

Holding Times, Containers, and Preservations for Water/Aqueous Samples

<i>General Chemistry / Metals</i>	<i>Method</i>	<i>Holding Time (days)</i>	<i>Min Volume (mls)</i>	<i>Container</i>	<i>Preservation</i>
Alkalinity	SM 2320 B	14	100	250-mL HDPE	4°C
Biochemical Oxygen Demand (BOD)	SM 5210 B	48 hours	300	1-L HDPE	4°C
Bromide	EPA 300.0	28	20	125-mL HDPE	4°C
Carbon Dioxide	SM 4500-CO ₂ D	24 hours	250	250-mL amber glass	4°C (no headspace)
Carbon Dioxide	RSK 175(M)	7	40	2 x 40-mL VOA vials	4°C (no headspace)
Chemical Oxygen Demand (COD)	SM 5220 D	28	20	250-mL glass	H ₂ SO ₄ & 4°C
Chloride	EPA 300.0 / SM 4500-Cl ⁻ C	28	50	125-mL HDPE	4°C
Chlorine, Total Residual	SM 4500-Cl F	15 minutes	100	500-mL HDPE	4°C
Chromium VI (Hexavalent Chromium)	EPA 218.6 / 7196A / 7199	24 hours	200	250-mL HDPE	4°C
Cyanide, Amenable	SM 4500-CN ⁻ G	14	500	1-L HDPE	NaOH & 4°C
Cyanide, Total	SM4500-CN ⁻ C/E	14	500	1-L HDPE	NaOH & 4°C
Dissolved Oxygen	SM 4500-O G	15 minutes	300	500-mL amber glass	4°C (no headspace)
Ferrous Iron	SM 3500-Fe B	24 hours	50	250-mL amber glass	4°C (no headspace)
Ferrous Iron	SM 3500-Fe B	24 hours	50	250-mL amber glass	HCl & 4°C (no headspace; field filtered)
Fluoride	SM 4500-F ⁻ C	28	100	250-mL HDPE	4°C
Formaldehyde	ASTM D6303-98	24 hours	150	500-mL amber glass	4°C
Hardness, Total / Calcium	SM 2340 C / SM 3500-Ca B	180	100	250-mL HDPE	HNO ₃
Hexane Ext. Material (HEM/SGT-HEM)	EPA 1664A	28	1000	1-L amber glass	H ₂ SO ₄ & 4°C
Ignitability (Flashpoint)	EPA 1010A / ASTM D93-80	14	250	250-mL glass	4°C
Mercaptans	LACSD 258	48 hours	50	125-mL HDPE	4°C
Mercury	EPA 7470A / 245.1	28	100	250-mL HDPE	HNO ₃
Metals (ICP)	EPA 6010B / 200.7	180	100	250-mL HDPE	HNO ₃
Metals (ICP/MS)	EPA 6020 / 200.8	180	100	250-mL HDPE	Ultra HNO ₃
Nitrogen, Ammonia (NH ₃)	SM 4500-NH ₃ B/C	28	500	1-L amber glass	H ₂ SO ₄ & 4°C
Nitrogen, Nitrate (NO ₃)	EPA 300.0 / SM 4500-NO ₃ E	48 hours	50	125-mL HDPE	4°C
Nitrogen, Nitrite (NO ₂)	EPA 300.0 / SM 4500-NO ₂ B	48 hours	50	125-mL HDPE	4°C
Nitrogen, Nitrate+Nitrite (NO ₃ +NO ₂)	SM 4500-NO ₃ E / SM 4500-NO ₂ B	28	50	125-mL HDPE	H ₂ SO ₄ & 4°C
Nitrogen, Total Kjeldahl (TKN)	SM 4500-N _{org} B	28	500	1-L amber glass	H ₂ SO ₄ & 4°C
Nitrogen, Total	TKN / NO ₃ + NO ₂	28	500	1-L amber glass	H ₂ SO ₄ & 4°C
Nitrogen, Total Inorganic	NH ₃ / NO ₃ + NO ₂	28	500	1-L amber glass	H ₂ SO ₄ & 4°C
Nitrogen, Total Organic	TKN - NH ₃	28	1000	1-L amber glass	H ₂ SO ₄ & 4°C
Oil and Grease	SM 5520 B	28	1000	1-L amber glass	H ₂ SO ₄ & 4°C
Organic Lead	DHS LUFT	7	100	500-mL amber glass	4°C
Perchlorate	EPA 314.0 / 331.0(M)	28	50	125-mL / 100-mL sterile HDPE	4°C
pH	SM 4500-H ⁺ B	15 minutes	50	125-mL HDPE	4°C
Phenolics, Total	EPA 420.1	28	200	500-mL amber glass	H ₂ SO ₄ & 4°C
Phosphate, Ortho	EPA 300.0 / SM4500-P B/E	48 hours	50	125-mL HDPE	4°C
Phosphate, Total	SM 4500-P B/E	28	100	250-mL glass	H ₂ SO ₄ & 4°C
Phosphorus, Dissolved	SM 4500-P B/E	28	100	250-mL glass	4°C
Phosphorus, Total	SM 4500-P B/E	28	100	250-mL glass	H ₂ SO ₄ & 4°C
Redox Potential	ASTM D1498-00	24 hours	50	125-mL HDPE	4°C
Salinity	SM 2520 B	28	100	125-mL HDPE	4°C
Solids, Total Dissolved (TDS)	SM 2540 C	7	1000	1-L HDPE	4°C
Solids, Total Suspended (TSS)	SM 2540 D	7	1000	1-L HDPE	4°C
Solids, Total (TS)	SM 2540 B	7	200	500-mL HDPE	4°C
Solids, Volatile (VS)	SM 2540 E / EPA 160.4	7	200	500-mL HDPE	4°C
Solids, Settleable (SS)	SM 2540 F	48 hours	1000	1-L HDPE	4°C
Solids, Volatile Suspended (VSS)	SM 2540 D / EPA 160.4	7	1000	1-L HDPE	4°C
Specific Conductance	SM 2510 B	28	50	125-mL HDPE	4°C
Sulfate	EPA 300.0 / ASTM D516-02	28	50	125-mL HDPE	4°C
Sulfide, Soluble	SM 4500-S ²⁻ D	15 minutes	50	125-mL HDPE	4°C
Sulfide, Total	SM 4500-S ²⁻ D	7	50	125-mL HDPE	ZnAc ₂ & NaOH & 4°C
Surfactants (MBAS)	SM 5540 C	48 hours	200	500-mL HDPE	4°C
Thiosulfate	LACSD 253A	48 hours	200	500-mL HDPE	4°C
Total Organic Carbon (TOC)	SM 5310 D	28	150	250-mL glass	H ₂ SO ₄ & 4°C
Turbidity	SM 2130 B	48 hours	100	125-mL HDPE	4°C
96-Hour Aquatic Toxicity, Haz Waste	CA Dept. Fish & Game	28	100	250-mL HDPE	4°C
<i>Volatile / Semi-Volatile Organics</i>	<i>Method</i>	<i>Holding Time (days)</i>	<i>Min Volume (mls)</i>	<i>Container</i>	<i>Preservation</i>
EDB/DBCP	EPA 504.1	14	40	3 x 40-mL VOA vials	Na ₂ S ₂ O ₃ & 4°C
Ethanol (low level)	EPA 524.2(M) SIM / 8260B(M) SIM	14	40	3 x 40-mL VOA vials	HCl & 4°C (no headspace)
EPH	EPA 8015B(M)	14*	500	500-mL amber glass	H ₂ SO ₄ & 4°C
Herbicides, Chlorinated	EPA 8151A	7*	1000	1-L amber glass	4°C
Methane in Water	RSK 175(M)	14	40	2 x 40-mL VOA vials	HCl & 4°C (no headspace)
Methanol / Ethanol	EPA 8015B	14	40	2 x 40-mL VOA vials	4°C (no headspace)
NDMA	EPA 1625C(M)	7*	1000	1-L amber glass	4°C
Oil and Grease	EPA 413.2	28	500	500-mL amber glass	H ₂ SO ₄ & 4°C
Organotins	Krone et al	7*	1000	1-L amber glass	4°C
PCBs	EPA 8082 / 608	7*	1000	1-L amber glass	4°C
Pesticides, Organochlorine	EPA 8081A / 608	7*	1000	1-L amber glass	4°C
Pesticides, Organophosphorus	EPA 8141B	7*	1000	1-L amber glass	4°C
SVOCs (BNAs)	EPA 8270C / 625	7*	1000	1-L amber glass	4°C
TPH-CC / TPH(d) / DRO	EPA 8015B(M) / 8015B	7*	500	500-mL amber glass	4°C
TPH(g) / GRO / BTEX / MTBE	EPA 8015B(M) / 8015B / 8021B / 602	14	40	3 x 40-mL VOA vials	HCl & 4°C (no headspace)
TRPH	EPA 418.1	28	500	500-mL amber glass	H ₂ SO ₄ & 4°C
VOCs / TPHP	EPA 8260B / 624 / LUFT GC/MS	14	40	3 x 40-mL VOA vials	HCl & 4°C (no headspace)
VOCs (drinking water)	EPA 524.2	14	40	3 x 40-mL VOA vials	Ascorbic Acid / HCl & 4°C (no headspace)
Volatile Fatty Acids (Organic Acids)	HPLC/UV	28	40	2 x 40-mL VOA vials	H ₃ PO ₄ & 4°C (no headspace)
VPH	EPA 8260B	14	40	3 x 40-mL VOA vials	HCl & 4°C (no headspace)
1,2,3-TCP	SRL-524M TCP	14	40	3 x 40-mL VOA vials	HCl & 4°C (no headspace)
1,4-Dioxane	GC/MS Isotope Dilution / EPA 522	7*	100	250-mL amber glass	4°C

* days for extraction; 40 days after extraction for analysis.



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Holding Times, Containers, and Preservations for Soil/Solid Samples

<u>General Chemistry / Metals</u>	<u>Method</u>	<u>Holding Time (days)</u>	<u>Minimum Mass (g)</u>	<u>Container</u>	<u>Preservation</u>
Alkalinity	SM 2320 B	14	20	4-oz glass jar w/Teflon lid	4°C
Biochemical Oxygen Demand (BOD)	SM 5210 B(M)	48 hours	30	4-oz glass jar w/Teflon lid	4°C
Bromide	EPA 300.0(M)	28	10	4-oz glass jar w/Teflon lid	4°C
Chemical Oxygen Demand (COD)	SM 5220 D(M)	28	10	4-oz glass jar w/Teflon lid	4°C
Chloride	EPA 300.0(M)	28	10	4-oz glass jar w/Teflon lid	4°C
Chromium VI (Hexavalent Chromium)	EPA 7196A / 7199 / 3060A	30	10	4-oz glass jar w/Teflon lid	4°C
Chromium VI (Hexavalent Chromium)	EPA 7199 / 3060A	30	10	4-oz glass jar w/Teflon lid	4°C
Cyanide, Amenable	EPA 9010C / 9014	14	20	4-oz glass jar w/Teflon lid	4°C
Cyanide, Reactive	SW 846 Ch. 7	14	20	4-oz glass jar w/Teflon lid	4°C
Cyanide, Total	EPA 9010C / 9014	14	10	4-oz glass jar w/Teflon lid	4°C
Ferrous Iron	SM 3500-Fe B(M)	24 hours	10	4-oz glass jar w/Teflon lid	4°C
Fluoride	SM 4500-F ⁻ C(M)	28	20	4-oz glass jar w/Teflon lid	4°C
Hexane Ext. Material (HEM/SGT-HEM)	EPA 1664A(M)	28	30	4-oz glass jar w/Teflon lid	4°C
Ignitability	EPA 1030	14	100	4-oz glass jar w/Teflon lid	4°C
Mercury	EPA 7471A	28	1	4-oz glass jar w/Teflon lid	None
Metals	EPA 6010B / 6020	180	2	4-oz glass jar w/Teflon lid	None
Moisture Content	ASTM D2216-92(M)	10	20	4-oz glass jar w/Teflon lid	4°C
Nitrogen, Ammonia	SM 4500-HN ₃ B/C(M)	28	10	4-oz glass jar w/Teflon lid	4°C
Nitrogen, Nitrate	EPA 300.0(M)	7	10	4-oz glass jar w/Teflon lid	4°C
Nitrogen, Nitrite	EPA 300.0(M)	7	10	4-oz glass jar w/Teflon lid	4°C
Nitrogen, Nitrate+Nitrite (NO ₃ +NO ₂)	SM 4500-NO ₃ E(M) / SM 4500-NO ₂ B(M)	7	10	4-oz glass jar w/Teflon lid	4°C
Nitrogen, Organic	SM 4500-NH ₃ / 4500-N _{org} B	28	10	4-oz glass jar w/Teflon lid	4°C
Nitrogen, Total Kjeldahl (TKN)	SM 4500-N _{org} B(M)	28	10	4-oz glass jar w/Teflon lid	4°C
Nitrogen, Total	TKN / NO ₃ + NO ₂	7	30	4-oz glass jar w/Teflon lid	4°C
Oil and Grease	SM 5520 B(M)	28	30	4-oz glass jar w/Teflon lid	4°C
Organic Lead	DHS LUFT	14	10	4-oz glass jar w/Teflon lid	4°C
Perchlorate	EPA 314.0(M) / 6850	28	20	4-oz glass jar w/Teflon lid	4°C
pH	EPA 9045D	ASAP (24 hours)	20	4-oz glass jar w/Teflon lid	4°C
Phenolics, Total	EPA 9065	28	20	4-oz glass jar w/Teflon lid	4°C
Phosphate, Ortho	EPA 300.0(M)	7	10	4-oz glass jar w/Teflon lid	4°C
Phosphate, Total	SM 4500-P B/E(M)	28	20	4-oz glass jar w/Teflon lid	4°C
Phosphorus, Total	SM 4500-P B/E(M)	28	20	4-oz glass jar w/Teflon lid	4°C
Specific Conductance	EPA 9050A	28	20	4-oz glass jar w/Teflon lid	4°C
Sulfate	EPA 300.0(M) / 9038	28	20	4-oz glass jar w/Teflon lid	4°C
Sulfide, Reactive	SW 846 Ch. 7	7	20	4-oz glass jar w/Teflon lid	4°C
Sulfide, Total	SM 4500-S ²⁻ D	7	20	4-oz glass jar w/Teflon lid	4°C
Surfactants (MBAS)	SM 5540 C(M)	48 hours	20	4-oz glass jar w/Teflon lid	4°C
Total Organic Carbon (TOC)	EPA 9060A	28	2	4-oz glass jar w/Teflon lid	4°C
96-Hour Aquatic Toxicity, Haz Waste	CA Dept. Fish & Game	28	100	4-oz glass jar w/Teflon lid	4°C

<u>Volatile / Semi-Volatile Organics</u>	<u>Method</u>	<u>Holding Time (days)</u>	<u>Minimum Mass (g)</u>	<u>Container</u>	<u>Preservation</u>
EPH	EPA 8015B(M)	14*	10	4-oz glass jar w/Teflon lid	4°C
Herbicides, Chlorinated	EPA 8151A	14*	50	4-oz glass jar w/Teflon lid	4°C
Methanol / Ethanol	EPA 8015B	14	50	4-oz glass jar w/Teflon lid	4°C
Oil and Grease	EPA 413.2(M)	28	5	4-oz glass jar w/Teflon lid	4°C
Organotins	Krone et al	14*	20	4-oz glass jar w/Teflon lid	4°C
PAHs	EPA 8310	14*	20	4-oz glass jar w/Teflon lid	4°C
PCBs	EPA 8082	14*	20	4-oz glass jar w/Teflon lid	4°C
Pesticides, Organochlorine	EPA 8081A	14*	20	4-oz glass jar w/Teflon lid	4°C
Pesticides, Organophosphorus	EPA 8141B	7*	20	4-oz glass jar w/Teflon lid	4°C
SVOCs (BNAs)	EPA 8270C	14*	20	4-oz glass jar w/Teflon lid	4°C
TPH-CC / TPH(d) / DRO	EPA 8015B(M) / 8015B	14*	10	4-oz glass jar w/Teflon lid	4°C
TPH(g) / GRO / BTEX / MTBE	EPA 8015B(M) / 8015B / 8021B	14	5	4-oz glass jar w/Teflon lid	4°C
TPH(g) / GRO (5g EnCore Sampler)	EPA 5035 / 8015B(M) / 8015B	48 hours**	2/sample	2 EnCores	4°C
TPH(g) / GRO (5g TerraCore Sampler)	EPA 5035 / 8015B(M) / 8015B	14	2/sample	2 TerraCores	4°C
TRPH	EPA 418.1(M)	28	5	4-oz glass jar w/Teflon lid	4°C
VOCs / TPPH	EPA 8260B / LUFT GC/MS	14	10	4-oz glass jar w/Teflon lid	4°C
VOCs (5g EnCore Sampler)	EPA 5035 / 8260B	48 hours**	3/sample	3 EnCores	4°C
VOCs (5g TerraCore Sampler)	EPA 5035 / 8260B	14	3/sample	3 TerraCores	4°C
Volatile Fatty Acids (Organic Acids)	HPLC/UV	14	10	4-oz glass jar w/Teflon lid	4°C
VPH	EPA 8260B	14	5	4-oz glass jar w/Teflon lid	4°C
VPH (5g EnCore Sampler)	EPA 5035 / 8260B	48 hours**	3/sample	3 EnCores	4°C
VPH (5g TerraCore Sampler)	EPA 5035 / 8260B	14	3/sample	3 TerraCores	4°C

* days for extraction; 40 days after extraction for analysis.

** hours for extraction; 14 days for analysis.

<u>STLC / TCLP / SPLP</u>	<u>Method</u>	<u>Holding Time (days)</u>	<u>Minimum Mass (g)</u>	<u>Method Ext. After</u>	<u>Holding Time After Ext. (days)</u>
Mercury	CCR T22.11.5.A-II / EPA 1311/1312	28	50 / 100	N/A	28
Metals	CCR T22.11.5.A-II / EPA 1311/1312	180	50 / 100	N/A	180
SVOCs	CCR T22.11.5.A-II / EPA 1311/1312	14	50 / 100	7	40
TPH(d) / DRO	CCR T22.11.5.A-II / EPA 1311/1312	14	50 / 100	7	40
TPH(g) / GRO	CCR T22.11.5.A-II / EPA 1311/1312	14	50 / 25	N/A	7
VOCs	CCR T22.11.5.A-II / EPA 1311/1312	14	50 / 25	N/A	7

Holding Times, Containers, and Preservations for Air/Vapor Samples

<u>Analysis</u>	<u>Method</u>	<u>Holding Time (days)</u>	<u>Minimum Volume (L)</u>	<u>Container</u>	<u>Preservation</u>
Fixed Gases	ASTM D1946-90(M)	3 / 30	1	Tedlar Bag / Summa Canister	Keep out of sunlight
Hydrocarbon Speciation	ASTM D2820-72(M)	3 / 30	1	Tedlar Bag / Summa Canister	Keep out of sunlight
Hydrogen Sulfide (H ₂ S)	EPA 16(M) GC/FPD	24 hours	1	Tedlar Bag / Silica Canister	Keep out of sunlight
Landfill Gases (NMOCs)	SCAQMD 25.1(M)	3 / 30	1	Tedlar Bag / Summa Canister	Keep out of sunlight
TPH(g)	TO-3(M)	3 / 30	1	Tedlar Bag / Summa Canister	Keep out of sunlight
VOCs	EPA TO-14A/TO-15	3 / 30	1	Tedlar Bag / Summa Canister	Keep out of sunlight



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