REFERENCE CHART: HOLDING TIME, BOTTLE TYPE, PRESERVATION, MINIMUM VOLUME

Analytical Parameter	Maximum Holding Time	Required Container Type	Required Preservative	Minimum Amount	
Alkalinity (Bicarb, Carb, Hyd, and Tot); SM 2320 B	14 days	Plastic / Glass	0-6°C	100	mL
Ammonia (NH_3 as N); SM 4500NH3 B/C or B/G	28 days	Plastic / Glass	H_2SO_4 pH <2 +0-6°C	200	mL
Asbestos (TEM)	**48 hours**	Plastic / Glass	0-6°C	1000	mL
Bioassay (Acute Tox) % survival	**36 hours**	Plastic cubitainer	0-6°C	1-5	gal
Biochemical Oxygen Demand (BOD); SM 5210 B	**48 hours**	Plastic / Glass	0-6°C	250	mL
Chromium, Hexavalent (CrVI); SM 3500Cr B	**24 hours**	Plastic / Glass	0-6°C	200	mL
Chloride (Cl^-); EPA 300.0	28 days	Plastic / Glass	0-6° C	100	mL
Chlorine, residual; SM 4500Cl B or G	**15 minutes**	Field Measurement	-	-	-
Chemical Oxygen Demand (COD); SM 5220 D or EPA 410.4	28 days	Plastic / Glass	H_2SO_4 pH <2 +0-6°C	50	mL
Chlorophyll A (Algal Biomass) / Pheophytin; SM 10200 H	**48 Hours to filter** 28 days once filtered	Amber Plastic	0-6°C, unfiltered -20°C, filtered	1	L
Coliform, Total / Fecal; SM 9221 B/E	**8 hrs - wastewater** **24 hrs – drinking water**	Plastic (sterile)	$Na_2S_2O_3$ + <10°C	100	mL
Coliform, Total / E.Coli; SM 9223 B (Present/Absent or Quantitray)	**24 hours**	Plastic (sterile)	$Na_2S_2O_3$ + <10°C	100	mL
Color; SM 2120 B	**48 hours**	Plastic / Glass	0-6°C	100	mL
Conductivity (EC/SC); SM 2510 B	28 days	Plastic / Glass	0-6°C	100	mL
Cyanide Total or WAD; SM 4500CN B/C/E or B/C/I	14 days	Amber Plastic	NaOH pH >10+0-6°C	100	mL
Dissolved Organic Carbon (DOC); SM 5310 B	**Filter within 48 hours** 28 days	250 mL Amber glass	Filter then add HCL to pH< 2 + 0-6°C	50	mL
Dissolved Oxygen (DO); SM 4500O G	**15 minutes**	Field Measurement	-	-	-
Enterococcus by Enterolert	**8 hours**	Plastic (sterile)	$Na_2S_2O_3$ + <10°C	100	mL
Fluoride (F^-); EPA 300.0	28 days	Plastic / Glass	0-6°C	100	mL
Heterotrophic Plate Count (HPC/SPC); SIMPLATE	**24 hours**	Plastic (sterile)	$Na_2S_2O_3$ + 0-6°C	100	mL
Hardness (by titration); SM 2340 C	180 days	Plastic / Glass	HNO_3 pH <2	250	mL
Metals, Dissolved {2}; EPA 200.8	**Filter within 15 minutes{2},** 6 months	Plastic / Glass	Filter then add HNO_3	100	mL
Metals, Total; EPA 200.8 Metals, Total; EPA 6010/6020	6 months	Plastic / Glass Solids in Glass SJ	HNO_3 pH <2 None	100 1	mL 8oz
Mercury (Hg) EPA 245.1 Mercury (Hg) EPA 7471	28 days	Plastic / Glass Solids in Glass SJ	HNO_3 pH <2 0-6°C	100 1	mL 8oz
Mercury, Total; EPA 1631 (Aqueous) Mercury, Total; EPA 1631 (Sludge or Solids)	**48 hours to preserve** 90 days once preserved 90 days frozen	Glass, Dbl Bagged Solids in Glass SJ	HCl 0-6°C	100 1	mL 8oz
Mercury, Dissolved {2}; EPA 1631	**Filter within 24 hours, preserve within 48 hours** 90 days once preserved	Glass, Dbl Bagged	Filter in lab, then HCl	100	mL
Mercury, Methyl; EPA 1630 (Aqueous) Mercury, Methyl; EPA 1630 (Sludge or Solids)	**48 hours to preserve** 6 months preserved 6 months frozen	Glass, Amber Dbl Bagged Solids in Amber Poly SJ	0-6°C + HCl if < 10 ppth salinity {8} Solids to be Frozen	100 1	mL 8oz
Mercury, Dissolved {2} Methyl; EPA 1630	**Filter & preserve within 48 hours** 6 months once preserved	Glass, Amber Dbl Bagged	Filter in Lab, 0-6°C + HCl if < 10 ppth salinity {8}	100	mL
Nitrate (as N); EPA 300.0	**48 hours**	Plastic / Glass	0-6°C	100	mL
Nitrite (as N); SM 4500NO2 B	**48 hours**	Plastic / Glass	0-6°C	100	mL
Nitrate+Nitrite as N (NO_3+NO_2-N) EPA 353.2, or SM NO3 F	28 days	Plastic / Glass	H_2SO_4 pH <2 +0-6°C	100	mL
Nitrogen, Total Kjeldahl (TKN); SM 4500Norg + SM 4500NH3 B	28 days	Plastic / Glass	H_2SO_4 pH <2 +0-6°C	200	mL
Nitrogen, Total Organic (TON) TKN-NH_3= TON calc	28 days	Plastic / Glass	H_2SO_4 pH <2 +0-6°C	200	mL
Odor; SM 2150 B	**6 hours (recommended) / 24 hour regulatory**	Glass only	0-6°C	250	mL
Oil & Grease, Total and/or Hydrocarbons EPA 1664	28 days	Amber Glass only	HCl pH <2 + 0-6°C	1 {10}	L
Chlorinated Pesticides & PCBs EPA 608.1/8081/8082	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6} Solids in Glass SJ	0-6°C {5} 0-6°C	1 1	L 8oz
Polynuclear Aromatic Hydrocarbons (PAH's) EPA 625.1/8270	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6} Solids in Glass SJ	0-6°C {5} 0-6°C	1 1	L 8oz
Organophosphorus Pesticides EPA 614/8141	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6} Solids in Glass SJ	0-6°C {5} 0-6°C	1 1	L 8oz

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Analytical Parameter	Maximum Holding Time	Required Container Type	Required Preservative	Minimum Amount	
Semivolatile Organics EPA 625.1/8270	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6} Solids in Glass SJ	0-6°C {5} 0-6°C	1 1	L 8oz
Pyrethroid Pesticides GCMS-NCI-SIM/ 8270M / GCMS/MS	**7 days /3 days {9}** 14 days, soil or sediment	Glass Amber Liter {6} Solids-Amber Glass SJ {11}	0-6°C {5} Solids to be Frozen	1 1	L 8oz
Carbamate Pesticides EPA 632/8321	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6} Solids in Glass SJ	0-6°C	1	L
Volatile Organics EPA 524.2 {4}	14 days, preserved	Glass VOA vial {1} (sample in triplicate)	HCl pH <2 + 0-6°C	40	mL
Volatile Organics EPA 624.1 {3} (Includes Acrolein and Acrylonitrile)	14 days unpreserved 14 days HCl preserved to pH 2 (Benzene, Ethyl Benzene, Toluene only) {11} 3 days unpreserved for Acrolein {12} THMS only—3 HCl VOAs	Total of Six 40 mL VOA Vials; Two Pres w/ HCl, Two Unpreserved, Two Client preserved to pH 4-5. {1}	0-6°C (see holding time for additional preservation)	One 40mL of each container type described	
Volatile Organics; EPA 8260 {3}	14 days	Glass VOA vial {1} (sample in triplicate)	HCl pH <2 + 0-6°C	40	mL
TPH Diesel/Motor Oil; EPA 8015	7 days	Glass Amber Liter {6}	0-6°C	1	L
Tributyltin (TBT)	7 days (recommended)	Glass Amber Liter {6}	0-6°C	1	L
TPH Gas/ BTEX/ MTBE; EPA 8260	14 days preserved	Glass VOA vial {1}	HCl pH <2 + 0-6°C	40	mL
Dioxin; EPA 1613	1 year	Glass Amber Liter {6}	0-6°C {5}	1	L
Perchlorate; EPA 314.0	28 days	Plastic/Glass	0-6°C	100	mL
pH; SM 4500 H+ B	**15 minutes**	Plastic / Glass	0-6°C	100	mL
Phenols, EPA 420.1	28 days	Glass Amber 250 mL	H_2SO_4 pH <2 +0-6°C	200	mL
Phosphate, Ortho (as P); SM 4500P E	**48 hours**	Plastic / Glass	0-6°C	100	mL
Phosphate, Ortho, Dissolved (as P); SM 4500P E	**15 minutes to filter / 48 hrs once filtered**	Plastic / Glass	0-6°C	100	mL
Phosphorus, Total (PO_4 as P); SM 4500P B/F or B/E	28 days	Plastic / Glass	H_2SO_4 pH <2+0-6°C	100	mL
Solids, Settleable (SS); SM 2540 F	**48 hours**	Plastic / Glass	0-6°C	1000	mL
Solids, Total (mg/L or %); SM 2540 B, or SM 2540 G	7 days	Plastic / Glass	0-6°C	100	mL
Solids, Total Dissolved (TDS); SM 2540 C	7 days	Plastic / Glass	0-6°C	100	mL
Solids, Total Suspended (TSS); SM 2540 D	7 days	Plastic / Glass	0-6°C	200	mL
Solids, Volatile Suspended (VSS); SM 2540 E	7 days	Plastic / Glass	0-6°C	200	mL
Sulfate (SO_4^{2-}), EPA 300.0	28 days	Plastic / Glass	0-6°C	100	mL
Sulfide, Dissolved; SM 4500 S2- B/D	7 days	Glass 250 mL	$AlCl_3$ + NaOH +0-6°C	250	mL
Sulfide, Total; SM 4500 S2- C/D	7 days	Glass 250 mL	NaOH + ZnAC pH >9 + 0-6°C	250	mL
Sulfite (SO_3)	7 days	Glass 500 mL	EDTA + 0-6°C	250	mL
Surfactants (MBAS); SM 5540 C	**48 hours**	Plastic / Glass	0-6°C	250	mL
Suspended Sediment Conc. (SSC); ASTM D3977	7 days	Plastic / Glass	0-6°C {7}	100	mL
Total Organic Carbon (TOC); SM 5310 B	28 days	Amber Glass VOA vial (in trip)	HCl pH <2 + 0-6°C	40	mL
Turbidity; SM 2130 B, or EPA 180.1	**48 hours**	Plastic / Glass	0-6°C	100	mL
Ultraviolet Absorption (UVA at 254nm); SM 5910 B	**48 hours**	Glass Amber 125mL	0-6°C	125	mL

{1} Volatile organic samples need to be filled in multiple VOA vials without air bubbles or headspace.
{2} Dissolved metals require field or lab filtration through 0.45-micron filter prior to preservation. 40 CFR 136.3 requires filtration within 15 minutes.
{3} Volatile organic methods EPA 624 and 8260 require dechlorination using Sodium Thiosulfate (Na2S2O3) at time of sampling if chlorine is present. (Thiosulfate dechlorination bottles are available at the laboratory upon request.) Dechlorination is to occur before transferring to the appropriate VOA.
{4} Volatile organic method EPA 524.2 requires dechlorination using ascorbic acid at time of sampling if chlorine is present. (Ascorbic acid dechlorination kits are available at the laboratory upon request.) If analyzing for THMs only, Sodium Thiosulfate (Na2S2O3) may be used, and acidification can be omitted. Otherwise, dechlorinate with Ascorbic acid, then preserve with HCl. If the sample foams vigorously upon addition of HCl, discard and collect unpreserved dechlorinated sample, and notify the laboratory as the samples must be analyzed within 24 hours of collection if they are to be analyzed for any compounds other than THMs. Method 524.2 requires a travel/trip blank with each sample set collected.
{5} If sampling from a chlorinated location, collect additional bottles with 0.008% Sodium Thiosulfate ($Na_2S_2O_3$) for dechlorination.
{6} Semi Volatile Organics Amber Liters (AL) should be collected in duplicate, to insure volume for re-extraction if necessary. When possible, please collect 4 AL per method to allow the laboratory to perform matrix Quality Control (MS/MSD).
{7} Suspended Sediment Conc.(SSC) requires its own container and the entire contents are used for the analysis.
{8} Preserve with HCl if less than 10 ppth Salinity, or Preserve with H_2SO_4 if greater than 10 ppth Salinity.
{9} Cyhalothrin in water has a 3 day hold time in reagent water per USGS study. Permethrin in water has a 3 day hold time per Storage Stability Study by CA Dept. of Food and Agriculture.
{10} 1000 mL required for RL of 5 mg/L. 250 mL bottle recommended for samples with expected concentrations of 20 mg/L or higher.
{11} If unpreserved, must be analyzed within 7 days of sampling
{12} Hold time can be extended to 14 days if preserved to pH 4-5 at time of collection.

Note: Multiple analyses may be run from the same container, provided that the bottle type, volume and preservation are appropriate.
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