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COLLECTION AND PRESERVATION OF SAMPLES (1060)/Collection of Samples

Standard Methods 21st Edition

Table 1060:I. Summary of Special Sampling and Handling Requirements*

Determination	Container†	Min. Sample		Preservation§	Max. Storage	
		Size mL	Sample Type‡		Recommended	Regulatory
Acidity	P, G(B)	100	g	Refrigerate	24 h	14 d
Alkalinity	P, G	200	g	Refrigerate	24 h	14 d
BOD	P, G	1000	g, c	Refrigerate	6 h	48 h
Boron	P (PTFE) or quartz	1000	g, c	HNO ₃ to pH <2	28 d	6 months
Bromide	P, G	100	g, c	None required	28 d	28 d
Carbon, organic, total	G (B)	100	g, c	Analyze immediately; or refrigerate and add HCl, H ₃ PO ₄ , or H ₂ SO ₄ to pH <2	7 d	28d
Carbon dioxide	P, G	100	g	Analyze immediately	0.25 h	N.S.
COD	P, G	100	g, c	Analyze as soon as possible, or add H ₂ SO ₄ to pH <2; refrigerate	7 d	28 d
Chloride	P, G	50	g, c	None required	N.S.	28 d
Chlorine, total, residual	P, G	500	g	Analyze immediately	0.25 h	0.25 h
Chlorine dioxide	P, G	500	g	Analyze immediately	0.25 h	N.S.
Chlorophyll	P, G	500	g	Unfiltered, dark, 4°C Filtered, dark, -20°C (Do not store in frost-free freezer)	24-48 h 28 d	
Color	P, G	500	g, c	Refrigerate	48 h	48 h
Specific conductance	P, G	500	g, c	Refrigerate	28 d	28 d
Cyanide						
Total	P, G	1000	g, c	Add NaOH to pH >12, refrigerate in dark#	24 h	14 d; 24 h if sulfide present
Amenable to chlorination	P, G	1000	g, c	Add 0.6 g ascorbic acid if chlorine is present and refrigerate	stat	14 d; 24 h if sulfide present
Fluoride	P	500	g, c	None required	28 d	28 d
Hardness	P, G	500	g, c	Add HNO ₃ or H ₂ SO ₄ to pH <2	6 months	6 months
Iodine	P, G	500	g	Analyze immediately	0.25 h	N.S.
Metals, general	P(A), G(A)	1000	g, c	For dissolved metals filter immediately, add HNO ₃ to pH <2	6 months	6 months
Chromium VI	P(A), G(A)	1000	g	Refrigerate	24 h	24 h
Copper by colorimetry*			g, c			
Mercury	P(A), G(A)	1000	g, c	Add HNO ₃ to pH <2, 4°C, refrigerate	28 d	28 d
Nitrogen						
Ammonia	P, G	500	g, c	Analyze as soon as possible or add H ₂ SO ₄ to pH <2, refrigerate	7 d	28 d
Nitrate	P, G	500	g, c	Analyze as soon as possible; refrigerate	48 h	48 h (28 d for chlorinated samples)
Nitrate + nitrite	P, G	500	g, c	Add H ₂ SO ₄ to pH <2, refrigerate	1-2 d	28 d
Nitrite	P, G	500	g, c	Analyze as soon as possible; refrigerate	none	48 h

Table 1060:I. Cont.

Determination	Container†	Min. Sample		Preservation§	Max. Storage	
		Size mL	Sample Type‡		Recommended	Regulatory
Organic, Kjeldahl*	P, G	500	g, c	Refrigerate, add H ₂ SO ₄ to pH <2	7 d	28 d
Odor	G	500	g	Analyze as soon as possible; refrigerate	6 h	N.S.
Oil and grease	G, wide-mouth calibrated	1000	g	Add HCl or H ₂ SO ₄ to pH <2, refrigerate	28 d	28 d
Organic Compounds						
MBAs	P, G	250	g, c	Refrigerate	48 h	N.S.
Pesticides*	G(S), PTFE-lined cap	1000	g, c	Refrigerate, add 1000mg ascorbic acid/L if residual chlorine present	7 d	7 d until extraction; 40 d after extraction
Phenols	P, G, PTFE-lined cap	500	g, c	Refrigerate, add H ₂ SO ₄ to pH <2	*	28 d until extraction
Purgeables* by purge and trap	G, PTFE-lined cap	2 x 40	g	Refrigerate; add HCl to pH <2; add 1000 mg ascorbic acid/L if residual chlorine present	7 d	14 d
Base/neutrals & acids	G(S) amber	1000	g, c	Refrigerate	7 d	7 d until extraction; 40 d after extraction
Oxygen, dissolved	G, BOD bottle	300	g			
Electrode				Analyze immediately	0.25 h	0.25 h
Winkler				Titration may be delayed after acidification	8 h	8 h
Ozone	G	1000	g	Analyze immediately	0.25 h	N.S.
pH	P, G	50	g	Analyze immediately	0.25 h	0.25 h
Phosphate	G(A)	100	g	For dissolved phosphate filter immediately; refrigerate	48 h	N.S.
Phosphorus, total	P, G	100	g, c	Add H ₂ SO ₄ to pH <2 and refrigerate	28 d	
Salinity	G, wax seal	240	g	Analyze immediately or use wax seal	6 months	N.S.
Silica	P (PTFE) or quartz	200	g, c	Refrigerate, do not freeze	28 d	28 d
Sludge digester gas	G, gas bottle	--	g	--	N.S.	
Solids‡	P, G	500	g, c	Refrigerate	7 d	2-7 d; see cited reference
Sulfate	P, G	500	g, c	Refrigerate	28 d	28 d
Sulfide	P, G	500	g, c	Refrigerate; add 4 drops 2N zinc acetate/100 mL; add NaOH to pH >9	28 d	7 d
Temperature	P, G	--	g	Analyze immediately	0.25 h	0.25 h
Turbidity	P, G	100	g, c	Analyze same day; store in dark up to 24 h, refrigerate	24 h	48 h

* For determinations not listed, use glass or plastic containers; preferably refrigerate during storage and analyze as soon as possible.

† P = plastic (polyethylene or equivalent); G = glass; G(A) or P(A) = rinsed with 1 + 1 HNO₃; G(B) = glass, borosilicate; G(S) = glass, rinsed with organic solvents or baked.

‡ g = grab; c = composite

§ Refrigerate = storage at 4°C ± 2°C; in the dark; analyze immediately = analyze usually within 15 min of sample collection.

|| See citation 10 for possible differences regarding container and preservation requirements. N.S. = not stated in cited reference; stat = no storage allowed; analyze immediately

If sample is chlorinated, see text for pretreatment.

‡ From citation 9.

9. U.S. Environmental Protection Agency. 1996. 40 CFR Part 136, Table II.

10. U.S. Environmental Protection Agency. 1992. Rules and Regulations. 40 CFR Parts 100-149.