

LACHAT QuikChem® METHODS EQUIVALENT TO EPA REFERENCE METHODS

List of methods equivalent to referenced methods for the NPDES program of the USEPA

Analyte	Method No.	EPA Method or Reference #	Range	Method Detection Limit	Comments
Alkalinity	10-303-31-1-D	310.2	1 to 50 mg Ca CO ₃ /L	0.27 mg Ca CO ₃ /L	Methyl Orange
Ammonia	10-107-06-1-F	350.1	10 to 100 µg N/L	1.0 µg N/L	Alkaline Phenol based method; Low-flow method
	10-107-06-1-M		0.2-20 mg N/L	0.011 mg N/L	
	10-107-06-1-O		2 to 500 µg N/L	0.56 µg N/L	
	10-107-06-1-X		0.05 to 20.0 mg N/L	0.007 mg N/L	Alkaline Phenol based method; MICRO DIST® method, low-flow method
	31-107-06-1-B		5 to 600 µg NH ₃ -N/L	0.7 µg NH ₃ -N/L	Alkaline Phenol based method; Brackish or seawater matrix
	10-107-06-2-A		0.10 to 5.0 mg N/L	0.005 mg N/L	Sodium Salicylate based method
	10-107-06-2-L		0.05 to 20 mg N/L	0.01 mg N/L	Sodium Salicylate based method; Ultra High Throughput method (120 sample/hr)
Chloride	10-117-07-1-C	USGS I1187-85	0.1 to 10.0 mg Cl ⁻ /L	0.017 mg Cl ⁻ /L	Mercuric Thiocyanate method; Low-flow method
	10-117-07-1-E		5.0 to 2000 mg Cl ⁻ /L	0.6 mg Cl ⁻ /L	Mercuric Thiocyanate method
Chromium (VI)	10-124-13-1-B	218.1	2 to 200 µg Cr(VI)/L	0.27 µg Cr(VI)/L	
Cyanide	10-204-00-1-B	335.4	0.50 to 50.0 mg CN ⁻ /L	NA	0.25 M NaOH matrix following digestion
	10-204-00-1-F		50 to 500 mg CN ⁻ /L	NA	0.25 M NaOH matrix following digestion; Low-flow method
	10-204-00-1-X2		0.002 to 0.5 mg CN ⁻ /L	0.38 ug	MICRO DIST® method; Ultra High Throughput method (>125 samples/hr)
	10-204-00-5-A		2.0 to 400 µg CN ⁻ /L	0.65 µg CN ⁻ /L	Amperometric Detection with Ligand Exchange.

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In-Line Cyanide	10-204-00-2-C	335.3	2 to 100 µg CN ⁻ /L	0.21 µg CN ⁻ /L	In-Line Cyanide (total) method
	10-204-00-2-D		5 to 500 µg CN ⁻ /L	0.51 µg CN ⁻ /L	In-Line Cyanide (total) method
	10-204-00-2-E		2 to 100 µg CN ⁻ /L	0.5 µg CN ⁻ /L	In-Line Cyanide (total) method; Lower recovery of ferricyanide
Fluoride	10-109-12-2-B	340.2	1 to 1000 mg F ⁻ /L	0.14 mg F ⁻ /L	Ion Selective Electrode
	10-109-12-2-C		0.10 to 2.0 mg F ⁻ /L	0.02 mg F ⁻ /L	Ion Selective Electrode
	10-109-12-2-D		0.10 to 10.0 mg F ⁻ /L	0.03 mg F ⁻ /L	Ion Selective Electrode
Hardness, Total	10-301-31-1-C	130.1	125 - 1500 mg CaCO ₃ /L	17.0 mg CaCO ₃ /L	Calmagite
Kjeldahl Nitrogen (TKN)	10-107-06-2-H	351.2	0.1 to 5.0 mg N/L	0.034 mg N/L	Kjeldahl digests, Copper catalyst
	10-107-06-2-I		0.5 to 20.0 mg N/L	0.10 mg N/L	Kjeldahl digests, Copper catalyst
	10-107-06-2-K		0.1 to 20.0 mg N/L	0.0093 mg N/L	Kjeldahl digests, Mercury catalyst; Low-flow method
	10-107-06-2-N		0.5 to 20.0 mg N/L	0.02 mg N/L	Kjeldahl digests, Mercury catalyst; Ultra High Throughput method (>125 samples/hr)
	10-107-06-2-P		0.25 to 25 mg N/L	0.056 mg N/L	Kjeldahl digests, Copper digest. Ultra High Throughput method (>125 samples/hr).
Nitrate/Nitrite	10-107-04-1-D	353.2	0.5 to 50.0 mg N/L	NA	Cd reduction
	10-107-04-1-F		1 to 50.0 mg N/L	0.12 mg N/L	Cd reduction
	10-107-04-1-H		5 to 80.0 mg N/L	0.027 mg N/L	Cd reduction (dialysis)
	10-107-04-1-Q		5 to 800 µg N/L	0.49 µg N/L	Imidazole buffer (non-preserved & acid preserved samples); Low-flow method
	10-107-04-1-R		0.025 to 20 mg N/L	0.0012 mg N/L	Ultra High Throughput method (120 samples per hour)
	31-107-04-1-A	353.2	1.25 to 5.0 µM N	0.03 µM N	Cd reduction; Brackish or seawater matrix
	31-107-04-1-C		5.0 to 50.0 µM N	0.12 µM N	Cd reduction; Brackish or seawater matrix
	31-107-04-1-D		0.5 to 14 µg N/L	0.2 µg N/L	Cd reduction; Brackish or seawater matrix

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Nitrate/Nitrite	31-107-04-1-E	353.2	5 to 400 µg N/L	0.51 µg N/L	Brackish or seawater; 0.36 to 28.6 µM N
Nitrite	10-107-05-1-A	353.2	0.01 to 10.0 mg N/L	0.005 mg N/L	Nitrite only
	10-107-05-1-B		0.014 to 0.07 mg N/L	0.0004 mg N/L	Nitrite only; Low-flow method
	10-107-05-1-C		0.02 to 2.0 mg N/L	0.0016 mg N/L	Nitrite only; Low-flow method
	10-107-05-1-O		10 to 1000 µg NO ₂ ⁻ /L	4.0 µg NO ₂ ⁻ /L	Nitrite only; Low-flow method
	31-107-05-1-A		1.25 to 5.0 µM N	0.02 µM N	Nitrite only; Brackish or seawater matrix
Nitrogen	10-107-06-2-O	350.1	10 to 500 µg N/L	1.1 µg N/L	
	31-107-04-1-G		0.25 to 10 mg N/L	0.05 mg N/L	Ultra High Throughput method (120 samples per hour)
	31-107-06-1-F		0.005-2.0 mg N/L	0.0028 mg N/L	Alkaline Phenol based method; Brackish or seawater matrix
Phenolics	10-210-00-1-X	420.1	0.005 to 0.2 mg phenol/L	0.0034 mg phenol/L	MICRO DIST® method
	10-210-00-1-Y		0.5 to 50 mg phenol/L	0.4 mg phenol/L	MICRO DIST® method
In-Line Phenol	10-210-00-3-A	420.4	2 to 200 µg phenol/L	0.28 µg phenol/L	In-Line distillation for volatile phenolics
	10-210-00-3-B		5 to 500 µg phenol/L	3.0 µg phenol/L	In-Line distillation for volatile phenolics
o-Phosphate	10-115-01-1-O	365.1	1.0 to 20 mg P/L	0.0045 mg P/L	Ultra High Throughput method (>125 samples/hr)
	10-115-01-1-V		0.01 to 2.0 mg P/L	0.0012 mg P/L	Ultra High Throughput method (>125 samples/hr)
	31-115-01-1-G		2.0 to 10.0 µM P	0.02 µM P	Brackish or seawater matrix
	31-115-01-1-H		5 to 400 µg P/L	1.0 µg P/L	Brackish or seawater matrix
	31-115-01-1-I		1 to 100 µg P/L	0.25 µg P/L	Brackish or seawater matrix
	31-115-01-1-J		0.5 to 20 mg P/L	0.007 mg P/L	Brackish or seawater matrix
Total Kjeldahl Phosphorus	10-115-01-1-I	365.4	0.1 to 5.0 mg P/L	0.007 mg P/L	Molybdate-based method; Total P; Kjeldahl digests; Mercury catalyst; Ultra High Throughput method (>100 samples/hr)

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Total Phosphorus Acidic Persulfate	10-115-01-4-S	365.3	0.2 to 10 mg P/L	0.002 mg P/L	Total P; Potassium persulfate manual digest; Low-flow method
	10-115-01-4-I		0.2 to 20 mg P/L	NA	Molybdate-based method; Total P; Persulfate manual digests
Total Phosphorus Acidic Persulfate	10-115-01-4-U	365.3	0.01 to 0.2 mg P/L	0.0008 mg P/L	Molybdate-based method; Total P; Persulfate manual digests; Low-flow method
	31-115-01-4-A		12.5 to 400 µg P/L	1.66 µg P/L	Molybdate-based method; Total P; Acid persulfate manual digests; Brackish or seawater matrix
In-Line Phosphorus	10-115-01-3-A	365.3	0.1 to 10.0 mg P/L	0.007 mg P/L	Molybdate-based method; Total P; In-Line digestion
	10-115-01-3-B		0.1 to 4.0 mg P/L	0.01 mg P/L	Molybdate-based method; Total P; In-Line digestion
	10-115-01-3-C		0.05 to 1.0 mg P/L	0.0011 mg P/L	Molybdate-based method; Total P; In-Line digestion
	10-115-01-3-E		10 to 500 µg P/L	1.4 µg P/L	Molybdate-based method; Total P; In-Line digestion
	10-115-01-3-F		2 to 100 µg P/L	0.42 µg P/L	Molybdate-based method; Total P; In-Line digestion
	31-115-01-3-D		0.050 to 1.0 mg P/L	0.002 mg P/L	Molybdate-based method; Total P; In-Line digestion; Brackish or seawater matrix
Silicate	10-114-27-1-B	366.0	0.01 to 0.1 mg SiO ₂ /L	0.00078 mg SiO ₂ /L	Molybdate reactive
	31-114-27-1-A		20 to 100 µM Si	0.2 µM Si	Molybdate reactive; Brackish or seawater matrix
	31-114-27-1-B		1.25 to 5.0 µM Si	0.01 µM Si	Molybdate reactive; Brackish or seawater matrix
	31-114-27-1-D		10 to 1700 µg/L Si	1.43 µg/L Si	Molybdate reactive; Brackish or seawater matrix
Sodium	10-111-32-1-A	273.1	5.0 to 300 mg Na/L	1.2 mg Na/L	Flame emission method

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Sulfate	10-116-10-1-A	375.4	3.0 to 300 mg SO ₄ ²⁻ /L	0.95 mg SO ₄ ²⁻ /L	Turbidimetric method
	10-116-10-1-C		0.5 to 10.0 mg SO ₄ ²⁻ /L	0.2 mg SO ₄ ²⁻ /L	Turbidimetric method
	10-116-10-1-E		10 to 100 mg SO ₄ ²⁻ /L	0.6 mg SO ₄ ²⁻ /L	Turbidimetric method
	10-116-10-1-G		50 to 2000 mg SO ₄ ²⁻ /L	NA	Turbidimetric method; Low-flow method
	10-116-10-2-E	375.2	2 to 40 mg SO ₄ /L	0.36 mg SO ₄ /L	Methyl Thymol Blue Method
Sulfide	10-116-29-1-A	376.2	0.02 to 2.0 mg S/L	0.005 mg S/L	MICRO DIST® method; Methylene Blue method
	10-116-29-1-C		25 to 100 mg S/L	0.58 mg S/L	Distillation required
In-Line Sulfide	10-116-29-3-A	375.6	0.05 to 2.0 mg S/L	0.01 mg S/L	In-Line Distillation; Total Sulfide
	10-116-29-3-B		1.0 to 10.0 mg S/L	0.2 mg S/L	In-Line Distillation; Total Sulfide
In-Line Surfactants	10-306-00-1-C	425.1	0.010 to 1.0 mg/L	0.0029 mg/L	In-Line method; Dual extraction method.
	10-306-00-1-D		0.010 to 1.0 mg SDS/L	0.0024 mg SDS/L	In-Line method; Single extraction method