(AMENDMENT NO.1 JANUARY 1993)
TO
INDIAN STANDARDS: DRINKING WATER – SPECIFICATIONS (FIRST REVISION)
IS 10500 : 1991

S.No.	Substance or Characteristic	Requirement (Desirable Limit)	Undesirable effect – outside the desirable limit	Permissible limit in the absence of alternate source	Methods of test (Ref. to IS)	Remarks
1	2	3	4	5	6	7
Essential characteristics:						
1.	Colour, Hazen units, Max.	5	Above 5 consumer acceptance decreases	25	3025 (Part 4) 1983	Extended to 25 only if toxic substances are not suspected in the absence of alternate source
2.	Odour	Unobjectionable	--	--	3025 (Part 5) 1983	a. Test cold and when heated. b. Test at several dilutions.
3.	Taste	Agreeable	--	--	3025 (Part 7 & 8) 1984	Test to be conducted only after safety has been established.
4.	Turbidity, NTU, Max.	5	Above 5 consumer acceptance decreases	10	3025 (Part 10) 1984	--
5.	PH value	6.5– 8.5	Beyond this range the water will affect the mucous membrane and / or water supply system	No relaxation	3025 (Part 11) 1984	--
6.	Total Hardness (as $CaCO_3$) mg/L, Max.	300	Encrustation in water supply structure and adverse effects on domestic use.	600	3025 (Part 21) 1983	--
7.	Iron as Fe, mg/L, Max.	0.3	Beyond this limit taste / appearance are affected, has adverse effect on domestic uses and water supply structures and promotes iron bacteria	1	32 of 3025, 1964	--
8.	Chlorides as Cl^-, mg/L, Max.	250	Beyond this limit, taste, corrosion and palatability are affected	1000	3025 (Part 32) 1988	--

S.No.	Substance or Characteristic	Requirement (Desirable Limit)	Undesirable effect – outside the desirable limit	Permissible limit in the absence of alternate source	Methods of test (Ref. to IS)	Remarks
1	2	3	4	5	6	7
9.	Residual free chlorine, mg/L	0.2	--	--	3025 (Part 26) 1986	To be applicable only when water is chlorinated. Tested at consumer end. When protection against viral infection required, it should be minimum 0.5mg/L
10.	Fluoride as F^-, mg/L, Max.	1.0	Fluoride may be kept as low as possible. High fluoride may cause fluorosis.	1.5	23 of 3025 1964	--
Desirable characteristics:						
11.	Dissolved solids, mg/L, Max.	500	Beyond this palatability decreases and may cause gastro intestinal irritation	2000	3025 (Part 16) 1984	--
12.	Calcium as Ca^{+2}, mg/L, Max.	75	Encrustation in water supply structure and adverse effect on domestic use	200	3025 (Part 40) 1991	--
13.	Magnesium as Mg^{+2}, mg/L, Max.	30	Encrustation in water supply structure and adverse effect on domestic use	100	16, 33, 34 of IS 3025: 1964	--
14.	Copper as Cu, mg/L, Max.	0.05	Astringent taste, discolouration and corrosion of pipes fitting and utensils will be caused beyond this	1.5	36 of 3025: 1964	--
15.	Manganese as Mn, mg/L, Max.	0.1	Beyond this limit taste / appearance are affected, has adverse effect on domestic uses and water supply structures and promotes iron bacteria	0.3	35 of 3025: 1964	--

S.No.	Substance or Characteristic	Requirement (Desirable Limit)	Undesirable effect – outside the desirable limit	Permissible limit in the absence of alternate source	Methods of test (Ref. to IS)	Remarks
1	2	3	4	5	6	7
16.	Sulphate as SO_4^{-2} mg/L, Max.	200	Beyond this causes gastro intestinal irritation when magnesium or sodium are present	400 (see Col.7)	3025 (Part 24) 1986	May be extended upto 400 provided Magnesium as Mg^{+2} does not exceed 30
17.	Nitrate as NO_3^- mg/L, Max.	45	Beyond this methaemoglobinemia takes place	100	3025 (Part 34) 1988	--
18.	Phenolic compounds as C_6H_5OH, mg/L, Max.	0.001	Beyond this, it may cause objectionable taste and odour	0.002	54 of 3025, 1964	--
19.	Mercury as Hg, mg/L, Max.	0.001	Beyond this, the water becomes toxic	No relaxation	(see note) Mercury ion analyzer	To be tested when pollution is suspected
20.	Cadmium as Cd, mg/L, Max.	0.01	Beyond this, the water becomes toxic	No relaxation	(See note)	To be tested when pollution is suspected
21.	Selenium as Se, mg/L, Max.	0.01	Beyond this, the water becomes toxic	No relaxation	28 of 3025: 1964	To be tested when pollution is suspected
22.	Arsenic as As, mg/L, Max.	0.05	Beyond this, the water becomes toxic	No relaxation	3025 (Part 37): 1988	To be tested when pollution is suspected.
23.	Cyanide as CN, mg/L, Max.	0.05	Beyond this limit, the water becomes toxic	No relaxation	3025 (Part 27): 1986	To be tested when pollution is suspected.
24.	Lead as Pb, mg/L, Max.	0.05	Beyond this limit, the water becomes toxic	No relaxation	(See note)	To be tested when pollution is suspected.
25.	Zinc as Zn, mg/L, Max.	5	Beyond this limit it can cause astringent taste and an opalescence in water	15	39 of 3025: 1964	To be tested when pollution is suspected.
26.	Anionic detergents as MBAS, mg/L, Max.	0.2	Beyond this limit it can cause a light froth in water	1.0	Methylene blue extraction method	To be tested when pollution is suspected.
27.	Chromium as Cr^{6+}, mg/L, Max.	0.05	May be carcinogenic above this limit	No relaxation	38 of 3025: 1964	To be tested when pollution is suspected.

S.No.	Substance or Characteristic	Requirement (Desirable Limit)	Undesirable effect – outside the desirable limit	Permissible limit in the absence of alternate source	Methods of test (Ref. to IS)	Remarks
1	2	3	4	5	6	7
28.	Polynuclear aromatic hydrocarbons as PAH, mg/L, Max.	--	May be carcinogenic	--	--	--
29.	Mineral oil, mg/L, Max.	0.01	Beyond this limit undesirable taste and odor after chlorination take place	0.03	Gas chromatographic method	To be tested when pollution is suspected.
30.	Pesticides, mg/L, Max.	Absent	Toxic	0.001	--	--
31.	Radioactive materials a. Alpha emitters Bq/L, Max. b. Beta emitters pci/L, Max.	 -- --	 -- --	 0.1 1	58 of 3025: 1964	--
32.	Alkalinity, mg/L, Max.	200	Beyond this limit taste becomes unpleasant	600	13 of 3025: 1964	--
33.	Aluminium as Al mg/L, Max.	0.03	Cumulative effect is reported to cause dementia	0.2	31 of 3025: 1964	--
34.	Boron as B, mg/L, Max.	1	--	5	29 of 3025: 1964	--

Note: Atomic Absorption Spectrophotometric method may be used.