

Sample Handling Quick-Reference Guide



Rogers & Callcott

ENGINEERING | ENVIRONMENTAL | LABORATORY

An Alliance Technical Group Company

864-232-1556

- Container
- Preservation
- Max. Holding Time
- Sample Size
- Analysis Method

Please note that this Guide is for surface water, groundwater, and wastewater samples. It is not intended for use with drinking water samples.

Parameter	Container	Preservation*	Maximum Holding Time	Sample Size	Analysis Method
Bacteriological Parameters					
Fecal Coliform	Polypropylene or Glass - Sterilized	Cool < 10°C, Na ₂ S ₂ O ₃	8 hours	120 mL	Colilert-18
E. coli	Polypropylene or Glass - Sterilized	Cool < 10°C, Na ₂ S ₂ O ₃	8 hours	120 mL	SM 9223B
Legionella	Polypropylene or Glass - Sterilized	Cool 2 - 8°C, Na ₂ S ₂ O ₃	24 hours	120 mL	IDEXX Legiolert
Inorganic Tests					
Alkalinity	Polyethylene or Glass	Cool ≤ 6°C	14 days	250 mL	SM 2320B
Ammonia-N	Polyethylene or Glass	Cool ≤ 6°C, H ₂ SO ₄ to pH<2	28 days	250 mL	EPA 350.1
Biochemical Oxygen Demand (BOD & CBOD)	Polyethylene or Glass	Cool ≤ 6°C	48 hours	1/2 gallon	SM 5210B
Bromide	Polyethylene or Glass	None Required	28 days	250 mL	EPA 300.0 EPA 9056A
Chemical Oxygen Demand (COD)	Polyethylene or Glass	Cool ≤ 6°C, H ₂ SO ₄ to pH<2	28 days	250 mL	EPA 410.4
Chloride	Polyethylene or Glass	None Required	28 days	250 mL	EPA 300.0 EPA 9056A
Chlorine	Polyethylene or Glass	None Required; grab sample only	15 minutes		SM 4500Cl G
Color -- ADMI/PCU/NCASI	Polyethylene or Glass	Cool ≤ 6°C	48 hours	250 mL (PCU, NCASI) 500 mL (ADMI)	SM 2120B SM 2120E NCASI TB803
Cyanide (grab only)	Polyethylene or Glass	Cool ≤ 6°C, NaOH, Reducing Agent if oxidizer present	14 days	500 mL	SM 4500CN C,E EPA 9010C / EPA 9014
Flashpoint / Ignitability	Glass	Cool ≤ 6°C	none listed	16 oz.	EPA 1010A
Fluoride	Polyethylene	None Required	28 days	250 mL	EPA 300.0 EPA 9056A
Hardness	Polyethylene or Glass	HNO ₃ to pH<2	6 months	250 mL	EPA 200.7 SM 2340B
Hydrogen Ion Concentration (pH)	Polyethylene or Glass	None Required	15 minutes		SM 4500H ⁺ B EPA 9040C
Kjeldahl Nitrogen, Total (TKN)	Polyethylene or Glass	Cool ≤ 6°C, H ₂ SO ₄ to pH<2	28 days	250 mL	EPA 351.2
Nitrate	Polyethylene or Glass	Cool ≤ 6°C	48 hours	250 mL	EPA 300.0 EPA 9056A
Nitrate-Nitrite	Polyethylene or Glass	Cool ≤ 6°C, H ₂ SO ₄ to pH<2	28 days	250 mL	SM 4500NO ₃ H
Nitrite	Polyethylene or Glass	Cool ≤ 6°C	48 hours	250 mL	SM 4500NO ₂ B EPA 300.0
Oil & Grease (HEM)***	Glass	Cool ≤ 6°C, HCl to pH<2	28 days	1 L	EPA 1664B EPA 9070A
Organic Carbon, Total	Polyethylene or Glass	Cool ≤ 6°C, H ₃ PO ₄ to pH<2	28 days	250 mL	SM 5310B EPA 9060A
Orthophosphate	Polyethylene or Glass	Cool ≤ 6°C	Filter within 15 minutes Analyze within 48 hours	250 mL	SM 4500P E
Oxygen, Dissolved, Probe Method		None Required	15 minutes		SM 4500O G
Phenolics (grab only)	Glass	Cool ≤ 6°C, H ₂ SO ₄ to pH<2	28 days	1 L	EPA 420.1 EPA 9065
Phosphorus	Polyethylene or Glass	Cool ≤ 6°C, H ₂ SO ₄ to pH<2	28 days	250 mL	EPA 200.7 EPA 6010D
Residue, Total	Polyethylene or Glass	Cool ≤ 6°C	7 days	1 L	SM 2540B
Residue, Filterable (TDS)	Polyethylene or Glass	Cool ≤ 6°C	7 days	1 L	SM 2540C
Residue, Nonfilterable (TSS)	Polyethylene or Glass	Cool ≤ 6°C	7 days	1/2 gallon	SM 2540D
Residue, Settleable	Polyethylene or Glass	Cool ≤ 6°C	48 hours	1/2 gallon	SM 2540F
Residue, Volatile	Polyethylene or Glass	Cool ≤ 6°C	7 days	1 L	EPA 160.4
Silica, Dissolved	Polyethylene or Quartz	Cool ≤ 6°C	28 days	250 mL	SM 4500SiO ₂ C
Specific Conductance	Polyethylene or Glass	Cool ≤ 6°C	28 days	250 mL	SM 2510B EPA 9050A

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Sulfate	Polyethylene or Glass	Cool ≤ 6°C	28 days	250 mL	EPA 300.0 EPA 9056A
Sulfide	Polyethylene or Glass	Cool ≤ 6°C, add zinc acetate and NaOH to pH>9	7 days	500 mL	SM 4500S ² F
Sulfite	Polyethylene or Glass	None Required	15 minutes	250 mL	SM 4500SO ₃ B
Surfactants (MBAS)	Polyethylene or Glass	Cool ≤ 6°C	48 hours	1/2 gallon	SM 5540C
Surfactants (CTAS)	Polyethylene or Glass	Cool ≤ 6°C	none listed	1/2 gallon	SM 5540D
Temperature	Polyethylene or Glass	None Required	15 minutes		SM 2550B
Turbidity	Polyethylene or Glass	Cool ≤ 6°C	48 hours	250 mL	EPA 180.1
Metals					
Boron	Polyethylene or Quartz	HNO ₃ to pH<2	6 months	250 mL	EPA 200.7 EPA 6010D
Hexavalent Chromium	Polyethylene or Glass	Cool ≤ 6°C	24 hours	250 mL	SM 3500Cr B EPA 7196A
Mercury	Polyethylene or Glass	HNO ₃ to pH<2	28 days	500 mL	EPA 7470A EPA 245.1
Silicon	Polyethylene	Cool ≤ 6°C	28 days	250 mL	EPA 200.7
Other Metals	Polyethylene or Glass	HNO ₃ to pH<2	6 months	250 mL	EPA 200.7 / EPA 200.8 EPA 6010D / EPA 6020B
Volatile Organics (wastewater source)					
Acrolein and Acrylonitrile	Glass, FP-lined septum	pH 4-5; Cool ≤ 6°C**	14 days	3x 40mL vials, zero headspace	EPA 624.1
Volatile Organics	Glass, FP-lined septum	Cool ≤ 6°C**	7 days	3x 40mL vials, zero headspace	EPA 624.1
2-CEVE	Glass, FP-lined septum	Cool ≤ 6°C**	14 days	3x 40mL vials, zero headspace	EPA 624.1
Volatile Organics	Glass, FP-lined septum	Cool ≤ 6°C, HCl to pH <2**	14 days	3x 40mL vials, zero headspace	EPA 624.1
Volatile Organics (groundwater source)					
Acrolein and Acrylonitrile	Glass, FP-lined septum	pH 4-5; Cool ≤ 6°C	7 days	3x 40mL vials, zero headspace	EPA 8260D
Volatile Organics	Glass, FP-lined septum	Cool ≤ 6°C**	7 days	3x 40mL vials, zero headspace	EPA 8260D
Volatile Organics	Glass, FP-lined septum	Cool ≤ 6°C, HCl to pH <2**	14 days	3x 40mL vials, zero headspace	EPA 8260D
Oxygenates	Glass, FP-lined septum	Cool ≤ 6°C**	7 days	3x 40mL vials, zero headspace	EPA 8260D
Extractable Organics					
Acid / Base Neutrals	Amber Glass, FP-lined cap	Cool ≤ 6°C**; store in dark	7 days until extraction 40 days after extraction	2.5 L	EPA 625.1 EPA 8270E
Polynuclear Aromatic Hydrocarbons (PAH)	Amber Glass, FP-lined cap	Cool ≤ 6°C**; store in dark	7 days until extraction 40 days after extraction	2.5 L	EPA 625.1 EPA 8270E
PCBs	Glass, FP-lined cap	Cool ≤ 6°C	1 year until extraction 1 year after extraction	2.5 L	EPA 608.3 EPA 8082A
Pesticides	Glass, FP-lined cap	Cool ≤ 6°C; pH 5 to 9; **if aldrin is an analyte of concern	7 days until extraction 40 days after extraction	2.5 L	EPA 608.3 EPA 8081B
Herbicides	Amber Glass, FP-lined cap	Cool ≤ 6°C**; store in dark	7 days until extraction 40 days after extraction	2.5 L	EPA 8151A

DISCLAIMER: This information is a general guide and routinely changes. Please contact our laboratory at 864-232-1556 for your specific needs.

- Generally, samples must be preserved within 15 minutes of sample collection (contact our laboratory for specifics).
- Additional sample volume may be needed for quality-control purposes (again, contact our laboratory for specifics).

*Aqueous samples must be cooled to ≤6°C and should not be frozen.

**Contact our laboratory if chlorine is present

***Grab only, directly in sample container

Revised 2/6/2020

Your project managers are always available to help. Do not hesitate to call - 864-232-1556.