

Collection and Preservation of Samples

Sr. No.	Determination	Container	Minimum Sample size (ml)	Sample Type	Preservations	Maximum Recommended Storage	Regulatory
1	Acidity	P, G(B), FP	100	G	Cool $\leq 6^{\circ}\text{C}$	24 h	14 d
2	Alkalinity	P, G, FP	200	G	Cool $\leq 6^{\circ}\text{C}$	24 h	14 d
3	BOD	P, G, FP	1000	G, C	Cool $\leq 6^{\circ}\text{C}$	6 h	48 h
4	Boron	F, P(PTFE) or quartz	1000	G, C	HNO_3 to pH <2	28 d	6 months
5	Bromide	P, G, FP	100	G, C	None required	28 d	28 d
6	Carbon, total organic	G(B), P, FP	100	G,C	Analyze immediately; or cool $\leq 6^{\circ}\text{C}$, and add HCl, H_3PO_4 , H_2SO_4 to pH	7 d	28 d
7	Carbon Dioxide	G, P	100	G	Analyze immediately	0.25 h	N.S.
8	COD	P, G, FP	100	G, C	Analyze immediately; or add H_2SO_4 to pH <2; cool, $\leq 6^{\circ}\text{C}$	7 d	28 d
9	Chloride	P, G, FP	500	G, C	None required	N.S.	28 d
10	Chlorine, Total, Residual	G, P	500	G	Analyze immediately	0.25 h	0.25 h
11	Chlorine Dioxide	G, P	500	G	Analyze immediately;	0.25 h	N.S.
12	Chlorophyll	G, P	500	G	Unfiltered, dark, 4°C filtered, dark, -20°C (do not store in frost-free freezer)	24-48 h 28 d	N.S.
13	Colour	P, G, FP	500	G, C	Cool $\leq 6^{\circ}\text{C}$	48 h	48 h
14	Specific Conductance	P, G, FP	500	G, C	Cool $\leq 6^{\circ}\text{C}$	28 d	28 d
15	Cyanide Total	P, G, FP	1000	G, C	Analyze within 15 min. add NaOH to pH >12 if sample is to be stored, cool, $\leq 6^{\circ}\text{C}$, in dark. Add thiosulphate if residual chlorine present.	24 h	14 d, 24 h if sulphide present
16	Amenable to chlorination	P, G, FP	1000	G, C	Remove residual chlorine with thiosulphate and cool $\leq 6^{\circ}\text{C}$	stat	14 d, 24 h if sulphide present
17	Fluoride	P	100	G, C	None required	28 d	28 d

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18	Hardness	P, G, FP	100	G, C	Add HNO ₃ or H ₂ SO ₄ to pH < 2	6 months	6 months
19	Iodine	P, G	500	G	Analyze immediately	0.25 h	N.S.
20	Metals	P(A), G(A), FP(A)	1000	G, C	For dissolved metals filtered immediately, add HNO ₃ to pH <2	6 months	6 months
21	Chromium VI	P(A), G(A), FP(A)	250	G	Cool, ≤ 6°C pH 9.3 – 9.7, ammonium sulphate buffer preservatives as specified in method 3500-Cr to extend to 28 days HT	28 d	28d
22	Mercury	P(A), G(A), FP(A)	500	G, C	Add HNO ₃ to pH <2, Cool ≤ 6°C	28 d	28 d
23	Ammonia	P, G, FP	500	G, C	Analyze as soon as possible or add H ₂ SO ₄ to pH <2, Cool ≤ 6°C	7 d	28 d
24	Nitrate	P, G, FP	100	G, C	Analyze as soon as possible; Cool ≤ 6°C	48 h	48 h (14 d for chlorinate d samples)
25	Nitrate + Nitrite	P, G, FP	200	G, C	Add H ₂ SO ₄ to pH <2, Cool ≤ 6°C	1 – 2 d	28 d
26	Nitrite	P, G, FP	100	G, C	Analyze as soon as possible; Cool ≤ 6°C	None	48 h
27	Organic, kjeldahl	P, G, FP	500	G,C	Add H ₂ SO ₄ to pH <2, Cool ≤ 6°C	7 d	28 d
28	Odour	G	500	G	Analyze as soon as possible; Cool ≤ 6°C	6 h	24 h(EPA Manual drinking water)
29	Oil and Grease	G, wide mouth calibrated	1000	G	Add HCl or H ₂ SO ₄ to pH <2, Cool ≤ 6°C	28 d	28 d
30	MBAS	P, G, FP	250	G, C	Cool ≤ 6°C	48 h	48 h as per CFR 136

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31	Pesticides	G(S), PTFE-lined cap	1000	G,C	Cool $\leq 6^{\circ}\text{C}$ add 1000 mg ascorbic acid per lit if residual chlorine present (0.008% sodium thiosulphate in CFR 136)	7 d	7 d until extraction; 40 d after extraction
32	Phenols	P,G,PTFE-lined cap	500	G, C	Cool $\leq 6^{\circ}\text{C}$ Add H_2SO_4 to pH <2,	*	28 d until extraction 2 d after extraction
33	Base/Neutrals and acids	G(S) amber	1000	G,C	Cool $\leq 6^{\circ}\text{C}$, if residual chlorine present (0.008% sodium thiosulphate in CFR 136)	7 d	7 d until extraction 40 d after extraction
34	Oxygen, dissolve electrode Winkler	G, BOD Bottle	300	G	Analyze immediately Titration may be delayed after acidification	0.25 h 8 h	0.25 h 8 h
35	Ozone	G	1000	G	Analyze immediately	0.25 h	N. S.
36	pH	P, G	50	G	Analyze immediately	0.25 h	0.25 h
37	Phosphate	G(A)	100	G	For dissolved phosphate filter immediately; cool $\leq 6^{\circ}\text{C}$	48 h	48 h as per EPA manual for D.W.
38	Phosphorus, Total	P, G, FP	100	G, C	Add H_2SO_4 to pH <2, Cool $\leq 6^{\circ}\text{C}$	28 d	28 d
39	Salinity	G, wax seal	240	G	Analyze immediately or use wax seal	6 months	N. S.
40	Silica	F, P (PTFE) or quartz	200	G,C	Cool $\leq 6^{\circ}\text{C}$, do not freeze	28 d	28 d
41	Solids	P,G	200	G,C	Cool $\leq 6^{\circ}\text{C}$	7 d	2-7 d; see cited reference
42	Sulphate	P,G,FP	100	G, C	Cool $\leq 6^{\circ}\text{C}$	28 d	28 d
43	Sulphide	P,G,FP	100	G,C	Cool $\leq 6^{\circ}\text{C}$; add 4 drops 2N zinc acetate/100 ml; add NaOH to pH >9	28 d	7 d

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44	Temperature	P,G,FP	-	G	Analyze immediately	0.25 h	0.25 h
45	Turbidity	P,G,FP	100	G,C	Analyze same day; store in dark up to 24 h, Cool $\leq 6^{\circ}\text{C}$	24 h	48 h

NOTE

*	For determinations not listed, use glass or plastic containers; preferably refrigerate during storage and analyze as soon as possible.
P	plastic (Polythene or equivalent)
G	Glass; G(A)
P(A)	rinsed with 1 +1 HNO ₃
G(B)	glass, borosilicate
G(S)	glass, rinsed with organic solvents or baked
FP	fluoropolymer (polytetrafluoroethylene (PTFE, Teflon) or other fluoropolymer)
G	Grab
C	composite
Cool	storage at $>0^{\circ}\text{C}$, $\leq 6^{\circ}\text{C}$ (above freezing point of water); in the dark
analyze immediately	analyze usually within 15 min of sample collection
N.S.	not stated in cited reference
stat	no storage allowed; analyze immediately (within 15 min)

Guidance Manual for Drinking Water Quality Monitoring and Assessment, Ed. 1st, NEERI.