

Laboratory Integrated Research & Analysis Centre, 2nd Floor, IRAC House, 164, Naharpur, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6798

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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
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BIOLOGICAL TESTING

I. FOOD AND AGRICULTURAL PRODUCTS				
1.	Milk & Dairy Products	Total Plate Count	IS 5402:2012	≥ 10 cfu/g ≥ 1 cfu/ml
		Yeast and mold count	IS 5403:1999 (RA 2009)	≥ 10 cfu/g ≥ 1 cfu/ml
		Escherichia coli	IS 5887 (Part 1): 1976 (RA 2009) IS 15185:2002	Qualitative (Present/ Absent per g/ ml)
		Coliform count	IS 5401 (Part 1): 2002 (RA 2007)	≥ 10 cfu/g
2.	Beverages (Alcoholic Non-Alcoholic)	Total Plate Count	IS 5402: 2012	≥ 1 cfu/ml
		Yeast & Mold count	IS 5403: 1999 (RA-2009)	≥ 1 cfu/ml
		Coliform Count	IS 3752: 2005 (RA-2009)	≥ 1 cfu/ml
II. WATER				
1.	Packaged Drinking water (other than Packaged Natural Mineral Water)	Total Viable Colony Count		
		At 37±1°C for 24 hours	IS 5402: 2012	≥1 cfu/ml
		At 20 to 22°C for 72 hours	IS 5402: 2002	≥1 cfu/ml
		Yeast &Mould Count	IS 5403: 1999 (RA 2009)	Qualitative (Present/Absent per 250 ml)
		E. coli	IS 5887 (Part 1): 1976 (RA 2009)/IS 15185:2002	Qualitative (Present/Absent per 250 ml)
		Coliform	IS 5401(Part 1): 2002 (RA 2007)	Qualitative (Present/Absent per 250 ml)
		Faecalstreptococcus/ Streptococci	IS 5887 (Part 2): 1976 (RA 2009) IS 15186: 2002	Qualitative (Present/Absent per 250 ml)

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2.	Packaged Natural Mineral Water	E. coli	IS 5887 (Part 1): 1976 (RA 2009) IS 15186-2002	Qualitative (Present/Absent per 250 ml)
		Coliform	IS 5401 (Part 1): 2002 (RA 2007) IS 5401 (Part 2): 2012	Qualitative (Present/Absent per 250 ml)
		Faecal streptococcus/ Streptococci	IS 5887 (Part 2): 1976 (RA 2009) IS 15186: 2002	Qualitative (Present/Absent per 250 ml)
3.	Water for Processed Food Industry	Coliform bacteria	IS 1622:1981 (RA 2009) AMD-4	<2 MPN/ 100mL to 1600 MPN/ 100mL
		Standard plate count	IS 1622: 1981 (RA 2009)	≥1 cfu/ml
		E. coli	IS 5887 (Part 1): 1976 (RA 2009)	Qualitative (Present/ Absent per ml)
		Coliform count	IS 5401 (Part 1): 2002 (RA 2007)	≥1 cfu/ml
		Yeast & mould count	IS 5403:1999 (RA 2009)	≥1 cfu/ml
4.	Water for Swimming Pool and Spas/Industrial/Ground/Surface water			
a.	Ice Cubes Potable Water/ Raw Water/ Cooling Tower Water/ Farm Water/ Pond Water/ River Water/ River Water Other Water Swimming Pool Recreational Water	Bacterial count aerobic microbial count standard plate & Total Plate Count	IS 5402: 2012	≥1 cfu/ml
		Coliform	IS 5401 (Part 1): 2002 (RA 2007)	≥1 cfu/ml
			IS 5401 (Part 2): 2012	<2 MPN/ 100mL to 1600 MPN/ 100ml
			IS 1622:1981 (RA 2009) Amd. 1-4	2 MPN/ 100mL to 1600 MPN/ 100ml
		Coliform (MFT)	IS 5401 (Part 1): 2002 (RA 2007)	Qualitative (Present/ Absent per 250ml volume filtered)
		E. coli	IS 1622:1981 (RA 2009) Amd. 1-4	<2 MPN/ 100mL to 1600 MPN/ 100ml

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		E. coli (MFT)	IS 5887 (Part 1): 1976 (RA 2009) IS 15185:2002	Qualitative (Present/ Absent per volume filtered)
b.	Drinking water	Colony count at 37 °C	IS 5402:2012	≥1 cfu/ml
		Colony Count at 22 °C	IS 5402:2012	≥1 cfu/ml
		Coliform Count by MPN	IS 1622:1981 (RA 2009)	<2 MPN/ 100mL to 1600 MPN/ 100ml
		Faecal Coliform	IS 1622:1981 (RA 2009)	Qualitative (Present/ Absent per volume filtered)
		E. coli	IS 1622:1981 (RA 2009)	Qualitative (Present/ Absent per volume filtered)

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CHEMICAL TESTING

I.	WATER			
1.	Packaged Drinking Water/ Packaged Natural Mineral Water	Colour	IS 3025: 1983 (Part 4) (RA 2017) / APHA (22nd Edition) 2120-B	1 units to 100 units
		Odour	IS 3025 (Part 5): 1983 (RA 2017) / APHA (22nd Edition) 2150	Qualitative
		Taste	IS 3025 (Part 8): 1984 (RA 2017)/ APHA (22nd Edition) 2160	Qualitative
		Turbidity	IS 3025 (Part 10): 1984 (RA 2017)/ APHA (22nd Edition) 2130-B	0.1 NTU to 1000 NTU
		pH Value	IS 3025 (Part 11): 1983 (RA2017) / APHA (22nd Edition) 4500- H+ B	1 to 14
		Total Dissolved Solids	IS 3025 (Part 16): 1984 (RA 2017)/ APHA (22nd Edition) 2540-C	5 mg/l to 2000 mg/l
		Alkalinity	IS 3025 (Part 23): 1986 (RA 2014) / APHA (22nd Edition) 2320-B	2 mg/l to 2000 mg/l
		Sulphate	IS 3025 (Part 24):1986 (RA 2014) / APHA(22nd Ed)4500-SO42- C& E	1 mg/l to 1000 mg/l
		Residual Free Chlorine	IS 3025 (Part 26): 1986 (RA 2014) / APHA (22nd Edition) 4500-Cl- B	0.05 mg/l to 1000 mg/l

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		Sulphide	IS 3025 (Part 29): 1986 (RA 2014) APHA (22nd Edition) 4500-S2- - F	0.01 mg/l to 100 mg/l
		Chloride (as Cl)	IS 3025 (Part 32) : 1988 (RA 2014) APHA (22nd Edition) 4500-Cl- B	1 mg/l to 1000 mg/l
		Nitrate- NITROGEN	IS 3025 (Part 34): 1988 (RA 2014) APHA (22nd Edition) 4500-NO3- – B	0.1 mg/l to 1000 mg/l
		Nitrite- NITROGEN	IS 3025 (Part 34): 1988 (RA 2014) APHA (22nd Edition) 4500-NO2- – B	0.01 mg/l to 500 mg/l
		Mineral oil	IS: 3025(Part39):1991(RA 2014)/APHA(22 nd Ed)5520-O & G-B	0.5 mg/l to 1000mg/l
		Phenolic compounds	IS 3025 (Part 43): 1992 (RA 2014) APHA (22 nd Edition) 5530-C	0.01 mg/l to 1000 mg/l
		Anionic Surface-Active Agent	IS13428:2005(RA 2014) annex-K/APHA (22 nd Edition) 5540-B & C	0.01 mg/l to 10 mg/l
		Calcium (as Ca)	IS 3025 (Part 40): 1991 (RA 2014)/ APHA (22nd Edition) 3500-Ca – B/ IS 3025 (Part 2): 2004	0.5 mg/l to 1000 mg/l
		Sodium (as Na)	IS 3025 (Part 45): 1993 (RA 2014) APHA (22 nd Edition) 3500-Na	0.2 mg/l to 100 mg/l
		Magnesium (as Mg)	IS 3025 (Part 46): 1994 (RA2014) APHA (22 nd Edition) 3500-Mg –B/ IS 3025 (Part 2): 2004	0.2 mg/l to 1000 mg/l

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		Fluoride (as F)	IS 3025 (Part 60): 2008 (RA 2013) APHA (22 nd Edition) 4500-F-D	0.02 mg/l to 10 mg/l
		Borates	IS13428:2005 (RA 2014) annex-H APHA (22 nd Edition) 4500-B/ IS 3025(Part-2):2004(RA 2014)	0.2 mg/l to 1000 mg/l
		Cyanide (as CN)	IS 3025 (Part 27): 1986(RA 2014)/APHA (22 nd Edition) 4500-CN	0.02 mg/l to 1000 mg/l
2.	Surface, Ground, Drinking Water	Colour	IS 3025: 1983 (Part 4) (RA 2017) / APHA (22 nd Edition) 2120-B	1 units to 100 units
		Odour	IS 3025 (Part 5) : 1983(RA 2017) /APHA (22 nd Edition) 2150	Qualitative
		Taste	IS 3025 (Part 8): 1984 (RA 2017) /APHA (22 nd Edition) 2160	Qualitative
		Turbidity	IS 3025 (Part 10):1984(RA 2017)/ APHA (22 nd Edition) 2130-B	0.1 NTU to 1000 NTU
		pH Value	IS 3025 (Part 11):1983(RA2017) /APHA (22 nd Edition) 4500- H ⁺ B	1to 14
		Temperature	IS 3025:Part-9:1984 (RA 2017) APHA (22 nd Edition) 2550-B	5 to 50° C
		Conductivity	IS 3025:Part-14:1984 (RA 2013) APHA (22 nd Edition) 2510-B	1.0 to 20000 µs/cm

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		Total Suspended Solids, (Dried at 103-105 °C)	IS 3025(Part-17):1984 (RA 2017)/APHA (22 nd Edition) 2540-D	2mg/l to10000 mg/L
		Total Dissolved Solids, (Dried at 105 °C)	IS 3025(Part-16):1984 (RA 2017)/ APHA (22 nd Edition) 2540-C	5.0 to10000 mg/L
		Acidity	IS 3025:Part-22:1986 (RA 2014)/ APHA (22 nd Edition) 2310-B	2 to5000 mg/L
		Alkalinity as (CaCO ₃)	IS 3025(Part-23):1986 (RA 2014)/ APHA (22 nd Edition) 2320-B	2 to5000 mg/L
		Chloride as (Cl)	IS 3025(Part-32):1988 (RA 2014)/APHA (22 nd Edition) 4500-Cl-B	1-5000 mg/L
		Chlorine Demand	IS 3025(Part-25):1986 (RA2014)	0.5 -5 mg/L
		Chlorine Residual	IS 3025(Part-26):1986 (RA2014)	0.5 -5 mg/L
		Dissolved Oxygen	IS 3025(Part-38):1989 (RA 2014)/ APHA (22 nd Edition) 4500-O-B	1-100 mg/L
		Fluoride as (F)	IS 3025 (Part 60): 2008 (RA 2013) APHA (22 nd Edition) 4500-F-D	0.2- 10 mg/L
		Phosphate as(P)	IS 3025(Part-31):1988 (RA 2014)/ APHA (22 nd Edition) 4500- P-C & D	0.1-2000 mg/L
		Sulphate (as SO ₄)	IS 3025 (Part 24):1986 (RA 2014) / APHA (22 nd Ed) 4500-SO ₄ ²⁻ - C& E	2 – 1000 mg/L
		Sulphide as (S)	IS 3025 (Part 29): 1986 (RA 2014)/ APHA (22 nd Edition) 4500-S2 - F	0.5- 20 mg/L

Ashok Kumar
Convenor

N. Venkateswaran
Program Director

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		Total Hardness as (CaCO ₃)	IS 3025:Part-21:2009 (RA 2014)/ APHA (22 nd Edition) 2340-C	5-2000 mg/L
		Calcium (as Ca)	IS 3025 (Part 40) : 1991 (RA 2014) /APHA (22 nd Edition) 3500-Ca – B/ IS 3025(Part-2):2004(RA 2014)	0.5 mg/l to 1000 mg/l
		Magnesium (Mg)	IS 3025 (Part 46): 1994 (RA 2014) APHA (22 nd Edition) 3500-Mg –B/ IS 3025(Part-2):2004(RA 2014)	0.2 mg/l to 1000 mg/l
		Potassium (K)	IS 3025 (Part 45): 1993 (RA 2014) APHA (22 nd Edition) 3500-Na	0.2 to 200 mg/L
		Sodium (Na)	IS 3025 (Part 45): 1993 (RA 2014) APHA (22 nd Edition) 3500-Na	0.2 mg/l to 100 mg/l
		Mineral Oil	IS 3025:Part-39:1991 (RA 2014)/ APHA (22 nd Edition) 5520-O&G-B	0.5 – 100 mg/L
		Ammoniacal Nitrogen as NH ₃ -N	IS 3025:Part-34:1988 (RA 2014) APHA (22 nd Edition) 4500-NH ₃ – B,C&F	0.1 to 500 mg/L
		Total Kjeldhal's Nitrogen	IS 3025:Part-34:1988 (RA 2014)/ APHA (22 nd Edition) 4500-NH ₃ – B,C&F	0.1 to 1000 mg/L
		Nitrate as(NO ₃)	IS 3025:Part-34:1988 (RA 2014)/ APHA (22 nd Edition) 4500-NO ₃ ⁻ – B	2 to 1000mg/L

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		Nitrite as(NO ₂)	IS 3025:Part-34:1988 (RA 2014)/ APHA (22 nd Edition) 4500-NO ₂ – B	0.01 to1000 mg/L
		Phenolic compounds	IS 3025 (Part 43): 1992 (RA 2014)/APHA (22 nd Edition) 5530-C	0.01 mg/l to 1000 mg/l
		Anionic Surface Active Agent	IS13428:2005 (RA 2014) annex-K APHA (22 nd Edition) 5540-B&C	0.01 mg/l to 10 mg/l
		Silica as (SiO ₂)	IS 3025:Part-35:1988 (RA 2014) APHA (22 nd Edition) 4500-SiO ₂ -C & D	0.01to100 mg/L
		Cyanide	IS 3025 (Part 27): 1986(RA 2014)/ APHA (22 nd Edition) 4500-CN	0.02 mg/l to 1000 mg/l
		Hexavalent Chromium as(Cr ⁶⁺)	IS 3025 (Part 52): 2003 (RA 2014) APHA (22 nd Edition) 3500-Cr-B	0.2-200 mg/L
3.	Water for Processed Food Industry	Colour	IS 3025: 1983(Part 4) (RA 2017) / APHA (22 nd Edition) 2120-B	1 units to 100 units
		Turbidity	IS 3025 (Part 10):1984(RA 2017)/ APHA (22 nd Edition) 2130-B	0.1 NTU to 1000 NTU
		Odour	IS 3025 (Part 5) : 1983(RA 2017) /APHA (22 nd Edition) 2150	Qualitative
		pH Value	IS 3025 (Part 11):1983(RA2017) /APHA (22 nd Edition) 4500- H ⁺ B	1 to 14
		Total Solids	IS 3025 (Part 15):1984 (RA 2014)/ APHA (2540-B)	1.0 mg/l to 20000 mg/l

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		Total Hardness as (CaCO ₃ ,mg/L	IS 3025:Part-21:2009 (RA 2014)/ APHA (22 nd Edition) 2340-C	5-2000 mg/L
		Sulphate (as SO ₄)	IS 3025 (Part 24):1986(RA 2014) / APHA(22 nd Ed)4500-SO ₄ ²⁻ - C& E	1 mg/l to 1000 mg/l
		Fluoride (as F)	IS 3025 (Part 60): 2008(RA 2013)/ APHA (22 nd Edition) 4500-F- D	0.02 mg/l to 10 mg/l
		Chloride (as Cl)	IS 3025 (Part 32): 1988 (RA 2014)/ APHA (22 nd Edition) 4500-Cl- B	1 mg/l to 10000 mg/l
		Cyanide (as Cn)	IS 3025 (Part 27): 1986(RA 2014)/APHA (22 nd Edition) 4500-CN	0.02 mg/l to 1000 mg/l
		Magnesium (as Mg)	IS 3025 (Part 46): 1994 (RA 2014) APHA (22 nd Edition) 3500-Mg / IS 3025(Part-2):2004(RA 2014)	0.01 mg/l to 1000 mg/l
		Chromium (as Cr ⁶⁺)	IS 3025 (Part 52):2003(RA 2014) / APHA (22 nd Edition) 3500-Cr -B	0.02 mg/l to 1000 mg/l
		Nitrate as(NO ₃)	IS 3025:Part-34:1988 (RA 2014)/ APHA (22 nd Edition) 4500-NO ₃ ⁻ – B	2 to 1000mg/l
		Phenolic Substances (as C ₆ H ₅ OH)	IS 3025 (Part 43): 1992 (RA 2014) /APHA (22 nd Edition) 5530-C	0.01 mg/l to 1000 mg/l

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		Calcium (as Ca)	IS 3025 (Part 40) : 1991 (RA 2014) /APHA (22nd Edition) 3500-Ca – B/ IS 3025(Part-2):2004(RA 2014)	0.5 mg/l to 10000 mg/l
		Alkalinity (as CaCO ₃)	IS 3025 (Part 23): 1986 (RA 2014) / APHA (22 nd Edition) 2320-B	2 mg/l to 500 mg/l
		Carbonate Hardness	IS 3025 (Part 51):2001(RA 2017) APHA (22 nd Edition) 2340-C	1.0 mg/l to 10000 mg/l
4.	Water for Swimming Pool	pH Value	IS 3025 (Part 11):1983(RA2017) /APHA (22 nd Edition) 4500- H ⁺ B	1 to 14
		Total Alkalinity(as CaCO ₃)	IS 3025 (Part 23): 1986 (RA 2014) / APHA (22 nd Edition) 2320-B	2 mg/l to 2000 mg/l
		Total Residual Chlorine	IS 3025 (Part 26): 1986 (RA 2014)/ APHA (22 nd Edition) 4500-Cl B	0.10 mg/l to 1000 mg/l
		Oxygen Absorbed In 4 Hours at 27 ^o C	IS 3025:Part-63:2007 (RA 2013)	1.00 mg/l to 1000 mg/l
		Total Dissolved Solids	IS 3025 (Part 16): 1984 (RA 2017)/APHA (22 nd Edition) 2540-C	5 mg/l to 10000 mg/l
		Chloride(as Cl)	IS 3025 (Part 32) : 1988 (RA 2014)/ APHA (22 nd Edition) 4500-Cl B	1 mg/l to 1000 mg/l
		Colour	IS 3025 (Part 4):1983 (RA 2017) / APHA (22 nd Edition) 2120-B	1 units to 100 units
		Turbidity	IS 3025 (Part 10):1984(RA 2017)/APHA (22 nd Edition) 2130-B	0.1 NTU to 1000 NTU

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		Odour	IS 3025 (Part 5) : 1983(RA 2017) /APHA (22 nd Edition) 2150	Qualitative
		Taste	IS 3025 (Part 8) : 1984(RA 2017)/APHA (22 nd Edition) 2160	Qualitative
5.	Water for Construction Purpose	Organic Solids, mg/L	IS 3025:Part-18:1984 (Reaffirmed 2017)	1-1000mg/L
		Inorganic Solids, mg/L	IS 3025:Part-18:1984 (Reaffirmed 2017))	1-1000mg/L
		Sulphate as (SO ₄),mg/L	IS 3025:Part-24:1986 (Reaffirmed 2014) 4500-SO ₄ -E APHA 22 nd Edition 2012	1-5000 mg/L
		Chloride as (Cl),mg/L	IS 3025:Part-32:1988 (Reaffirmed 2014) 4500-Cl-B APHA 22 nd Edition 2012	1-10000mg/L
		Suspended Matter	IS 3025:Part-17:1984 (RA 2017) 2540-D- APHA 22 nd Edition 2012	1-10000mg/L
		pH at 25°C	IS 3025:Part-11:1983 (Reaffirmed 2017) 4500-B- APHA 22 nd Edition 2012	1-14
		To Neutralize 100 ml sample of water using phenolphthalein as an indicator using 0.02N NaOH	IS 3025:Part-22:1986 (Reaffirmed 2014)	0.1-10ml 10-50ml
		To Neutralize 100 ml sample of water using mixed as an indicator using 0.02N H ₂ SO ₄	IS: 3025 (Part 23)- 1986(Reaffirmed 2014)	0.1-25ml 25-50ml

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6.	Feed Water, Boiler Water & Condensate Water for High Pressure Boiler Water	pH Value	IS 3025 (Part 11):1983(RA2017) /APHA (22nd Edition) 4500- H+ B	1 to 14
		Total Hardness as (CaCO ₃)	IS 3025:Part-21:2009 (RA 2014)/ APHA (22nd Edition) 2340-C	2-10000 mg/L
		Dissolved Oxygen	IS 3025:Part-38:1989 (Reaffirmed 2014) 4500 O- BC APHA 22ndEdition 2012	1-16 mg/L
		Odour	IS 3025:Part-5:1983(RA 2017)	Qualitative
		Silica as (SiO ₂)	IS 3025:Part-35:2003(RA 2014) APHA (22nd Edition) 4500-SiO ₂ -C & D,	0.01 to 100 mg/L
		Oil & Grease,	IS 3025:Part-39:1991 (RA 2014) APHA (22nd Edition) 5520 O&G-B	1 to 1000 mg/L
		Conductivity at 25 °C	IS 3025:Part-14:1984 (RA 2013)	0.1– 10000 µs/cm
		Oxygen Consumed in 4 hours	IS 3025:Part-63:2007(RA 2013)	0 -100mg/L
		Total Alkalinity as (CaCO ₃)	IS 3025:Part-23:1986 (Reaffirmed 2014) 2320-B APHA 22ndEdition 2012	1-500 mg/L
		Caustic Alkalinity as (CaCO ₃)	IS 3025:Part-23:1986 (Reaffirmed 2014)	1-10000 mg/L
Phosphate as (PO ₄)	IS 3025(Part-31):1988 (RA 2014)/ APHA (22nd Edition) 4500-P-C&D	0.1-1000 mg/L		

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		Total Dissolved Solids, (Dried at 103-105 °C)	IS 3025 (Part 16): 1984 (RA 2017)/APHA (22nd Edition) 2540-C	5 mg/l to 10000 mg/l
		Total Suspended Solids, (Dried at 103-105°C)	IS 3025 (Part 17): 1984 (RA 2017)/APHA (22nd Edition) 2540-D	5 mg/l to 10000 mg/l
		Chloride as (Cl)	IS 3025 (Part 32) : 1988 (RA 2014)/ APHA (22nd Edition) 4500-Cl- B	1 mg/l to 1000 mg/l
		Ammonia as (NH ₃)	IS 3025:Part-34:1988 (RA 2014)	0.1-20mg/L
II.	POLLUTION AND ENVIRONMENT			
1.	Effluent/ Sewage/ Waste Water	Colour	IS 3025: 1983 (Part 4) (RA 2017) / APHA (22nd Edition) 2120-B	1 units to 100 units
		Turbidity	IS 3025 (Part 10):1984(RA 2017)/APHA (22nd Edition) 2130-B	0.1 NTU to 1000 NTU
		Temperature	IS 3025:Part-9:1984 (RA 2017) APHA (22nd Edition) 2550-B	5 to 50° C
		Conductivity	IS 3025:Part-14:1984 (RA 2013) APHA (22nd Edition) 2510-B	1.0 to 20000 µs/cm
		pH Value	IS 3025 (Part 11):1983(RA2017) /APHA (22nd Edition) 4500- H+ B	1 to 14
		Total Solids Dried, (at 103-105°C)	IS 3025(Part15):1984 (RA 2014) APHA (22nd Edition) 2540-B	1.0-10000 mg/L

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		Total Suspended Solids,(Dried at 103-105°C)	IS 3025(Part-17):1984 (RA 2017)/ APHA (22nd Edition) 2540-D	2mg/l to10000 mg/L
		Total Dissolved Solids, (Dried at 103-105°C)	IS 3025(Part-16):1984 (Reaffirmed 2017)/ APHA (22nd Edition) 2540-C	5.0 to10000 mg/L
		Fixed Solids	IS 3025(Part-18):1984 (RA 2017)/ APHA (22nd Edition) 2540-E	2.0-10000 mg/L
		Volatile Solids	IS 3025(Part-18):1984 (RA 2017)/ APHA (22nd Edition) 2540-E	2.0-10000 mg/L
		Settleable Solids	IS 3025(Part-19):1984 (RA 2017)/ APHA (22nd Edition) 2540-F	2 mg/l to10000 mg /l
		Acidity	IS 3025:Part-22:1986 (RA 2014)/ APHA (22nd Edition) 2310-B	2 to5000 mg/L
		Alkalinity as (CaCO ₃)	IS 3025(Part-23):1986 (RA 2014)/ APHA (22nd Edition) 2320-B	2 to5000 mg/L
		Total Hardness as (CaCO ₃)	IS 3025:Part-21:2009 (RA 2014)/ APHA (22nd Edition) 2340-C	5-2000 mg/L
		Chloride as (Cl)	IS 3025(Part-32):1988 (RA 2014)/APHA (22nd Edition) 4500-Cl—B	1-5000 mg/L
		Dissolved Oxygen	IS 3025(Part-38):1989 (RA 2014)/ APHA (22nd Edition) 4500-O-B	1-100 mg/L
		Bio-Chemical Oxygen Demand (BOD)	IS 3025:Part-44:1993 (Reaffirmed 2014)	5 to5000 mg/L

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		Chemical Oxygen Demand (COD)	IS 3025:Part-58:2006 (RA 2017)	5 to 5000 mg/L
		Oil & Grease	IS 3025:Part-39:1991 (RA 2014)/ APHA (22nd Edition) 5520-O&G – B	0.5 – 100 mg/L
		Chlorine Demand	IS 3025(Part-25):1986 (RA 2014)	0.5 -5 mg/L
		Chlorine Residual	IS 3025(Part-26):1986 (Reaffirmed 2014)	0.5 -5 mg/L
		Ammoniacal Nitrogen as NH ₃ -N	IS 3025:Part-34:1988 (RA 2014)/APHA (22nd Edition) 4500-NH ₃ – B,C&F	0.1 to 500 mg/L
		Total Kjeldhal's Nitrogen,	IS 3025:Part-34:1988 (RA 2014)/APHA (22nd Edition) 4500-NH ₃ – B,C&F	0.1 to 1000 mg/L
		Nitrate as(NO ₃)	IS 3025:Part-34:1988 (RA 2014)/APHA (22nd Edition) 4500-NO ₃ - – B	2 to 1000mg/L
		Nitrite as(NO ₂),	IS 3025:Part-34:1988 (RA 2014)/ APHA (22nd Edition) 4500-NO ₂ - – B	0.01 to 1000 mg/L
		Sulphate (as SO ₄),mg/L	IS 3025 (Part 24):1986(RA 2014) / APHA(22nd Ed)4500-SO ₄ 2- C& E	2 to 1000 mg/L
		Sulphide as (S)	IS 3025 (Part 29): 1986 (RA 2014)/ APHA (22nd Edition) 4500-S ₂ - - F	0.5 to 100 mg/L
		Sulphite as (SO ₃)	IS 3025(Part-28):1986 (RA 2014) APHA (22nd Edition) 4500 SO ₃ A&B	2 to 1000mg/L
		Phenolic compounds	IS 3025 (Part 43): 1992 (RA 2014)/APHA (22nd Edition) 5530-C	0.01 mg/l to 100 mg/l

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		Potassium as (K)	IS 3025:Part-45:1993 (RA 2014)	0.2-200 mg/L
		Sodium as (Na)	IS 3025:Part-45:1993 (RA 2014)	0.2-200 mg/L
		Fluoride as (F)	IS 3025 (Part 60): 2008 (RA 2013) APHA (22nd Edition) 4500-F-D	0.2- 100 mg/L
		Phosphates as (P)	IS 3025(Part-31):1988 (RA 2014)/APHA (22nd Edition) 4500- P-C&D	0.1-2000 mg/L
		Silica as (SiO ₂)	IS 3025:Part-35:1988(RA 2014) APHA (22nd Edition) 4500-SiO ₂ -C & D,	0.01to100 mg/L
		Sludge Volume Index	APHA (22nd Edition) 2710-D	1.0 to 250 ml/l
		Dissolve Phosphate as (P)	IS 3025:Part-31:1988 (RA 2014)	0.7-2000 mg/L
		Cyanide as (Cn),mg/L	IS 3025:Part-27:1986 (RA 2014) APHA (22nd Edition) 3114	0.01mg/l to 5mg/L
		Barium as (Ba),mg/L	IS13428: 2005(RA 2014)Annexure F APHA (22nd Edition) 3111-D/ IS 3025(Part-2):2004(RA 2014)	0.01 mg/l to 1000 mg/l
		Calcium (as Ca)	IS 3025 (Part 40) : 1991 (RA 2014) /APHA (22nd Edition) 3500-Ca – B/ IS 3025(Part-2):2004(RA 2014)	0.5 mg/l to 1000 mg/l

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		Magnesium (Mg)	IS 3025 (Part 46): 1994(RA 2014) APHA (22nd Edition) 3500-Mg –B/ IS 3025(Part-2):2004(RA 2014)	0.2 mg/l to 1000 mg/l
		Boron as (B),mg/L	IS 13428:2005 (RA 2014)annex-H APHA (22nd Edition) 4500-B/ IS 3025(Part-2):2004(RA 2014)	0.2 mg/l to 1000 mg/l
		Mercury as (Hg)	IS 3025 (Part 48): 1994(RA 2014) APHA (22nd Edition) 3500-Hg/ IS 3025(Part-2):2004(RA 2014)	0.0005 mg/l to 1000 mg/l
		Arsenic as (As)	IS 3025 (Part 37): 1988 (RA 2014)/ APHA (22nd Edition) 3500-As / IS 3025(Part-2):2004(RA 2014)	0.001 mg/l to 1000 mg/l
		Cadmium as (Cd),mg/L	IS 3025 (Part 41): 1992 (RA 2014)/ APHA (22nd Edition)3500-Cd/ IS 3025(Part-2):2004(RA 2014)	0.001 mg/l to 1000 mg/l
		Total Chromium as (Cr)	IS 3025 (Part 52): 2003 (RA 2014) APHA (22nd Edition) 3500-Cr/ IS 3025(Part-2):2004(RA 2014)	0.002mg/l to 1000 mg/l

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		Hexavalent Chromium as (Cr6+)	IS 3025 (Part 52): 2003 (RA 2014) APHA (22nd Edition) 3500-Cr-B	0.2mg/l to 1000 mg/l
		Copper as (Cu)	IS 3025(Part 42): 1992 (RA 2014) APHA (22nd Edition) 3500-Cu/ IS 3025 (Part-2):2004(RA 2014)	0.001 mg/l to1000 mg/l
		Iron as (Fe)	IS 3025 (Part 53): 2003 (RA 2014) APHA (22nd Edition) 3500-Fe / IS 3025 (Part-2):2004(RA 2014)	0.01 mg/l to1000 mg/l
		Tin as (Sn)	3500-Sn (3111A&B) APHA 22ndEdition 2012	0.1-200 mg/L
		Lead as (Pb)	IS 3025 (Part 47): 1994(RA 2014) APHA (22nd Edition) 3500-Pb/ IS 3025(Part-2): 2004 (RA 2014)	0.001 mg/l to1000 mg/l
		Nickel as (Ni)	IS 3025 (Part 54): 2003 (RA 2014)APHA (22nd Edition)3500-Ni/IS 3025 (Part-2): 2004 (RA 2014)	0.001 mg/l to 1000 mg/l
		Zinc as (Zn)	IS 3025 (Part 49): 1994 (RA 2014) APHA (22nd Edition) 3500-Zn/ IS 3025(Part-2): 2004 (RA 2014)	0.01 mg/l to 1000 mg/l
		Aluminum as (Al)	IS 3025 (Part 55): 2003 (RA 2014) APHA (22nd Edition) 3500-Al/IS 3025(Part-2): 2004 (RA 2014)	0.01 mg/l to 1000 mg/l

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		Manganese as (Mn)	IS 3025 (Part 59): 2006 (RA 2017) APHA (22nd Edition) 3500-Mn/ IS 3025(Part-2): 2004 (RA 2014)	0.01 mg/l to 1000 mg/l
		Selenium as (Se)	IS 3025 (Part 56): 2003 (RA 2014) APHA (22nd Edition) 3500-Se /IS 3025(Part-2): 2004 (RA 2014)	0.001 mg/l to 1000 mg/l
		Lithium as (Li)	APHA (22nd Edition) 3500-Li	0.01-100 mg/L
III.	RESIDUES IN WATER			
1.	Package Drinking Water/ Package Natural Mineral Water	Pesticide		
		O,P-DDT	USEPA 508:1995 Rev.-3.1/ AOAC (20 th Edition) 990.06	0.01mg/l to 100mg/l
		O,P-DDT	USEPA 508:1995 Rev.-3.1/ AOAC (20 th Edition) 990.06	0.01mg/l to 100mg/l
		O,P-DDE	USEPA 508:1995 Rev.-3.1/ AOAC (20 th Edition) 990.06	0.01mg/l to 100mg/l
		O,P-DDD	USEPA 508: 1995 Rev.-3.1/ AOAC (20 th Edition) 990.06	0.01mg/l to 100mg/l
		P,P-DDT	USEPA 508: 1995 Rev.-3.1/ AOAC (20 th Edition) 990.06	0.01mg/l to 100mg/l
		γ-HCH (Lindane)	USEPA 508:1995 Rev.-3.1/ AOAC (20 th Edition) 990.06	0.01mg/l to 100mg/l
		Ethion	USEPA 1657A :2000,Rev-A	0.01mg/l to 100mg/l
		Alchlor	USEPA 507:1995, Rev-2.1/ USEPA525.2:1995, Rev-2	0.01mg/l to 100mg/l

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		Aldrin	USEPA 525.2:1995, Rev-2/ AOAC (20th Edition) 990.06	0.01mg/l to 100mg/l
		Dieldrin	USEPA 525.2:1995, Rev-2/ AOAC (20th Edition) 990.06	0.01mg/l to 100mg/l
		Trace Metals		
		Copper (as Cu)	IS: 3025(Part42):1992(RA 2014)/APHA(22 nd Ed)3500-Cu- IS 3025(Part-2):2004 (RA-2014)	0.02 mg/l to 1000 mg/l
		Zinc (as Zn)	IS 3025 (Part 49): 1994 (RA2014) APHA (22 nd Edition) 3500-Zn/ IS 3025(Part-2): 2004 (RA 2014)	0.1 mg/l to 1000 mg/l
		Iron (as Fe)	IS 3025 (Part 53): 2003 (RA 2014) APHA (22 nd Edition)3500-Fe –B/ IS 3025 (Part-2): 2004	0.01 mg/l to1000 mg/l
		Aluminum (as Al)	IS 3025 (Part 55): 2003 (RA 2014) APHA (22 nd Edition)3500-Al/ IS 3025 (Part-2): 2004(RA 2014)	0.01 mg/l to 1000 mg/l
		Selenium (as Se)	IS 3025 (Part 56): 2003 (RA 2014) APHA (22 nd Edition) 3500-Se / IS 3025(Part-2):2004(RA 2014)	0.01 mg/l to1000 mg/l
		Manganese (Mn)	IS 3025 (Part 59): 2006 (RA 2017) APHA (22 nd Edition) 3500-Mn/ IS 3025(Part-2): 2004 (RA 2014)	0.01 mg/l to1000 mg/l

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		Barium (as Ba)	IS 13428: 2005 (RA 2014) Annexure F APHA (22 nd Edition) 3111-D/ IS 3025(Part-2):2004(RA 2014)	0.01 mg/l to 1000 mg/l
		Silver (as Ag)	IS13428:2005(RA 2014) annex-J APHA (22 nd Edition) 3500-Ag/IS 3025(Part-2): 2004 (RA 2014)	0.001 mg/l to 5 mg/l
		Arsenic (as As)	IS 3025 (Part 37): 1988 (RA2014)/ APHA (22 nd Edition) 3500-As/IS 3025(Part-2): 2004 (RA 2014)	0.001 mg/l to 1000 mg/l
		Cadmium (as Cd)	IS 3025 (Part 41): 1992 (RA 2014)/ APHA (22 nd Edition)3500-Cd/ IS 3025 (Part-2): 2004 (RA 2014)	0.005 mg/l to 1000 mg/l
		Chromium (as Cr)	IS 3025 (Part 52): 2003 (RA 2014) APHA (22 nd Edition) 3500-Cr/ IS 3025(Part-2):2004(RA 2014)	0.002mg/l to 1000 mg/l
		Lead (as Pb)	IS 3025 (Part 47): 1994(RA 2014)APHA (22 nd Edition) 3500-Pb/ IS 3025(Part-2): 2004 (RA 2014)	0.001 mg/l to 1000 mg/l
		Nickel (as Ni)	IS 3025 (Part 54): 2003 (RA 2014) APHA (22 nd Edition)3500-Ni/IS 3025(Part-2):2004(RA 2014)	0.01 mg/l to 1000 mg/l

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2.	Surface Water, Ground Water and Drinking Water	Trace Metals		
		Barium (as Ba)	IS 13428: 2005(RA 2014) Annexure F APHA (22 nd Edition) 3111-D/ IS 3025(Part-2):2004 (RA 2014)	0.01 mg/l to 1000 mg/l
		Tin as (Sn)	APHA (22 nd Edition) 3500-Sn	0.1-200 mg/L
		Boron as (B)	IS13428:2005 (RA 2014) annex-H APHA (22 nd Edition) 4500-B IS 3025(Part-2):2004 (RA 2014)	0.2 mg/l to 1000 mg/l
		Arsenic	IS 3025 (Part 37): 1988 (RA 2014)/ APHA (22 nd Edition) 3500-As /IS 3025(Part-2): 2004 (RA 2014)	0.001 mg/l to 1000 mg/l
		Cadmium	IS 3025 (Part 41): 1992 (RA 2014)/ APHA (22 nd Edition)3500-Cd IS 3025(Part-2):2004(RA 2014)	0.001 mg/l to 1000 mg/l
		Chromium as Cr	IS 3025 (Part 52): 2003 (RA 2014) APHA (22 nd Edition) 3500-Cr/IS 3025(Part-2): 2004 (RA 2014)	0.002mg/l to 1000 mg/l
	Copper (Cu)	IS 3025(Part 42): 1992 (RA 2014) APHA (22 nd Edition) 3500-Cu/ IS 3025 (Part-2):2004(RA 2014)	0.001 mg/l to 1000 mg/l	

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		Iron (Fe)	IS 3025 (Part 53): 2003 (RA 2014) APHA (22 nd Edition)3500-Fe / IS 3025(Part-2):2004(RA 2014)	0.01 mg/l to1000 mg/l
		Lead (Pb)	IS 3025 (Part 47): 1994(RA 2014) APHA (22 nd Edition) 3500-Pb/ IS 3025(Part-2):2004(RA 2014)	0.001 mg/l to1000 mg/l
		Nickel as (Ni)	IS 3025 (Part 54): 2003 (RA 2014) APHA (22 nd Edition)3500-Ni/ IS 3025(Part-2):2004(RA 2014)	0.001 mg/l to 1000 mg/l
		Zinc as (Zn)	IS 3025 (Part 49): 1994 (RA 2014) APHA (22 nd Edition) 3500-Zn/ IS 3025(Part-2):2004(RA 2014)	0.01 mg/l to 1000 mg/l
		Aluminum as (Al)	IS 3025 (Part 55): 2003 (RA 2014) APHA (22 nd Edition)3500-Al/ IS 3025(Part-2):2004(RA 2014)	0.01 mg/l to 1000 mg/l
		Manganese as (Mn)	IS 3025 (Part 59): 2006 (RA 2017) APHA (22 nd Edition) 3500-Mn/ IS 3025(Part-2): 2004 (RA 2014)	0.01 mg/l to1000 mg/l

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		Selenium as (Se)	IS 3025 (Part 56): 2003 (RA 2014) APHA (22 nd Edition) 3500-Se /IS 3025(Part-2): 2004 (RA 2014)	0.001 mg/l to1000 mg/l
3.	Water for Processed Food Industry	Trace Metals		
		Selenium (as Se)	IS 3025 (Part 56): 2003 (RA 2014) APHA (22 nd Edition) 3500-Se /IS 3025(Part-2): 2004 (RA 2014)	0.001 mg/l to1000 mg/l
		Iron (as Fe)	IS 3025 (Part 53): 2003 (RA 2014) APHA (22 nd Edition)3500-Fe –B/ IS 3025 (Part-2): 2004(RA 2014)	0.01 mg/l to1000 mg/l
		Manganese (as Mn)	IS 3025 (Part 59): 2006 (RA 2017)/APHA (22 nd Edition) 3500-Mn/IS 3025 (Part 2): 2004 (RA 2014)	0.01 mg/l to1000.00mg/l
		Copper (as Cu)	IS 3025 (Part 42): 1992 (RA 2014)/ APHA (22 nd Edition) 3500-Cu/ IS 3025 (Part 2): 2004(RA 2014)	0.001 mg/l to 1000 mg/l
		Lead (as Pb)	IS 3025 (Part 47): 1994 (RA 2014)/APHA (22 nd Edition) 3500-Pb/ IS 3025 (Part 2): 2004 (RA 2014)	0.001 mg/l to 1000 mg/l
		Zinc (as Zn)	IS 3025 (Part 49): 1994 (RA 2014)/ APHA (22 nd Edition) 3500-Zn /IS 3025 (Part 2): 2004 (RA 2014)	0.1 mg/l to 1000 mg/l

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		Arsenic (as As)	IS 3025 (Part 37): 1988 (RA 2014)/APHA (22nd Edition) 3500-As/ IS 3025 (Part 2): 2004 (RA 2014)	0.001 mg/l to 1000 mg/l
		Cadmium (as Cd)	IS 3025 (Part 41): 1992 (RA 2014)/APHA (22nd Edition) 3500-Cd/ IS 3025 (Part 2): 2004 (RA 2014)	0.001 mg/l to 1000 mg/l
		Mercury (as Hg)	IS 3025 (Part 48): 1994 (RA 2014)/APHA (22nd Edition) 3500-Hg/ IS 3025 (Part 2): 2004(RA 2014)	0.0001 mg/l to 1000 mg/l
4.	Water for Swimming Pool	Aluminum (as Al)	IS 3025 (Part 55): 2003 (RA 2014) APHA (22 nd Edition)3500-Al/ IS 3025 (Part-2): 2004 (RA 2014)	0.01 mg/l to 1000 mg/l
		Iron (as Fe)	IS 3025 (Part 53): 2003 (RA 2014) APHA (22 nd Edition) 3500-Fe –B/ IS 3025(Part-2): 2004(RA 2014)	0.001 mg/l to1000 mg/l
		Heavy Metal (as Pb)	IS 3025 (Part 47): 1994 (RA 2014) APHA (22 nd Edition) 3500-Pb IS 3025(Part-2):2004(RA 2014)	0.001 mg/l to1000 mg/l
5.	Feed Water, Boiler Water & Condensate Water for High Pressure Boiler Water	Iron as (Fe)	IS 3025 (Part 53): 2003 (RA 2014) APHA (22 nd Edition)3500-Fe –B/ IS 3025 (Part-2): 2004	0.01 mg/l to1000 mg/l

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		Copper as (Cu)	IS 3025(Part 42): 1992 (RA 2014) APHA (22nd Edition) 3500-Cu/ IS 3025 (Part-2): 2004 (RA 2014)	0.002 mg/l to 1000 mg/l
IV.	FOOD AND AGRICULTURAL PRODUCTS			
1.	Cereals & Pulses Products			
a.	Cereals Products Whole & Powdered, Raw & Processed	Moisture	IS 1155: 1968 (RA 2015) IS 1485: 1993 (RA 2015) IS 1010: 1968 (RA 2015) IS 1158: 1973 (RA 2010) IS 1009: 1979 (RA 2015)	0.1 to 20.0%
		Total Ash	IS 1010: 1968 (RA 2015) IS 1155: 1968 (RA 2015) IS 1158: 1973 (RA 2010) IS 1485: 1993 (RA 2015) IS 1009: 1979 (RA 2015)	0.01 to 5.0%
		Acid insoluble ash	IS 1010: 1968 (RA 2015) IS 1155: 1968 (RA 2015) IS 1158: 1973 (RA 2010) IS 1485: 1993 (RA 2015) IS 1009: 1979 (RA 2015)	0.01 to 2.5 %
		Gluten	IS 1010: 1968 (RA 2015) IS 1155: 1968 (RA 2015) IS 1009: 1979(RA 2015)	0.2 to 15 %
		Alcoholic acidity	IS 1158: 1973 (RA 2010) IS 1155: 1968 (RA 2015) IS 1010: 1968 (RA 2015)	0.02 to 2%
		Crude fiber	IS 1155: 1968 (RA 2015) IS 4684: 1975 (RA 2015) IS 1156: 1957 (RA 2015) IS 1158: 1973 (RA 2010)	0.05 to 20%

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		Cold water Soluble	IS 4706 (Part 1): 1978 (RA 2015)	0.5 to 30 %
b.	Pulses and Pulse Products Pulses Whole, Powdered Finished Products	Moisture	IS 4333 (Part 2): 2017 IS 4684: 1975 (RA 2015)	0.1 to 20.0%
		Protein	IS 7219: 1973 (RA 2010)	0.05% to 30%
		Fat	IS 4684: 1975 (RA 2015)	0.02 to 30 %
		Carbohydrates	IS 1656: 2007 (RA 2012)	1 to 90%
		Insect infestation	IS 4333 (Part 1):1996 (RA 2012)	0.05 to 20%
		Energy	IS 14433: 2007(RA 2012) by Calculation	50 kcal to 500 kcal/100 g
2.	Milk & Dairy Products			
a.	Condensed Milk, Dairy Whitener, SMP, Casein, Lactose Powder, WMP, Flavoured Milk	Moisture	IS 16072: 2012 (RA 2017) IS 10484: 1983(RA 2014)	0.1 to 90%
		Energy	IS 14433: 2007(RA 2012) By Calculation	20 kcal to 1000kcal
		Total solids	IS 1479 (Part 2): 1961 (RA 2013) IS 16072-2012	0.1% to 100%
		Fat	IS 11721: 2013 IS 1479 (Part 1): 2016	0.1 to 30 %
		Protein	IS 7219: 1973 (RA 2010) IS 1479 (Part 2): 1961 (RA 2013)	0.1 to 90%
		Salt as Sodium Chloride	IS 3507: 1966 (RA 2013) IS 253-2014	0.01% to 10%
		Titration Acidity	IS 11766: 1986 (RA 2012) IS 1165: 2007	0.01 to 5.0%
		Total Ash	IS 14433 (Part 1): 1997 (RA 2005) IS 1165: 2007	0.01 to 10%
b.	Paneer	Energy	IS 14433: 2007 (RA 2012) by Calculation	50 kcal to 500 kcal/100 g

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		Fat	IS 10484:1983 (RA 2014)	0.1 to 60%
		Protein	IS 7219:1973 (RA 2010)	0.1 to 90%
		Acidity	IS 10484:1983 (RA 2014)	0.01 to 5.0%
		Moisture	IS 10484:1983 (RA 2014)	1.0 to 80%
		Salt as Sodium Chloride	IS 2785:1979 (RA 2011)	0.1 to 5%
3.	Bakery & Confectionary			
a.	Cookies, Biscuits, Bread, Cake	Moisture	IS 1011: 2002 (RA 2009) IS 12711: 1989 (RA 2009)	0.1 to 50 %
		Total Ash	IS 1011: 2002 (RA 2009) IS 12711: 1989 (RA 2009)	0.01 to 10%
		Acid insoluble ash	IS 1011: 2002 (RA 2009) IS 12711: 1989(RA 2009)	0.01 to 10.0 %
		Fat	IS 1011: 2002 (RA 2009) IS 12711: 1989(RA 2009)	0.1 to 60%
		Crude fiber	IS 12711: 1989(RA 2009) IS 1483:1988 (RA 2010)	0.1 to 30%
		Protein	IS 7219: 1973 (RA 2010)	0.1 to 50%
		Carbohydrate	IS 1656: 2007(RA 2012)	20 to 80%
		Energy	IRAC/SOP/FD/001 Issue No.-01& Issue Date- 17.10.2016	10 kcal to 600 kcal/ 100 g
		Acidity of extracted fat	IS 12711: 1989 (RA 2009) IS 1011: 2002 (RA 2009)	0.01 to 10%
		Salt	AOAC 960.29(20 th Edition)	0.1 to 5 %
		Alcoholic Acidity	IS 12711:1989(RA 2009)	0.01 to 10%
		pH of Aqueous Extract	IS 12711:1989(RA 2009)	2 to 14
4.	Ready to Eat (Namkeen, Papad, Potato Chips, Snacks)	Moisture	IS 12569:1989 (RA 2010) IS 2639:1999 (RA 2015)	0.5 to 40 %
		Total Ash	IS 12569:1989 (RA 2010) IS 2639:1999 (RA 2015)	0.5 to 20 %
		Salt Content	IS 14515:1998 (RA 2009)	0.1 to 5.0 %
		Acid insoluble Ash	IS 12569:1989 (RA 2010)	0.05 to 10 %

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		Fat Content	IS 2639:1999 (RA 2015) IS 12569:1989 (RA 2010)	1.0 to 60 %
		Protein	IS 7219:1973(RA 2010)	0.5 to 30 %
		Alkalinity in ash	IS 2639 :1999(RA 2015) IS 12569:1989(RA 2010)	1 to10%
5.	Spices and Condiments			
a.	Whole & Powdered	Moisture	IS 1797 :2017	0.5 to 20 %
		Ash	IS 1797 :2017	0.1 to 50%
		Acid insoluble Ash	IS 1797 :2017	0.01 to 4.0 %
		Volatile Oil	IS 1797 :2017	0.2 ml to 20 ml/100 g
		Non-volatile ether extract	IS 1797 :2017	0.01 to 40%
		Crude fiber	IS 1797 :2017	0.2 to 20%
		Starch	IS 4706 (Part 2): 1978 (RA 2015)	1 to 70%
		Cold water Soluble extract	IS 1797 :2017	0.1 to 20%
		Test for lead chromate	IS 3576: 2010	Qualitative
		Calcium as calcium Oxide	IS 1797 :2017	0.01 to 20.0%
		Cur cumin content	IS 10925: 1984 (RA 2012)	0.5 to 10%
		Salt as Sodium chloride	IS 1797:2017	0.2 to 50 %
		Acidity	IS 13242: 1991 (RA 2012)	0.1 to 40%
		Alcoholic soluble extract	IS 1797 :2017	0.5 to 80%
		Light Berry	IS 1798: 2010	0.1 to 20 %
6.	Fruits, Vegetables and Related Products			
a.	Raw Fruits and Vegetables	Moisture	IS 4624:1978(RA 2013) IS 3543:1996(RA 2009)	0.1 to 80%
		Ash	IS 3500: 1966 (RA 2009)	0.01 to 10 %
		Protein	IS 7219: 1973 (RA 2010)	0.5 to 30%
		Salt	IS 2860: 1964 (RA 2008)	0.02 to 20%
		Specific Gravity	IS 2860: 1964(RA 2008)	0.4 to 1.50

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		Total Soluble solids	IS 3882: 1966 (RA 2010) IS 13815 :2010	0.5 to 60 %
		pH Value	IS 2860: 1964 (RA 2008)	1 to 10
		Acidity	IS 2860: 1964 (RA 2008) IS 13844:2003(RA 2008)	0.05 to 5%
7.	Honey	Moisture	Annex B of IS 4941:1994: RA2008	0.5 to 30 %
		Total Reducing Sugar	Annex C of IS 4941:1994:RA2008	70 to 100 %
		Sucrose	Annex C of IS 4941:1994:RA2008	0.20 to 20%
		Glucose	Annex C of IS 4941:1994:RA2008	0.20 to 30%
		Fructose-Glucose Ratio	Annex C of IS 4941:1994:RA2008	0.20 to 5.0
		Ash Content	Annex D of IS 4941:1994:RA2008	0.05 to 2 %
		Acidity	Annex E of IS 4941:1994:RA2008	0.05 to 1.5 %
		Fiehe'S test	Annex F of IS 4941:1994:RA2008	Negative/Positive
		Specific Gravity @27°C	Annex A of IS 4941:1994:RA2008	1.0 to 2.0
		Optical density at 660 nm	Annex H of IS 4941:1994:RA2008	0.1 to 1.0%
8.	Oil and Fat and Related Products			
a.	Oil and Fat	Acid Value	IS 548 (P-1):1964 RA 2015	0.10 – 10
		Insoluble Impurities	IS 548 (P-1):1964 RA 2015	0.1 to 10%
		Melting Point	IS 548 (P-1):1964 RA 2015	40°C to 100°C
		Moisture	IS 548 (P-1):1964 RA 2015	0.01 to 5 %
		FFA	IS 548 (P-1):1964 RA 2015	0.10 to 10 %
		Iodine Value	IS 548 (P-1):1964 RA 2015	10 to 300
		Peroxide Value	IS 548 (P-1):1964 RA 2015	0.1Meq/kg to 25 Meq/kg

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		Saponification Value	IS 548 (P-1):1964 RA 2015	5.0 to 300
		Unsaponifiable Matter	IS 548 (P-1):1964 RA 2015	0.05 to 10 %
		Specific Gravity	IS 548 (P-1):1964 RA 2015	0.5 to 2.0
9.	Tea & Coffee	Total Ash	IS 13854:1994 (RA 2009)	0.1 to 10 %
		Acid Insoluble ash	IS 13857:1993 (RA 2009)	0.01 to 10 %
		Water Extract	IS 13862:1999 (RA 2009)	10 to 50 %
		Alkalinity of Water Soluble ash (as K ₂ O)	IS 13856:1993 (RA 2009)	0.5 to 10 %
		Moisture content	IS: 13853; 1994 (RA 2009)	0.1 to 20 %
		Water Soluble ash	IS 13855:1993(RA 2009)	20 to 80 %
10.	Alcoholic Drink & Beverages			
a.	Beer	Ethyl Alcohol content	IS 3865 :2001 (RA 2009) Annex A	1.0 -50.0%
		pH	IS 3865 : 2001 (RA 2009); Annex B	2.0-12.0
b.	Whisky, Rum, Gin, Vodka, Brandie, Table wine, Country spirit distillate, ENA, Tequila, Fortified Wine	Ethyl Alcohol content	IS 3752 : 2005 (RA 2009) IS 3811 : 2005 (RA 2009) IS 4100 : 2005 (RA 2009) IS 4149 : 2005 (RA 2012) IS 4450 : 2005 (RA 2009) IS 5286 : 2005 (RA 2009) IS 5287 : 2005 (RA 2009) IS 7058 : 2005 (RA 2010) IS 7585 : 1995 (RA 2009)	1.0-50.0%
		Total acidity (as tartaric acid)	IS 3752 : 2005 (RA 2009)	0.02-2.0 g/100ltr.
		Residue on evaporation	IS 3752 : 2005 (RA 2009)	0.1-20%
		pH	IS 7585:1995 (RA 2009)	2.0-12.0
		Ash content	IS 3752 : 2005 (RA 2009)	0.1-2.0%
IV.	ANIMAL FOOD & FEEDS			
1.	ANIMAL FEEDS	Moisture	IS 7874 (P- 1):1975 RA 2014	1.0 to 20 %

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		Crude Protein	IS 7874 (P- 1):1975 RA 2014	2.0 to 70 %
		Crude Fat	IS 7874 (P- 1):1975 RA 2014	0.1 to 20 %
		Total Ash	IS 7874 (P- 1):1975 RA 2014	0.1 to 40%
		Crude Fiber	IS 7874 (P- 1):1975 RA 2014	0.5 to 50%
		Acid insoluble ash	IS 7874 (P- 1):1975 RA 2014	0.1to- 10%

Ashok Kumar
Convenor

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MECHANICAL TESTING

I.	PLASTIC AND POLYMER			
1.	Plastic Containers for Drinking Water	Brimful capacity	IS 2798:1998 (RA 2009)	100 ml to 20000ml
		Wall thickness	IS 2798:1998 (RA 2009)	0.05 mm to 3.0 mm
		Transparency	IS 15410:2003 (RA 2009)	50 % to 100 %
		Leakage test	IS 2798:1998 (RA 2009)	Qualitative
		Drop Impact test	IS 2798:1998 (2009)	Qualitative
2.	Poly Ethylene Pouches for Mineral Water	Drop test	IS 15609:2005 (RA 2010)	Qualitative
		Dart Impact Resistance	IS 2508:2016	Qualitative
		Stack Load Test	IS 15609:2005 (RA 2010)	Qualitative
		Ink adhesion Test	IS 15609:2005 (RA 2010)	Qualitative
		Tensile strength	IS 2508:2016	10 kg/cm ² to 1500 kg/cm ²
		Elongation at break	IS 2508:2016	10 % to 1500 %
II.	BUILDING MATERIALS			
1.	Paver Block	Compressive Strength	IS 15658:2006 (RA 2016)	5 N/mm ² to 75 N/mm ²
		Water Absorption	IS 15658:2006 (RA 2016)	1 % to 20 %
		Resistance to wear	IS 15658:2006 (RA 2016)	1000 mm ³ to 10000 mm ³
		Visual inspection	IS 15658:2006 (RA 2016)	Qualitative
		Dimension		
		Length, L	IS 15658:2006 (RA 2016)	100 mm to 500 mm
		Width, W	IS 15658:2006 (RA 2016)	100 mm to 500 mm
		Thickness, T	IS 15658:2006 (RA 2016)	50 mm to 120 mm
		Aspect Ratio, (L/T)	IS 15658:2006 (RA 2016)	1 mm to 10 mm
		Arris/ Chamfer (Depth)	IS 15658:2006 (RA 2016)	1 mm to 10 mm
		Arris/ Chamfer (Width)	IS 15658:2006 (RA 2016)	1 mm to 10 mm
		Thickness of Wearing layer	IS 15658:2006 (RA 2016)	1 mm to 100 mm
		Plan Area, Asp	IS 15658:2006 (RA 2016)	0.001 m ² to 10 m ²
		Wearing face area, Asw	IS 15658:2006 (RA 2016)	10 % to 100 %

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		Squareness	IS 15658:2006 (RA 2016)	1 mm to 50 mm
		Tensile Splitting strength	IS 15658:2006 (RA 2016)	10 N/mm ² to 100 N/mm ²
		Flexural strength/ Breaking load	IS 15658:2006 (RA 2016)	5 N/mm ² to 100 N/mm ²
		Freeze-Thaw Durability	IS 15658:2006 (RA 2016)	0.01 % to 100 %
2.	AAC Block	Dimension		
		Length	IS 2185 (Part 3): 1984 (RA 2010)	100 mm to 1000 mm
		Width	IS 2185 (Part 3): 1984 (RA 2010)	100 mm to 500 mm
		Height	IS 2185 (Part 3): 1984 (RA 2010)	100 mm to 500 mm
		Bulk density	IS 6441 (Part 1): 1972 (RA 2011)	100 kg/m ³ to 1000 kg/m ³
		Compressive Strength	IS 6441 (Part 5): 1972 (RA 2011)	1 N/mm ² to 10 N/mm ²
		Drying Shrinkage	IS 6441 (Part 2): 1972 (RA 2011)	0.01 % to 0.50 %
		Thermal Conductivity	IS 3346:1980 (RA 2017)	0.01 W/m.k to 0.50 W/m.k
3.	Burnt Clay Bricks/ Fly Ash Bricks/ Fly Ash Lime Bricks	Compressive strength	IS 3495 (Part 1): 1992 (RA 2011)	3.5 N/mm ² to 15.0 N/mm ²
		Efflorescence	IS 3495 (Part 3): 1992 (RA 2011)	Qualitative
		Water absorption	IS 3495 (Part 2): 1992 (RA 2011)	2 % to 25 %
		Dimensions		
		Length	IS 1077:1992 (RA 2011)	4500 mm to 4700 mm
		Width	IS 1077:1992 (RA 2011)	2100 mm to 2300 mm
		Height	IS 1077:1992 (RA 2011)	1300 mm to 1500 mm
4.	Cement (OPC& PPC)	Consistency	IS 4031 (Part 4): 1988 (RA 2009)	25 % to 40 %
		Initial Setting Time	IS 4031 (Part 5): 1988 (RA 2009)	5 minute to 250 minute

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		Final Setting time	IS 4031 (Part 5): 1988 (RA 2009)	30 minute to 700 minute
		Compressive strength	IS 4031 (Part 6): 1988 (RA 2009)	10 N/mm ² to 80 N/mm ²
		Soundness By Le-Chatelier method	IS 4031 (Part 3): 1988 (RA 2014)	0.05 mm to 10 mm
		Soundness By Autoclave method	IS 4031 (Part 3): 1988 (RA 2014)	0.01 % to 10 %
		Density/ Specific gravity	IS 4031 (Part 11): 1988 (RA 2009)	1 gm/cc to 5 gm/cc
		Fineness by Blaine air permeability	IS 4031 (Part 2): 1999 (RA 2008)	100 m ² /kg to 600 m ² /kg
5.	Fly Ash	Fineness (Specific Surface Blaine's)	IS 1727:1967 (RA 2008)	100 m ² /kg to 600 m ² /Kg
		Comparative compressive strength at 28 days	IS 1727:1967 (RA 2008)	20 % to 100 %
		Soundness (by Autoclave)	IS 1727:1967 (RA 2008)	0.01 % to 10 %
		Particle retained on 45 micron sieve (wet sieving)	IS 1727:1967 (RA 2008)	10 % to 70 %
6.	Pozzolonic Materials (Silica Fumes)	Compressive Strength at 7days as % of control sample	IS 1727:1967 (RA 2008)	50 % to 100 %
		Material retained on 45micron IS sieve	IS 1727:1967 (RA 2008)	1 % to 90 %