to 1000 mg/kg
3.	**Fibre, Yarn , Fabric, Apparels, Garments, Made-ups, Carpets, Terry Fabrics & its Products, Technical Textiles, Medical Textiles**	Textiles – Formaldehyde Part 1 – Free Formaldehyde	ISO 14184-1:2011	16 mg/kg to 6500 mg/kg
		Formaldehyde release from fabric	AATCC 112-2014, ISO 14184-2:2011	16 mg/kg to 6500 mg/kg
III.	**WATER**			
1.	**Surface Water, Ground Water, Drinking water, Packaged Drinking Water, Construction Water, Irrigation Water, Water from Purifiers and Swimming Pool Water**	pH value	IS 3025 (Part 11):1983 (RA 2012)	1 to 14
		Total dissolved solids	IS 3025 (Part 16):1984 (RA 2012)	1 mg/L to 5000 mg/L
		Total solids	IS 3025 (Part 15):1984 (RA 2009)	1 mg/L to 5000 mg/L
		Total suspended solids	IS 3025 (Part 17):1984 (RA 2012)	1 mg/L to 100 mg/L
		Total hardness as $CaCO_3$	IS 3025 (Part 21):2009	1 mg/L to 2000 mg/L
		Acidity as $CaCO_3$	IS 3025 (Part 22):1986 (RA 2009)	1 mg/L to 100 mg/L
		Alkalinity (Total / Methyl orange)	IS 3025 (Part 23):1986 (RA 2009)	1 mg/L to 500 mg/L
		Phenolphthalein Alkalinity	IS 3025 (Part 23):1986 (RA 2009)	1 mg/L to 100 mg/L
		Carbonate alkalinity as $CaCO_3$	IS 3025 (Part 23):1986 (RA 2009)	1 mg/L to 500 mg/L

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Bi-carbonate alkalinity as $CaCO_3$	IS 3025 (Part 23):1986 (RA 2009)	1 mg/L to 500 mg/L
		Calcium as Ca	IS 3025 (Part 40):1991 (RA 2009)	1 mg/L to 1000 mg/L
		Chlorides as Cl	IS 3025 (Part 32):1988 (RA 2009)	1 mg/L to 5000 mg/L
		Odour	IS 3025 (Part 5):1983 (RA 2012)	Qualitative Agreeable / Disagreeable
		Magnesium as Mg	IS 3025 (Part 46):1994 (RA 2009)	1 mg/L to 500 mg/L
		Electrical Conductivity at 25 °C	IS 3025 (Part 14):2013	1 µS /cm to 10000 µS /cm
		Free carbon dioxide as CO_2	IS 3025 (Part 61):1987 (RA 2008)	1 mg/L to 100 mg/L
		Fixed solids	IS 3025 (Part 18):1984 (RA 2012)	1 mg/L to 5000 mg/L
		Volatile solids	IS 3025 (Part 18):1984 (RA 2012)	1 mg/L to 500 mg/L
		Calcium Hardness as $CaCO_3$	IS 3025 (Part 40): (RA 2009)	1 mg/L to 1000 mg/L
		Magnesium Hardness as $CaCO_3$	IS 3025 (Part 46): (RA 2003)	1 mg/L to 500 mg/L
		Colour	APHA 23rd Edn. 2017:2120 D (Spectrophotometric)	1 Hazen to100 Hazen
		Appearance	APHA 23rd Edn. 2017:2110	Qualitative
		Taste	IS 3025 (Part 7):1984 / IS 3025 (Part 8) (RA 2012)/ APHA 23rd Edn. 2017: 2160 C (Flavor Rating Assessment)	Qualitative
		Temperature	IS 3025 (Part 9):1984 (RA 2012) APHA 23rd Edn. 2017:2550B	5 °C to 50 °C

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Turbidity	IS 3025 (Part 10):1984 (RA 2012) APHA 23rd Edn. 2017:2130B (Nephelometric)	0.5 NTU to 500 NTU
		Fluorides	IS 3025 (Part 60):2008 (RA 2012) / APHA 23rd Edn. 2017:4500-F- D (SPADNS Method)	0.1 mg/L to 50 mg/L
		Silica	IS 3025 (Part 35):1988 RA 2014 APHA 23rd Edn. 2017:4500-SiO2 C:(Molybdosilicate)	1.0 mg/L to 50 mg/L
		Sulphates	IS 3025 (Part 24):1986 (RA 2014)	2 mg/l to 10,000 mg/L
		Chlorine TRC	IS 3025 (Part 26):1986 (RA 2003)	1 mg/l to 100 mg/l
		Sodium	APHA 23rd Edn. 2017:3500-Na B (Flame Emission Photometer)	0.5 mg/l to 1000 mg/L
		Total Organic Carbon	APHA 23rd Edn. 2017:5310B (TOC analyser)	1 mg/L to100 mg/L
		Anionic detergents (as MBAS)	IS 13428 (Annex K)	0.1 mg/L to 100 mg/L
		Chloramines (as Cl_2)	IS 3025 (Part 26)	1 mg/L to 100 mg/L
		Lead	APHA 23rd Edn. 2017:3111.B	0.2 mg/L to 10 mg/L
		Cobalt		0.5 mg/L to 10 mg/L
		Nickel		0.5 mg/L to 10 mg/L
		Copper		0.5 mg/L to 10 mg/L
		Cadmium		0.1 mg/L to 10 mg/L
		Total Chromium		0.5 mg/L to 10 mg/L
		Silver		0.5 mg/L to 10 mg/L
		Zinc		0.5 mg/L to 10 mg/L

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Tin		0.5 mg/L to 10 mg/L
		Iron		0.1 mg/l to 20 mg/L
		Manganese		0.1 mg/l to 20 mg/L
		Chromium 3	APHA 23rd Edn. 2017:3500-Cr.B	0.5 mg/L to 20 mg/L
		Chromium 6		0.1 mg/L to 20 mg/L
		Boron	APHA 23rd Edn. 2017:4500-B	0.1 mg/L to 20 mg/L
		Barium	IS 13428:2005 Annexure F	0.5 mg/L to 20 mg/ L
		Arsenic	APHA 23rd Edn. 2017:3114.C (HVG)	0.01 mg/L to 10 mg/L
		Antimony	APHA 23rd Edn. 2017:3114.C (HVG)	0.05 mg/L to 10 mg/L
		Mercury	APHA 23rd Edn. 2017:3112.B (HVG cold vapour)	0.05 mg/L to 10 mg/L
		Selenium (as Se)	IS 3025 (Part 56)	0.05 mg/L to 100 mg/L
2.	**Water From Purifiers, Laboratory Grade Water**	pH value	BS EN ISO 3696:1995	1 to 14
		Conductivity	BS EN ISO 3696:1995	1 µS/cm to 10000 µS/cm
		Residue After Evaporation	BS EN ISO 3696:1995	1 mg/kg to 100 mg/kg
		Oxidisable matter	BS EN ISO 3696:1995	0.2 mg/L to 100 mg/L
IV.	**POLLUTION & ENVIRONMENT**			
1.	**Industrial Water Surface others (Treated & Untreated Effluent, Sewage) Water, Ground Water**	pH value	IS 3025 (Part 11):1983 (RA 2012)	1 to 14
		Total dissolved solids	IS 3025 (Part 16):1984 (RA 2012)	1 mg/L to 100000 mg/L
		Total solids	IS 3025 (Part 15):1984 (RA 2009)	1 mg/L to 100000 mg/L
		Total suspended solids	IS 3025 (Part 17):1984 (RA 2012)	1 mg/L to 5000 mg/L
		Calcium as Ca	IS 3025 (Part 40):1991 (RA 2009)	1 mg/L to 1000 mg/L

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Chlorides as Cl	IS 3025 (Part 32):1988 (RA 2009)	1 mg/L to 5000 mg/L
		Oil & Grease	IS 3025 (Part 39):1991 (RA 2009)	1 mg/L to 500 mg/L
		Odour	IS 3025 (Part 5):1983 (RA 2012)	Qualitative Agreeable / Disagreeable
		Magnesium as Mg	IS 3025 (Part 46):1994 (RA 2009)	1 mg/L to 500 mg/L
		Electrical Conductivity at 25°C	IS 3025 (Part 14):2013	1 µS/cm to 10000 µS/cm
		Fixed Solids	IS 3025 (Part 18):1984 (RA 2012)	1 mg/L to 10000 mg/L
		Volatile solids	IS 3025 (Part 18):1984 (RA 2012)	1 mg/L to 1000 mg/L
		Calcium Hardness as $CaCO_3$	IS 3025 (Part 40):(RA 2009)	1 mg/L to 1000 mg/L
		Magnesium Hardness as $CaCO_3$	IS 3025 (Part 46):(RA 2003)	1 mg/L to 500 mg/L
		Colour	APHA 23rd Edn. 2017:2120 D (Spectrophotometric)	1 Hazen to100 Hazen
		Appearance	APHA 23rd Edn. 2017:2110	Qualitative
		Temperature	IS 3025 (Part 9):1984 (RA 2012) APHA 23rd Edn. 2017:2550B	5 °C to 50 °C
		Standard Test Method for Specific Gravity of Water & Brine	ASTM D 1429-13	0.8 g/cm^3 to 1.3 g/cm^3
		Turbidity	IS 3025 (Part 10):1984 (RA 2012) APHA 23rd Edn. 2017:2130B (Nephelometric)	0.5 NTU to 500 NTU
		Silica	IS 3025 (Part 35):1988 RA 2014 APHA 23rd Edn. 2017:4500-SiO_2 C:(Molybdosilicate)	1.0 mg/L to 100 mg/L

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Sulphates	IS 3025 (Part 24):1986 RA 2014	2 mg/L to 5,000 mg/L
		Nitrate	IS 3025 (Part 34):1988 RA (Spectrophotometer)	2 mg/L to 100 mg/L
		Nitrite	IS 3025 (Part 34):1988 RA 2014 (Spectrophotometer)	2 mg/L to 50 mg/L
		Ammonical Nitrogen	APHA 23rd Edn. 2017:4500-NH_3 C (Titrimetric), F (Phenate Spectro photometer)	1.0 mg/L to 1000 mg/L
2.	**Industrial Water Surface Water, Ground Water, others (Treated & Untreated Effluent, Sewage)**	Total Kjeldhal Nitrogen	APHA 23rd Edn. 2017:4500 N-B	1.0 mg/L to 1000 mg/L
		Phosphate	APHA 23rdEdn. 2017:4500-P- E	0.1 mg/L to 100 mg/L
		COD	APHA 23rd Edn. 2017:5220D	2 mg/L to 1,00,000 mg/L
		BOD @ 27ºC 3 days	IS 3025 Part 44:1993 RA2014	5 mg/L to 5000 mg/L
		BOD @20ºC 5days	APHA 23rd Edn. 2017:5210.B	5 mg/L to 5000 mg/L
		DO	IS 3025 (Part 38):1989 RA2014	1 mg/L to 8.5 mg/L
		Sodium	APHA 23rd Edn. 2017:3500-Na B:(Flame Emission Photometer)	2 mg/L to 10,000 mg/L
		Sodium	Irrigation Water Management- Principles & Practices by Pilip Kumar Majunder (SITRA/TC/SOP/01 Issue no. 01 dated 01.06.17)	4% to 100%
		SAR	IS 11624:1986 (RA 2009)	1 meq/L to 10 meq/L
		Potassium	APHA 23rd Edn. 2017:3500-K B:2012 (Flame Photometer)	5 mg/L to 1000 mg/L

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Total Organic Carbon	APHA 23rd Edn. 2017:5310B (TOC analyser)	1 mg/L to1000 mg/L
		Boron	APHA 23rd Edn. 2017: 4500-B	0.1 mg/L to 10 mg/L
		Barium	IS 13428:2005 Annexure F	0.1 mg/L to 100 mg/L
		Lead	APHA 23rd Edn. 2017:3111.B	0.2 mg/L to 100mg/L
		Cobalt		0.5 mg/L to 100 mg/L
		Nickel		0.5 mg/L to 100 mg/L
		Copper		0.5 mg/L to 100 mg/L
		Cadmium		0.1 mg/L to 100 mg/L
		Total Chromium		0.5 mg/L to 100 mg/L
		Silver		0.5 mg/L to 100 mg/L
		Zinc		0.5 mg/L to 100 mg/L
		Tin		0.5 mg/L to 100 mg/L
		Iron		0.1 mg/L to100 mg/L
		Manganese		0.1 mg/L to100 mg/L
		Chromium 3	APHA 23rd Edn. 2017:3500-Cr.B	0.5 mg/L to 100 mg/L
		Chromium 6		0.1 mg/L to 100 mg/L
		Arsenic	APHA 23rd Edn. 2017:3114.C (HVG)	0.01 mg/L to 10 mg/L
		Antimony	APHA 23rd Edn. 2017:3114.C (HVG)	0.05 mg/L to 100 mg/L
		Mercury	APHA 23rd Edn. 017:3112.B (HVG cold vapour)	0.05 mg/L to 10 mg/L
V.	**FOOD AND AGRICULTURAL PRODUCTS**			
1.	**Tea**	Moisture	IS 13853:1994	2% to10%
		Total Ash	IS 13854:1994	3% to 10%
		Water Extract	IS 13862:1999	20% to 60%
		Water Soluble Ash	IS 13855:1993	40% to 70%
		Alkalinity of Water Soluble Ash	IS 13856:1993	0.2% to 5%

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Acid Insoluble Ash	IS 13857:1993	0.02% to 5%
		Crude fibre	IS 10226 (Part-1):1982 ISO 5498-1981	2% to 40%
		Iron filings	IS 3633:2003	5 mg/kg to 500 mg/kg
2.	**Roasted Coffee**	Moisture	IS 3077:1992	1.0%to 20%
		Total Ash	IS 3077:1992	2.0% to 15.0%
		Water Soluble Ash	IS 3077:1992	30.0% to 85.0%
		Alkalinity of Water Soluble Ash	IS 3077:1992	0.2% to 5%
		Acid Insoluble Ash	IS 3077:1992	0.02% to 5.0%
		Water Soluble Matter	IS 3077:1992	20.0% to 50.0%
3.	**Soluble Coffee**	Moisture	IS 2791:1992	1.0% to 20%
		Total Ash	IS 2791:1992	2.0% to 15.0%
		Caffeine	IS 2791:1992	0.005% to 10.0%
		Solubility In Hot Water	IS 2791:1992	Qualitative
		Solubility In Cold Water At 16 ± 2 °C	IS 2791:1992	Qualitative

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

MECHANICAL TESTING

I.	**TEXTILE MATERIALS**			
1.	**Fibre**	Physical Properties of Cotton Fibres by High Volume Instruments: Length (2.5% SL) Strength Micronaire Colour Whiteness Rd Yellowness +b	ASTM D 5867-2012e1 In house method SITRA/FP/02-2017 (In house method SITRA/FP/04-2017)	3mm to 45 mm 1 gf/tex to 40 gf/tex 2.4-8.0 µg/inch (0.944 to 3.15) µg/cm 40-90 Rd 4-18 +b
		Neps in Cotton Fibres (AFIS-N Instrument) Nep Size	ASTM D 5866-12	450 microns to 1500 microns
		Neps/gram		1 Neps/g to 999 Neps/g
		UQL mm	In house method SITRA/FP/01-2015	10 mm to 40 mm
		Short Fibre Content		1% to 70%
		5% Length mm		15 mm to to 50 mm
		Fineness mTex		94 mTex to 300 mTex
		Maturity Ratio		0.50 to 1.0
		Non-Lint Content of Cotton Lint Trash	ASTM D 2812-07 (2012)	 80% to 99.9% 0.1% to 20%
		Cotton Fibre Maturity (by Sodium Hydroxide Swelling Method) Coefficient of Maturity	IS 236-1968 ((RA 2010)) Method 1	10 -90% Matured Fibres
		Single Fibre Length Measurement - Length and length distribution of manufactured staple fibres	BISFA Standard 2004 Chapter 5 In house method SITRA/FP/03-2017	5 mm to 200 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Single Fibre Denier	BISFA 2004 Chapter 6 ASTM D 1577-07 (2012)	Denier -0.5 to 10
		Tensile Properties of Single Textile Fibres Strength Elongation	ASTM D 3822/D 3822 M-14	 0.1gf to 90gf 2% to 250%
		Crimp Frequency of Man-made Staple Fibres	ASTM D 3937-2012	0.2 to 38 arcs/cm
2.	**Fibre/Yarn /Fabric**	Moisture Content Moisture Regain	ISO 6741-1-1989 ASTM D 629-15 (Clause:9)	0.2% to 30%
3.	**Yarn**	Linear Density of Yarn (Yarn Number) by the Skein Method & Breaking Strength of Yarn by Skein Form Count Strength	ASTM D 1907/D 1907 M-12 ASTM D 1578-93 (2016)	3 Tex to 600 Tex (1 to 200 Ne) 60N to 2005 N
		Unevenness of Textile Strands using Capacitance Testing Equipment and U% Imperfection/Km Hairiness of Yarns by Capacitance Testing Equipment	ASTM D 1425/D1425M-2014 In house method SITRA/YP/03-2015	5% to 30% 1 km to 9999 km H:upto 15
		Single Yarn Strength & Elongation Tensorapid Tensojet	In house method SITRA/YP/01-2015 & ASTM D 2256/D 2256 M-10 (2015) In house method SITRA/YP/02-2015	10 cN to 990 N Upto 100% 0.7 N to 50 N 3% to 70%

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	**Yarn**	Classifying and Counting Faults in Spun Yarns in Electronic Tests Short Thick faults Long Thick faults Long Thin faults	ASTM D-6197-99 (2017)	Total Faults/ 100 km 0 to 99999
		Grading Spun Yarns for Appearance-Grade - Index	ASTM D 2255/D 2255 M-09 (2013 el)	Qualitative Grade
		Twist in Single Spun Yarns by the Untwist Retwist Method Twist in yarn by direct counting	ASTM D 1422/ D 1422 M-13 ASTM D 1423/ D 1423 M-16	4 TPM to 2400 TPM (1TPI to 60 TPI)
		Measuring Hairiness of Yarns by the Photo-Electric Apparatus - No. of Hairs/ 100mtrs.	ASTM D 5647-07 (2012)	Hairs / 100 m 1 to 9999
		Co-efficient of Friction, Yarn to Solid Material (Indirect method)	ASTM D-3108/ D 3108 M-13	0.05 µ to 0.5 µ
5.	**Fabric/ Non-woven**	Breaking Strength & Elongation of Textile Fabrics (Grab Test) Breaking Strength & Elongation of Textile Fabrics (Strip Test)	ASTM D 5034-09 (2017) ISO 13934:2-1999(2014) & IS 1969:Part 2-2010 (RA 2014) ASTM D 5035-11 (2015) ISO 13934:1-1999 (2013) & IS 1969:Part 1-2009 (RA 2014)	Strength: 100 g to 480 kg Elongation:Upto 200%

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
6.	**Fabric**	Tearing Strength of Fabrics by Falling-Pendulum Type (Elmendorf) Apparatus	ASTM D 1424-09 (2013) & IS 6489:Part I-2011 (RA 2017)	320gf to 5120 gf
		Pilling Resistance of Fabrics Fabric propensity to surface fuzzing and to pilling (Pilling Box Method)	IS:10971- (Part-1):2011 (RA 2017) & ISO 12945 (Part -1):2000	(Qualitative) 1 to 5 Pilling Rating
		Warp End Count & Filling Pick Count of Woven Fabric	ASTM D 3775-12 IS 1963:2004 (RA 2014)	20 per dm to 1600 per dm
		Yarn Number based on Short-Length Specimen Warp Count Weft Count	In house method SITRA/CP/01-2015 & IS 3442:1980 (RA 2014)	118.1 Tex to 2.95 Tex (5 to 200) Ne
		Mass per Unit Area (Weight) of Fabric	ASTM D 3776/D 3776 M-09a (2017) – Option C IS 1964:2001 (RA 2017)	10g/ m^2 to 1200 g/ m^2.
		Yarn Crimp and Yarn Take-up in Woven Fabrics	ASTM D 3883-04 (2016) IS 3442:1980 (RA 2014)	Upto 50%
		Assessment of Drape of Fabrics - Drape Coefficient	BS 5058-1973	Coefficient Upto 100%
		Stiffness of Cloth Warp Bending Length Weft Bending Length	BS 3356-1990 & IS 6490:1971 RA 2014	1 cm to 7 cm
		Width of Textile Fabric	ASTM D 3774-96 (2016) (option-B) & IS 1954:1990 RA 2017	5mm to 4000 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Thickness of textiles and textile products	ASTM D 1777-96 (Reapproved 2015) & IS 7702:2012 (RA 2017)	0.01mm to 10 mm
		Bursting Strength and Bursting Distension of Fabrics:	ASTM D -3786/D3786M-13 & ISO 13938-1:1999 & IS 1966 Part I:2009 (RA 2014)	1 kg/cm² to 28kg/cm²
		Air permeability	ASTM D 737-04 (2016) IS 11056:2013	0.4 to 750 cm³ / cm² /s at 125 Pa
7.	**Technical Textiles**	Liquid strike-through time using simulated urine	ISO 9073-8:1995(E)/ NWSP 070.3. R0 (15) IS 15891(Part 8):2012 Reaffirmed 2016	0.5 sec to 5 Sec
		Coverstock wetback	NWSP 080.10.R0 (15)	0.01g to 5.0 g
		Mass per unit area Weight per unit area	ISO 9073-1:1989 (E)/ NWSP 130.1.R0 (15) IS 15891 (Part 1):2011 Reaffirmed 2015 IS 14944- Part 6.4:2001 Reaffirmed 2016	10 g/ m^2 to 600 g/ m^2
		Repeated liquid strike-through time (simulated urine)	ISO 9073-13:2006 (E) NWSP 70.7.R0 (15)	0.5 sec to 5 sec
		Wetback after repeated liquid strike through time (simulated urine)	ISO 9073-14:2006 (E) /NWSP 070.8.R0 (15)	0. 01 g to 5.0 g
		Run-off	ISO 9073-11:2002 (E)/ NWSP 080.9.R0 (15)	Upto 25 g
		Three standard test methods for nonwoven Absorption	NWSP 010.1.R0 (15) & ISO 9073-6:2000 (E) IS 15891 (Part 6):2012 Reaffirmed 2016	Liquid Absorption Time: 0.5 s to 10 s Liquid Absorptive Capacity: 50% to 2000% Vertical Wicking: Upto 25 cm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Lint and other particles generation in the dry state	ISO 9073-10:2003(E)/ NWSP 160.1.R0 (15)	Particles Counted - 0 to 400000 (0.5 Microns to 25.0 Microns)
		Water penetration (spray impact)	AATCC 42:2013/ NWSP 080.3.R0 (15)/ ISO 9073-17:2008 (E)	Upto 500 g
		Resistance to water penetration -- Hydrostatic pressure test	EN 20811:1992/ ISO 811:1981(E)/ ISO 9073-16:2007 (E) AATCC 127:2014	Upto 6998 mmwc
8.	**Textile Materials, Medical Textiles Fabrics (Woven & Nonwoven)**	Resistance of Materials Used in Protective Clothing to Penetration by Synthetic Blood	ASTM F1670/F1670M - 08(2014) e1	Qualitative
9.	**Medical Textiles**	Absorbency Sinking Time Water holding capacity	IS 14944:2001 Reaffirmed 2016 Part 6.11.2 Part 6.11.3	 0.5sec to 10 sec 50% to 2000%
		Initial efficiency of materials used in medical face masks to penetration by particulates using latex spheres	ASTM F2299/F2299M - 03(2010) IS 16289:2014 Annexure E	Upto 99% @0.3 µm
		Medical Face Masks to Penetration by Synthetic Blood (Horizontal Projection of Fixed Volume at a Known Velocity)	ASTM F1862 / F1862M – 13 IS 16289:2014 Annexure D	(Qualitative)
10.	**Fabrics (Woven & Nonwoven)**	Water Vapor Transmission of Materials	ASTM E96 / E96M - 16	0 to 5000 g/m²/24h

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Fabric propensity to surface fuzzing and to pilling:Modified Martindale method	ISO 12945-2 (Part 2):2000 (E)	Qualitative Grade 5 to 1
		Thermal and water-vapour resistance under steady-state conditions (sweating guarded-hotplate test)	ISO 11092:2014 (E)	0.001 m²K/W to 2.00 m²K/W 1.0 m²Pa/W to 1000 m²Pa/W
		Liquid Moisture Management Properties of Textile Fabrics	AATCC 195:2012	Index – 0 to 0.93
11.	**Coated Fabrics**	Coated and treated fabrics, Rubber-or plastics-coated fabrics -Resistance to Penetration by water	IS 7016 (Part 7):2009 (RA 2014)	Qualitative
12.	**Medical Textiles**	Absorbency under pressure	IS 5405:1980 (RA 2012) (Appendix - A)	Qualitative
		Disposability	IS 5405:1980 (RA 2012)	Qualitative