

Laboratory Swastik Analytical Laboratory, 85/1/B, Phase 1, GIDC Vatva, Ahmedabad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6141

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Validity 12.07.2018 to 11.07.2020

Last Amended on 26.09.2018

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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### CHEMICAL TESTING

I.	<b>DRUG &amp; PHARMACEUTICAL PRODUCTS</b>			
A.	<b>Pharmaceuticals Raw Materials</b>			
1.	<b>General Tests</b>	pH	IP 2014 (Page:169)	2 to 12
		Melting Point	IP 2014(Page: 164-166)	50°C to 300°C
		Loss on Drying	IP 2014 (Page:162-163)	0.05% to 5%
		Sulphated ash	IP 2014 (Page: 98)	0.05% to 10%
		Loss on ignition	IP 2014(Page: 163-164)	0.5% to 40%
		Water as Moisture content	IP2014 (Page:113-116)	0.2% to 15%
		Identification by IR	IP 2014 (Page:134-139)	Qualitative
2.	<b>Citric Acid</b>	Chloride	IP2014(Page:1410-1411)	Qualitative
3.	<b>Hydrochlorthiazide</b>		IP 2014(Page:1900-1901)	
4.	<b>Citric Acid</b>	Iron	IP 2014 (Page:1410-1411)	Qualitative
5.	<b>Dibasic calcium phosphate,</b>		IP2014 (Page: 1258-1259)	
6.	<b>Magnesium Hydroxide</b>		IP 2014 (Page: 2140)	
7.	<b>Magnesium oxide</b>		IP 2014(Page:2141-2143)	
8.	<b>Citric Acid</b>	Sulphate	IP 2014(Page:1410-1411)	Qualitative
9.	<b>Boric Acid</b>		IP 2014(1200)	
10.	<b>Aceclofenac</b>	Identification by UV	IP 2014(Page:981-982)	Qualitative
11.	<b>Alprazolam</b>		IP2014(Page:1015-1016)	
12.	<b>Cetirizine Hydrochloride</b>		IP 2014(Page:1339-1340)	
13.	<b>Amlodipine Besylate</b>		IP 2014(Page:1045-1046)	
14.	<b>Chlorpheniramine Maleate</b>		IP2014(Page:1375-1376)	
15.	<b>Dextromethorphan Hydrobromide</b>		IP 2014(Page:1537-1538)	

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16.	Levocetirizine Hydrochloride		IP2014(Page:2077-2078)	
17.	Metronidazole Benzoate		IP2014(Page:2216-2217)	
18.	Cefixime	Assay	IP 2014(Page: 1305-1306)	90% to 102%
19.	Cefotaxime sodium		IP 2014(Page: 1310-1311)	
20.	Ceftriaxone sodium		IP 2014(Page: 1323-1324)	
21.	Levocetirizine Hydrochloride		IP 2014(Page: 2077-2078)	
22.	Iso Propyl Alcohol	Related substance by GC	IP 2014(Page:2010-2011)	0.2% to 5%
23.	Menthol		IP 2014(Page:2172-2173)	
24.	Glycerin	Diethylene Glycol	IP 2014(Page:1869-1870)	0.0002% to 5.00%
		Ethylene Glycol	IP 2014(Page:1869-1870)	0.0002% to 5.00%
		RS	IP 2014(Page:1869-1870)	0.0002% to 5.00%
25.	Sorbitol	Assay	IP 2014(Page:2778-2779)	95% to 105%
		RS	IP 2014(Page:2778-2779)	0.02% to 5%
26.	Mannitol	Assay	IP 2014(Page: 2151-2153)	95% to 105%
27.	Sucralose	Assay	IP 2014(Page:2801-2802)	95% to 105%
28.	Topiramate	RS -sulphamic acid and sulphate	IP2014(Page:2893-2894),US P-38-2015(Page:5620-5621)	0.05% to 5%
		Assay	IP-2014	95% to 105%
29.	Amikacin Sulphate	Assay	IP-2014(Page:1027-1028), USP-38-2015(page:628-632)	95% to 105%
<b>B.</b>	<b>Formulation</b>			
1.	<b>General Tests (Tablets &amp; Capsules)</b>	Average weight	IP 2014	0.05 g to 2 g
		Uniformity of weight	IP2014(Page:256)	50 mg to 2 g
		Disintegration Time	IP 2014(Page:251-253)	30 sec to 180 min
		Average Fill	IP 2014	0.05 g to 10 g
		Uniformity of weight	IP 2014(Pag:256)	20 mg to 5 g
		Disintegration Time	IP 2014(Pag:251-253)	30 sec to 180 min
2.	<b>Tablets</b>			
a.	<b>Topiramate</b>	Assay	IP 2014(Page:2894-2895)	80% to 120%
b.	<b>Cefixime</b>	Assay	IP 2014(Page:1307-1308)	80% to 120%

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3.	<b>Injections</b>			
a.	Cefotaxime sodium injection ,	pH	IP 2014(Page:1311-1312)	1 to 12
4.	<b>Ceftriaxone sodium (Orals/injection/ Eye drops)</b>		IP 2014(Page:1324-1325)	
a.	Iron-Sucrose injection	Fe(II) & Fe (III)	STP/DP/5.4/063	0.02% to 1.0%
b.	Cefipime injection	RS - N methylpyrrolidine	STP/DP/5.4/064	0.05% to 5%
c.	Enoxaparin sodium injection	RS - free Sulphate	STP/DP/5.4/065	50 mg/kg to 2000 mg/kg
d.	Amikacin Sulphate injection	Assay	IP-2014 (Page:1028-1029), USP-38-2015(page:628-632)	90% to 110%
e.	Iron Sucrose Injection	Assay of Sucrose	USP-38 (2015)	260 mg/mL to 340 mg/mL
<b>C.</b>	<b>Residual Solvent (Raw Material &amp; Formulation)</b>			
1.	<b>Class I solvents</b>	Benzene	STP/DP/5.4/050	2 mg/kg to 50000 mg/kg
		Carbon tetrachloride		2 mg/kg to 50000 mg/kg
		1,2-Dichloroethane		2 mg/kg to 50000 mg/kg
		1,1-Dichloroethene		2 mg/kg to 50000 mg/kg
		1,1,1-Trichloroethane		2 mg/kg to 50000 mg/kg
2.	<b>Class II solvents</b>	Acetonitrile	STP/DP/5.4/050	2 mg/kg to 50000 mg/kg
		Chlorobenzene		2 mg/kg to 50000 mg/kg
		Chloroform		2 mg/kg to 50000 mg/kg
		Cumene		2 mg/kg to 50000 mg/kg
		Cyclohexane		2 mg/kg to 50000 mg/kg
		1,2-Dichloroethene		2 mg/kg to 50000 mg/kg
		Dichloromethane		2 mg/kg to 50000 mg/kg
		1,2-Dimethoxy ethane	STP/DP/5.4/050	2 mg/kg to 50000 mg/kg
		N,N-Dimethylacetamide		2 mg/kg to 50000 mg/kg
		N,N-Dimethylformamide		2 mg/kg to 50000 mg/kg
		1,4-Dioxane		2 mg/kg to 50000 mg/kg
		2-Ethoxyethanol		2 mg/kg to 50000 mg/kg
		Ethylene glycol		2 mg/kg to 50000 mg/kg

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		Formamide	STP/DP/5.4/050	2 mg/kg to 50000 mg/kg
		Hexane		2 mg/kg to 50000 mg/kg
		Methanol		2 mg/kg to 50000 mg/kg
		2-Methoxyethanol		2 mg/kg to 50000 mg/kg
		Methylbutyl ketone		2 mg/kg to 50000 mg/kg
		Methylcyclohexane		2 mg/kg to 50000 mg/kg
		Methylisobutylketone		2 mg/kg to 50000 mg/kg
		N-Methylpyrrolidone		2 mg/kg to 50000 mg/kg
		Nitromethane		2 mg/kg to 50000 mg/kg
		Pyridine		2 mg/kg to 50000 mg/kg
		Sulfolane	STP/DP/5.4/050	2 mg/kg to 50000 mg/kg
		Tetrahydrofuran		2 mg/kg to 50000 mg/kg
		Tetralin		2 mg/kg to 50000 mg/kg
		Toluene		2 mg/kg to 50000 mg/kg
		1,1,2-Trichloroethene		2 mg/kg to 50000 mg/kg
		Nitrobenzene		2 mg/kg to 50000 mg/kg
		2 hexanone		2 mg/kg to 50000 mg/kg
		O-Xylene		2 mg/kg to 50000 mg/kg
3.	<b>Class III solvents</b>	Acetic acid	STP/DP/5.4/050	2 mg/kg to 50000 mg/kg
		Acetone		2 mg/kg to 50000 mg/kg
		Anisole		2 mg/kg to 50000 mg/kg
		1-Butanol		2 mg/kg to 50000 mg/kg
		2-Butanol		2 mg/kg to 50000 mg/kg
		Butyl acetate		2 mg/kg to 90000 mg/kg
		tert-Butylmethyl ether		2 mg/kg to 50000 mg/kg
		Dimethyl sulfoxide		2 mg/kg to 50000 mg/kg
		Ethanol		2 mg/kg to 50000 mg/kg
		Ethyl acetate		2 mg/kg to 50000 mg/kg
		Ethyl ether		2 mg/kg to 50000 mg/kg
		Ethyl formate		2 mg/kg to 50000 mg/kg
		Formic acid		2 mg/kg to 90000 mg/kg
		Heptane		2 mg/kg to 50000 mg/kg
		Isobutyl acetate		2 mg/kg to 50000 mg/kg
		Isopropyl acetate		2 mg/kg to 90000 mg/kg

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		Methyl acetate		2 mg/kg to 50000 mg/kg
		3-Methyl-1-butanol		2 mg/kg to 125000 mg/kg
		Methylethyl ketone		2 mg/kg to 50000 mg/kg
		2-Methyl-1-propanol		2 mg/kg to 50000 mg/kg
		Pentane		2 mg/kg to 50000 mg/kg
		1-Pentanol		2 mg/kg to 50000 mg/kg
		1-Propanol		2 mg/kg to 50000 mg/kg
		2-Propanol		2 mg/kg to 90000 mg/kg
		Propyl acetate		2 mg/kg to 50000 mg/kg
		Triethylamine		2 mg/kg to 90000 mg/kg
<b>D.</b>	<b>Heavy metals &amp; Toxic metals Analysis</b>			
<b>1.</b>	<b>Raw Materials &amp; Formulation</b>	Cr	STP/DP/5.4/057 ICP-MS	(0.1 to 10000) mcg/kg
		Cd		(0.1 to 10000) mcg/kg
		Pb		(0.1 to 10000) mcg/kg
		As		(0.1 to 10000) mcg/kg
		Hg		0.1 mg/kg to 1000 mg/kg
		Co		(0.1 to 10000) mcg/kg
		V		(0.1 to 10000) mcg/kg
		Ni		(0.1 to 10000) mcg/kg
		Ti		(0.1 to 10000) mcg/kg
		Au		0.1 mg/kg to 1000 mg/kg
		Pd		0.1 mg/kg to 1000 mg/kg
		Ir		0.1 mg/kg to 1000 mg/kg
		Os		0.1 mg/kg to 1000 mg/kg
		Rh		0.1 mg/kg to 1000 mg/kg
		Ru		0.1 mg/kg to 1000 mg/kg
		Se		(0.1 to 10000) mcg/kg
		Ag		(0.1 to 10000) mcg/kg
		Pt		0.1 mg/kg to 1000 mg/kg
		Li		0.1 mg/kg to 1000 mg/kg
		Sb		(0.1 to 10000) mcg/kg
		Ba		(0.1 to 10000) mcg/kg
		Mo		0.1 mg/kg to 1000 mg/kg

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		Cu		(0.1 to 10000) mcg/kg
		Sn		0.1 mg/kg to 1000 mg/kg
<b>ii.</b>	<b>FOOD &amp; AGRICULTURAL PRODUCTS</b>			
<b>1.</b>	<b>Coriander Whole, Cumin Seed, Turmeric whole, Chilli Whole</b>	Moisture%	IS 1797-2009	0.5% to 15%
<b>2.</b>	<b>Coriander Whole</b>	Coriander Splits	IS 2443-2008	(0.5 to 10) g/100 g
		Damaged, Discolored & Shriveled Seed	IS 2443-2008	(0.5 to 10) g/100 g
		Foreign Matter	IS 2443-2008	(0.5 to 10) g/100 g
		Weevilled Seed	IS 2443-2008	(0.1 to 5) g/100 g
<b>3.</b>	<b>Cumin Seed whole</b>	Foreign Matter/ Edible Seeds(Other Than Cumin)	IS 2447-2010	(0.1 to 5) g/100 g
		Edible seed other than Cumin	IS 2447-2010	(0.05 to 5) g/100 g
<b>4.</b>	<b>Turmeric Whole</b>	Fingers That Are Broken/Those Less Than 15mm	IS 3576-2010	0.5 mm to 100 mm
		Extraneous Matter	IS 1797-2009	(0.1 to 15) g/100 g
		Defective Rhizomes (Damage Due To Moisture and Over Boiling)	IS 3576-2010	(0.1 to 15) g/100 g
<b>5.</b>	<b>Chilli Whole</b>	Foreign Matter	IS 1797-2009	(0.1 to 10) g/100 g
		Broken Chillies	IS 2322-1998 (RA 2003)	(0.1 to 40) g/100 g
		Damaged & Discolored pods, Pods without stalks	IS 2322-1998 (RA 2003)	(0.1 to 50) g/100 g
		Loose seeds	IS 2322-1998 (RA 2003)	(0.1 to 50) g/100 g

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		Length of Chili Whole	IS 2322-1998 (RA 2003)	20 mm to 150 mm
6.	<b>Chilli Powder/Coriander Powder/Turmeric Powder/Dehydrated Onion &amp; Garlic powder</b>	Total Ash (Dry Basis)	IS 1797- 1985 (RA 2009)	(0.1 to 10) g/100 g
		Acid Insoluble Ash (Dry Basis)	IS 1797-1985 (RA 2009)	(0.02 to 2.0) g/100 g
		Crude Fiber (Dry Basis)	IS 1797-1985 (RA 2009)	(1 to 50) g/100 g
7.	<b>Milk &amp; Milk product and Infant Food &amp; milk Powder</b>	Ca	AOAC(2015.06) 2016	1.25 mg/kg to 7000 mg/kg
		Cu	AOAC (2015.06) 2016	01 mcg/kg to 2000 mcg/kg
		Fe	AOAC (2015.06) 2016	(1.25 to 200) mg/100g
		Mn	AOAC (2015.06) 2016	0.1 mg/kg to 200 mg/kg
		Mg	AOAC (2015.06) 2016	1.25 mg/kg to 5000 mg/kg
		K	AOAC (2015.06) 2016	1.25mg/kg to 15000 mg/kg
		P	AOAC (2015.06) 2016	1.25 mg/kg to 5000 mg/kg
		Na	AOAC (2015.06) 2016	1.25mg/kg to 10000 mg/kg
		Zn	AOAC (2015.06) 2016	1.25 mg/kg to 500 mg/kg
				Formalin
		Hydrogen Peroxide	FSSAI LAB MANUAL 1-2015 (Page:28-29)	Qualitative (Color Test)
		Gelatin	FSSAI LAB MANUAL 1-2015 (Page: 26-27)	Qualitative (Present/Absent)
		Milk Fat	FSSAI LAB MANUAL 1-2015	0.1% to 15%
		Casein In Protein	FSSAI LAB MANUAL 1-2015 (Page: 135)	0.1% to 25%
8.	<b>Carbohydrates in Fruit Juices and Soft Drinks and Beverages</b>	Moisture	FSSAI MANUAL 1-2015	0.5% to 65%
		Sorbitol	STP/FA/5.4/032	0.25% to 30%
		Glucose	ISSUE NO:01	0.25% to 30%
		Fructose	Issue Date:20.01.17	0.25% to 30%
		Lactose		0.25% to 30%
		Sucrose		0.25% to 30%
		Maltose		0.25% to 30%
		Mannitol		0.25% to 30%

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		Galactose		0.25% to 30%
9.	Metals in Cereal & Cereal products	Cu	AOAC (2015.06) 2016	0.01 mg/kg to 2.0 mg/kg
		Zn	AOAC (2015.06) 2016	1.25 mg/kg to 500 mg/kg
10.	Food additives in Canned and Processed food	Benzoic acid, Sorbic acid, Methyl Parabens	FSSAI LAB MANUAL -8-2015 (Page: 20-23)	1 mg/kg to 200 mg/kg
		Acetic acid Propionic acid	FSSAI LAB MANUAL-8-2015 (Page:34-36)	1 mg/kg to 200 mg/kg
11.	Fruit Juices & Soft Drinks	a) Caffeine b) Benzoate	FSSAI LAB MANUAL-8 -2015 (Page:72-78)	(0.1 to 1000) mg/100mL
III.	<b>RESIDUE IN FOOD PRODUCTS</b>			
1.	Residue in Milk & Milk product and Infant Food & milk Powder	As	AOAC (2015.01) 2015	0.01mcg/kg to 500 mcg/kg
		Pb	AOAC (2015.01) 2015	(0.01 to 1000) mcg/kg
		Hg	AOAC (2015.01) 2015	0.01 mg/kg to 100 mg/kg
		Cd	AOAC (2015.01) 2015	0.01mcg/kg to 100 mcg/kg
		Se	AOAC (2015.06) 2016	0.1 mcg/kg to 200 mcg/kg
2.	Residue in Fruit Juices and Soft Drinks and Beverages	Arsenic	AOAC (2015.01), 2015	0.01mcg/kg to 500 mcg/kg
		Cadmium	AOAC (2015.01), 2015	0.01mcg/kg to 100 mcg/kg
		Copper	AOAC (2015.06) 2016	01 mcg/kg to 2000 mcg/kg
		Zinc	AOAC (2015.06) 2016	0.1 mg/kg to 500 mg/kg
		Lead	AOAC (2015.01) 2015	(0.01 to 1000) mcg/kg
3.	Residue in Cereal & Cereal Products	Hg	AOAC (2015.01)'15	0.01 mg/kg to 100 mg/kg
		Pb	AOAC (2015.01) 2015	(0.01 to 1000) mcg/kg
		As	AOAC (2015.01) 2015	0.01mcg/kg to 500 mcg/kg
		Cd	AOAC (2015.01) 2015	0.01mcg/kg to 100 mcg/kg
		Hg	AOAC (2015.01) 2015	0.01 mg/kg to 100 mg/kg
IV.	<b>NUTRACEUTICAL PRODUCTS</b>			
1.	Amino acid	L- histidine	STP/FA/5.4/040	(10 to 100000) mg/100g
		L-isoleucin	ISSUE NO:01	
		L-leucine	Issue Date: 20.01.17	
		L-lysine	IC	
		L-methionine		



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		L-cysteine		
		L-methionine+ cysteine		
		L-threonine		
		L-phenylalanine		
		L-tyrosine		
		L-tryptophan		
		L-valine		
2.	<b>Carbohydrates</b>	Sorbitol	STP/FA/5.4/033	0.25% to 30%
		Glucose	ISSUE NO:01	
		Fructose	Issue date: 20.01.17	
		Lactose	IC	
		Sucrose		
		Maltose		
		Mannitol		
		Galactose		
3.	<b>Minerals &amp; Metal</b>	Na	AOAC (2015.06) 2016	1.25mg/kg to 10000 mg/kg
		Mg	AOAC (2015.06) 2016	1.25 mg/kg to 5000mg/kg
		P	AOAC (2015.06) 2016	1.25 mg/kg to 5000mg/kg
		K	AOAC (2015.06) 2016	1.25mg/kg to 15000 mg/kg
		Ca	AOAC (2015.06) 2016	1.25 mg/kg to 7000 mg/kg
		Cr	AOAC (2015.06) 2016	(0.1 to 10000) mcg/kg
		Mn	AOAC (2015.06) 2016	0.1 mg/kg to 200 mg/kg
		Fe	AOAC (2015.06) 2016	(1.25 to 200)mg/100g
		Co	STP/FA/5.4/046; ISSUE NO:01 Issue date:14.08.17	(0.1 to 10,000) mcg/kg
		Zn	AOAC (2015.06) 2016	1.25 mg/kg to 500 mg/kg
		Se	AOAC (2015.06) 2016	0.1 mcg/kg to 200 mcg/kg
		Mo	AOAC (2015.06) 2016	0.01 mg/kg to 100 mg/kg
		Pb	AOAC (2015.01) 2015	(0.01 to 1000) mcg/kg
		Cu	AOAC (2015.06) 2016	01 mcg/kg to 2000mcg/kg
		As	AOAC (2015.01) 2015	0.01mcg/kg to 500 mcg/kg
		Cd	AOAC (2015.01) 2015	0.01mcg/kg to 100 mcg/kg
		Hg	AOAC (2015.01) 2015	0.01 mg/kg to 100 mg/kg

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4.	Vitamins	VITAMIN A	STP/FA/5.4/041 ISSUE NO:01 Issue Date :20.01.17	(7000 to 1.5) Lakh IU/100g
		Vitamin C	STP/FA/5.4/042 ISSUE NO:01 Issue Date:20.01.17	(50 to 1000) mg/100g
		Riboflavin (B2)	STP/FA/5.4/028	(0.5 to 100) mg/100g
		Thiamine (B1)	STP/FA/5.4/028	(0.5 to 100) mg/100g
		Vitamin B6	STP/FA/5.4/028	(0.5 to 100) mg/100g
V.	<b>ANIMAL FEED &amp; FOOD</b>			
1.	Animal Feed	Moisture/Dry matter	AOAC 930.15-2005	1% to 25%
		Crude ash/Total Ash	AOAC 942.05-2008	1% to 10%
		Phosphorous	IS 7874 Part 2	(0.05 to 5) g/100g
		Calcium	IS 13433 (Part1/2)	(0.05 to 10) g/100g
		Crude Fat	FAO Manual 2011 (Part-II Analytical Procedure Page:96-98)	0.1% to 10%
		Crude Fiber	FAO Manual 2011 (Part-II Analytical Procedure Page:98-101)	1% to 30%
		Arsenic	AOAC(2015.01) 2015	0.01mcg/kg to 500 mcg/kg
		cadmium	AOAC(2015.01) 2015	0.01mcg/kg to 100 mcg/kg
		Calcium	AOAC(2015.06) 2016	50 mg/kg to 7000 mg/kg
		Chloride	FAO 2011 (PART-II Analytical Procedure Page:134-137)	(0.1 to 500) mg/100g
		Chromium	AOAC(2015.06) 2016	(0.1 to 10000) mcg/kg
		Cobalt	STP/FA/5.4/046; Issue No:01 Issue date:14.08.17	0.1mcg/kg to 10000mcg/kg
		Molybdenum	AOAC(2015.06) 2016,	(0.1 to 500) mg/100g
		Copper	AOAC(2015.06) 2016,	0.1mcg/kg to 2000mcg/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
		Iron	AOAC(2015.06) 2016,	(1.25 to 200) mg/100g
		Lead	AOAC(2015.01) 2015	(0.01 to 1000) mcg/kg
		Magnesium	AOAC(2015.06) 2016,	1.25 to 5000mg/kg
		Manganese	AOAC(2015.06) 2016	0.1 mg/kg to 200 mg/kg
		Phosphorus	AOAC(2015.06) 2016,	1.25 mg/kg to 5000mg/kg
		Potassium	AOAC(2015.06) 2016,	1.25mg/kg to 15000 mg/kg
		Selenium	AOAC(2015.06) 2016,	0.1 mcg/kg to 200 mcg/kg
		Sodium	AOAC(2015.06) 2016,	1.25mg/kg to 10000 mg/kg
		Zinc	AOAC(2015.06) 2016	1.25 mg/kg to 500 mg/kg
<b>VI.</b>	<b>POLLUTION &amp; ENVIRONMENT</b>			
<b>1.</b>	<b>Waste Water (Effluents/Sewage)</b>	pH	APHA (23rd Edn.-2017) (4500-H <sup>+</sup> )	2 to 12
		Turbidity	IS 3025 Part 10-(2006),APHA (23rd Edn.-2017) 2130B	0.1 NTU to 1000NTU
		Total alkalinity as calcium carbonate,	IS 3025 (Part 23) (2003)/APHA (23rd Edn.-2017) 2320	1 mg/L to 2000 mg/L
		Total hardness (as CaCo <sub>3</sub> )	IS 3025 (Part 21) 2009/APHA (23rd Edn.-2017) 2340	1 mg/L to 50000 mg/L
		Total dissolved solids,	IS 3025 Part 16 (Ref 2006)/APHA (23rd Edn.-2017) 2540C	1 mg/L to 90000 mg/L
		Calcium	IS 3025 PART 40 (2009)	1 mg/L to 1000 mg/L
		Magnesium	IS 3025 PART 46 (2009)	1 mg/L to 1000 mg/L
		Zinc	APHA 3120 B/3125 (23rd edn-2017)	0.005 mg/L to 100 mg/L
		Iron	APHA 3120 B/3125 (23rd edn-2017)	0.01 mg/L to 100mg/L
		Lead	APHA 3500/3125 (23rd edn-2017)	0.005 mg/L to 100 mg/L
		Cobalt	APHA 3120 B/3125 (23rd edn-2017)	0.1 mg/L to 1000 mg/L

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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
		Chloride	IS 3025 (PART-32) (2009) APHA 4500 Cl-D (23rd edn-2017)	1 mg/L to 10000 mg/L
		Fluoride	APHA 4110B Cl-D (23rd edn-2017)	0.4 mg/L to 50 mg/L
		Arsenic	APHA 3120 B/3125 (23rd edn-2017)	0.1 to 500 mg/L
		Cadmium	APHA 3500/3125 (23rd edn-2017)	0.005 mg/L to 25 mg/L
		Chromium	APHA 3120 B/3125 (23rd edn-2017)3500-Cr-C	0.1 mg/L to 5000 mg/L
		Copper	APHA 3500/3125 (23rd edn-2017)	0.001 mg/L to 2000 mg/L
		Mercury	APHA 3500/3125 (23rd edn-2017)	0.005 mg/L to 5 mg/L
		Selenium	APHA 3120 B/3125 (23rd edn-2017)	0.005 mg/L to 50 mg/L
		Boron	APHA 3120 B/3125 (23rd edn-2017)	0.001 mg/L to 20 mg/L
		potassium	APHA 3120 B/3125 (23rd edn-2017)	1 mg/L to 15000 mg/L
		Manganese	APHA 3120 B/3125 (23rd edn-2017)	0.005 mg/L to 50 mg/L
		Phosphorus	APHA 3120 B/3125 (23rd edn-2017)- 4500 C	1 mg/L to 5000mg/L
		Sodium	APHA 3120 B/3125 (23rd edn-2017)	1 mg/L to 10000 mg/L
		Aluminum(as Al)	APHA (23rd Edn.-2017) 3120 B/3125 , IS 3025 Part 55 (2003)	0.005 mg/L to 5 mg/L 5 mg/L to 100 mg/L
		Barium (as Ba)	APHA (23 <sup>rd</sup> Edn.-2017), 3120 B/3125 , annex f of IS 13428 or IS 15302-2005	0.1 mg/L to 5 mg/L 5 mg/L to 100 mg/L
		Nitrate (as NO <sub>3</sub> )	APHA (23rd Edn.-2017) 4110, IS 3025 Part34-2009	1 mg/L to 2000 mg/L

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		Silver (as Ag)	APHA(23 <sup>rd</sup> Edn-2017) 3120 B/3125	0.01 mg/L to 100 mg/L
		Sulphate (as SO <sub>4</sub> )	APHA (23 <sup>rd</sup> Edn-2017) 4110 , IS 3025 Part 24-2009	10 mg/L to 10000mg/L
		pH	ISO :10390 (2005)	2 to 12
2.	<b>Wastes (Liquid/Slurry/ Sludge/Solid/ Semi-Solid)/Soil/ Sediments</b>	Electrical Conductivity	IS 14767 (2000)	10 µs/cm to 2000 µs/cm
		Moisture	ASTM D-2216-10-2016	(5 to 35) g/100 g
		Calcium	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	1 mg/kg to 1000 mg/kg
		Magnesium	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	1 mg/kg to 4000 mg/kg
		Zinc	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	0.1 mg/kg to 1000 mg/kg
		Iron	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	5000mg/kg to 30000mg/kg
		Lead	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	0.1 mg/kg to 1000 mg/kg
		Cobalt	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	0.1 mg/kg to 1000 mg/kg
		Chloride	EPA 9056-2000,	15 mg/kg to 500 mg/kg
		Fluoride	EPA 9056-2000,	10 mg/kg to 100mg/kg
		Arsenic	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	0.1 mg/kg to 500 mg/kg
		Cadmium	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	0.1 mg/kg to 100 mg/kg

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		Chromium	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	0.1 mg/kg to 5000 mg/kg
		Copper	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	1 mg/kg to 1000 mg/kg
		Mercury	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	0.1 mg/kg to 100 mg/kg
		Selenium	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	0.1 mg/kg to 500 mg/kg
		Boron	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	1 mg/kg to 100 mg/kg
		Potassium	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	1 mg/kg to 15000 mg/kg
		Manganese	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	1 mg/kg to 500 mg/kg
		Phosphorus	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	1 mg/kg to 5000mg/kg
		Sodium	EPA-6020A-1998, EPA-3052-1996 EPA-3050B-1996	1 mg/kg to 10000 mg/kg
<b>VII.</b>	<b>WATER</b>			
1.	Surface Water, Ground Water, Drinking Water, Construction Water, Swimming Pool	pH	APHA (23rd Edn.-2017) 4500-H+ B,	2 to 12
		Turbidity	IS 3025 Part 10, APHA (23rd Edn.-2017) 2130,	0.1 NTU to 100 NTU

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	<b>Water, Industrial Water, Industrial water Irrigation water, Water from purifiers, bore water, tap water, Boiler water</b>	Total alkalinity as calcium carbonate	IS 3025 (Part 23) (2003)/APHA (23rd Edn.-2017) 2320	1 mg/L to 1000 mg/L
		Total hardness (as CaCo <sub>3</sub> )	IS 3025 (Part 21) (2006)/APHA (23rd Edn.2017) 2340	1 mg/L to 1000 mg/L
		Total dissolved solids	IS 3025 Part 16 (2006)/ APHA (23rd Edn.2017) 2540C	1 mg/L to 3000 mg/L
		Chloride (as Cl)	IS 3025(Part 32) (2003), APHA (23 <sup>rd</sup> Edn.-2017) 4500 Cl- D,	1 mg/L to 2000 mg/L
		Fluoride (as F)	APHA (23rd Edn.-2017)4110B,	0.4 mg/L to 4 mg/L
		Nitrate (as NO <sub>3</sub> )	APHA (23rd Edn.-2017) 4110	1 mg/L to 200 mg/L
		Sulphate (as SO <sub>4</sub> )	APHA (23rd Edn.-2017)4110	1 mg/L to 250 mg/L
<b>VIII.</b>	<b>RESIDUES IN WATER</b>			
<b>1.</b>	<b>Surface Water, Ground Water, Drinking Water, Construction Water, Swimming Pool Water, Industrial water Irrigation water, Water from purifiers, bore water, tap water, Boiler water</b>	Aluminum(as Al)	APHA (23rd Edn.-2017) 3120 B/3125	0.005 mg/L to 0.5 mg/L
		Barium (as Ba)	APHA (23rd Edn.-2017)3120 B/3125	0.001 mg/L to 1 mg/L
		Boron (as B)	APHA (23rd Edn.-2017)3120 B/3125	0.001 mg/L to 2 mg/L
		Calcium (as Ca)	IS 3025 PART-40 (2009)	1 mg/L to 500 mg/L
		Copper (as Cu)	APHA (23rd Edn.-2017) 3120 B/3125	0.001 mg/L to 2 mg/L
		Iron (as Fe)	APHA (23rd Edn.-2017)3120 B/3125	0.01 mg/L to 100mg/L
		Magnesium (as Mg)	IS 3025 (PART 46)	1 mg/L to 250 mg/L
		Manganese(as Mn)	APHA (23rd Edn.-2017) 3120 B/3125	0.005 mg/L to 0.5 mg/L
		Selenium (as Se)	APHA (23rd Edn.-2017)3120 B/3125	0.005 mg/L to 0.1 mg/L

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		Silver (as Ag)	APHA (23rd Edn.-2017)3120 B/3125	0.005 mg/L to 0.5 mg/L
		Zinc (as Zn)	APHA 3120 B/3125 (23rd Edn-2017.)	0.005 mg/L to 5 mg/L
		Cadmium	APHA (23rd Edn.-2017) 3500/3125	0.005 mg/L to 0.2 mg/L
		Lead	APHA (23rd Edn.-2017) 3500/3125	0.005 mg/L to 0.1 mg/L
		Mercury (as Hg)	APHA (23rd Edn.-2017) 3500/3125	0.005 mg/L to 0.1 mg/L
		Molybdenum (as Mo)	APHA (23rd Edn.-2017) 3500/3125	0.005 mg/L to 0.1 mg/L
		Nickle (as Ni)	APHA (23rd Edn.-2017) 3500/3125	0.005 mg/L to 0.1 mg/L
<b>IX.</b>	<b>ORES &amp; MINERALS</b>	Moisture	IS 1760 (Part 1)-1991 (RA 2001)	0.2% to 5.0%
<b>1.</b>		Moisture	IS 1760 (Part 1)-1991 (RA 2001)	0.2% to 5.0%
		Loss on ignition (LOI)	IS 1760 (Part 1)-1991 (RA 2001)	5.0% to 45%
<b>2.</b>	<b>Bauxite</b>	Moisture	IS 2000 (Part 1)-1985 (RA 2001)	0.20% to 15.0%
		Loss on ignition (LOI)	IS 2000 (Part 1)-1985 (RA 2001)	0.5% to 30%
<b>3.</b>	<b>Iron Ore</b>	Moisture	IS 1493 (Part 1)-1959 (RA 2001)	0.20% to 10%
		Loss on ignition (LOI)	IS 4032- 1985 (RA 2001)	0.5% to 15%