

QUAATRO METHODS



PARAMETER	SAMPLE	RANGE	NO	CHEMISTRY	HARDWARE
Alcohol	blood	0-1.3 to 0-6 g/L	QD-074-06	ADH, NAD	4.3" Dialyzer
Alkalinity	water	0-500 as CaCO ₃	Q-007-05	methylorange	12" dialyzer (MT9)
Alkalinity	water	0-80 to 0-500 mg/L as CaCO ₃	Q-021-04	methylorange	glassware
Ammonia	soil extracts	0-0.75/18 to 0-4/100 mg/L as N	Q-056-04	salicylate	12" dialyzer
Ammonia	water	0-0.3 to 0-7 mg/L as N	Q-022-04	phenate	glassware
Ammonia	water, seawater	0 - 10 µMol/L	J-131-07	phenate	HB 45°C
Ammonia	water, seawater	0-1 to 0-5 µMol/L	Q-080-06	fluorometer	HB 75°C
Ammonia	water, seawater	0-10/40 to 0 - 400/1800 µMol/L	Q-084-07	phenate	HB 75°C
Ammonia	water, seawater	0-5 to 0-225 µMol/L	Q-069-05-NIOZ	phenate	HB 75°C
Ammonia	water, seawater	0-5 to 0-260 µMol/L	Q-049-04	phenate, salicylate	glassware
Ammonia	water, seawater	0-5/240 and 0-20/900 µMol/L	Q-033-04	phenate, salicylate	HB 45°C
Ammonia	water, waste water, soil extracts	0-0.25/2 to 0-8/90 mg/L as N	Q-001-04	salicylate	12" dialyzer (MT9)
Calcium	water, acid digests	0-10 to 0-200 mg/L as Ca	Q-010-05	resolphtaleine complexone	12" dialyzer
Carbon, dissolved inorganic carbon, DIC	seawater	0-1 to 0-2 mMol/L	Q-046-04	phenolphtalein	6" dialyzer
Carbon, dissolved inorganic carbon, DIC	seawater	0-1 to 0-4 mMol/L	Q-067-05-NIOZ	phenolphtalein	6" dialyzer
Chloride	water	0-15 to 0-200 mg/L as Cl	Q-023-04	HgSCN	glassware
Chloride	water	0-2/ to 0-10/250 mg/L as Cl	Q-029-05	HgSCN	glassware
Chloride	water	0-2/ to 0-10/250 mg/L as Cl	Q-034-05	HgSCN	glassware
Chloride	water, waste water, soil extracts	0-9/60 to 0-110/650 mg/L	Q-006-04	HgSCN	12" dialyzer (MT9)
Chromium	water	0-400 to 0-6000 µg/L as Cr	Q-051-05	diphenycarbazide	glassware
Citric acid	wine	0 - 3 g/L as citric acid	Q-043-04	L-MDH, L-LDH, NADH, CL	glassware
Cyanide	water	0-50 µg/L	Q-100-08	chloramin-T, barbituric acid, pyridine	distillation 145°C
Cyanide	water	0-70 to 0-550 µg/L	Q-053-04	chloramin-T, barbituric acid, pyridine	distillation
Cyanide, free	water	0 - 100/500 to 0-500/2500 µg/L as CN	Q-061-05	chloramin-T, barbituric acid, pyridine	glassware
Ethanol	blood	0-1.3 to 0-6 g/L	Q-074-06	ADH, NAD	4.3"dial
Fluoride	water	0 - 1/50 to 0 - 3/15 mg/L as F	Q-062-05	alizarin complexone	glassware
Gluconic acid	wine	0 -3 g/L as gluconic acid	Q-045-04	ATP, gluc. Kinase, NADP, 6-PGDH	glassware
Glucose	wine	0-18 to 0-50 g/L as glucose	Q-040-04	HK, G-6-P-DH	1" dialyzer
Glucose+Fructose	wine	0-20 to 0-50 g/L as glucose/fructose	Q-041-04	HK, G-6-P-DH, PGI	1" dialyzer
Hardness	water	0-200/400 mg/L as CaCO ₃	Q-059-05	calmagite	glassware
Hardness	water	0-70 to 0-500 mg/L as CaCO ₃	Q-012-05	calmagite	12" dialyzer
Iron	acid solution	0-0.5/5 mg/L Fe	Q-097-08	ferrozine, acetic acid	glassware
Lactic acid	wine	0-1 to 0-8 g/L	Q-063-05	L-LDH, GPT, Meldola Blue	
Malic acid	wine	0-1.3 to 0-8 g/L as malic acid	Q-039-04	L-MDH, GOT, Meldola Blue	4.3" dialyzer
Nicotine	tobacco	0-100 to 0-745 mg/L	Q-082-06	sulfanilic acid, KCN, chloramine T	

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Nicotine	tobacco	0-160 to 0-320/800 mg/L	Q-075-06	sulfanilic acid, KCN, chloramine T	
Nitrate	soil extracts	0-0.75/27 to 0-4/110 mg/L as N	Q-057-04	hydrazine sulfate, NEDD	12" dialyzer
Nitrate and Nitrite (T.O.N.)	water, waste water, soil extracts	0-0.25/0.8 to 0-3/30 mg/L as N (T.O.N.)	Q-002-04	hydrazine sulfate, NEDD	12" dialyzer (MT9)
Nitrate/Nitrite	tobacco	0-10 to 0-120 mg/L	Q-081-06	hydrazine sulfate NEDD	4.3" dialyzer
Nitrate/Nitrite	water	0-0.2 to 0-5 mg/L as N	Q-020-04	hydrazine sulfate, NEDD	glassware
Nitrate/Nitrite	water	0-01.5 to 0-4.5 mg/L as N	Q-044-04	Cd, NEDD	glassware
Nitrate/Nitrite	water, seawater	0 - 10 µMol/L	J-130-07	Cd, NEDD	glassware, Cd coil
Nitrate/Nitrite	water, seawater	0 - 5 to 0 - 250 µMol/L	Q-068-05-NIOZ	Cd, NEDD	glassware; Cd-coil
Nitrate/Nitrite	water, seawater	0-1.2 to 0-55 µMol/L	Q-047-04	Cd, NEDD	glassware
Nitrate/Nitrite	water, seawater	0-35/140 to 0-1750/5600 µg/L as N	Q-035-04	Cd, NEDD	glassware
Nitrate/Nitrite	water, waste water	0 - 10 to 0 - 100 mg/L as N	Q-073-06	Cd, NEDD	glassware
Nitrate/Nitrite	water, waste water, soil extracts	0-0.08/0.6 to 0-3/30 mg/L as N	Q-003-04	Cd, NEDD	12" dialyzer (MT9), Cd coil
Nitrite	water	0 - 0.07 / 3 mg/L N	G-102-09	NEDD	glassware
Nitrite	water	0-0.2 to 0.4 mg/L as N	Q-019-04	NEDD	glassware
Nitrite	water, seawater	0 - 14 to 0 - 560 µg/L as N	Q-070-05-NIOZ	NEDD	glassware
Nitrite	water, seawater	0 - 2 µMol/L	J-129-07	NEDD	glassware
Nitrite	water, seawater	0-1.5/4 to 0-57/200 µMol/L	Q-030-04	NEDD	glassware
Nitrite	water, seawater	0-14 to 0-770 µg/L as N	Q-054-04	NEDD	glassware
Nitrogen, total Kjeldahl	acid digests	0-0.2 to 0-7.5 mg/L as N	Q-024-04	salicylate	glassware
Nitrogen, total Kjeldahl	acid digests	0-0.2/1.5 to 0-5.5/45 mg/L as N	Q-016-05	salicylate	12" dialyzer (MT9)
Nitrogen, total Kjeldahl	acid digests	0-30 to 0-1000 µMol/L as N	Q-036-05	salicylate	glassware
Phenol	water	0 - 200/1100 to 0 - 7500/42999 µg/L Phenol	Q-060-05	ferricyanide, 4-aminoantipyrine	glassware
Phenol	water	0-0.2 mg/L	Q-101-08	ferricyanide, 4-aminoantipyrine	distillation
Phenol	water	0-250 to 0-7500 µg/L as Phenol	Q-052-04	ferricyanide, 4-aminoantipyrine	distillation
Phosphate	water	0-0.4 to 0-12 mg/L as P	Q-025-04	molybdate	glassware
Phosphate	water	0-1.5 to 0 - 10 mg/L as P	Q-072-05	molybdate	glassware
Phosphate	water	0-38 to 0-300 mg/L as P2O5	Q-071-05	molybovanadate	glassware
Phosphate	water, seawater	0 - 4 µMol/L	J-132-07	molybdate	glassware
Phosphate	water, seawater	0 - 46 to 0 - 124 µg/L	Q-064-05-NIOZ	molybdate	glassware
Phosphate	water, seawater	0-11 to 0-350 mg/L P	Q-094-08	molybdate	6" dialyzer
Phosphate	water, seawater	0-155/600 to 2400/7700 µg/L as P	Q-037-05	molybdate	glassware
Phosphate	water, seawater	0-62 to 0 - 3100 µg/L as P	Q-048-04	molybdate	glassware
Phosphate	water, seawater	0-62/248 to 0-3000/12000 µg/L as P	Q-031-04	molybdate	glassware
Phosphate	water, waste water, soil extracts	0-0.35/5 to 6/100 mg/L as P	Q-004-04	molybdate	12" dialyzer (MT9)
Phosphorus, total in microwave digests	microwave digests	0-2/8 to 0-100/400 µmol/L as P	Q-032-05	molybdate	glasware

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Phosphorus, total Kjeldahl	acid digests	0-0.25 to 0-1 mg/L as P	Q-085-07	molybdate	glassware
Phosphorus, total Kjeldahl	acid digests	0-0.35/5 to 0-10.5/165 as P	Q-017-05	molybdate	12" dialyzer (MT9)
Phosphorus, total Kjeldahl	acid digests	0-0.5 to 0-12 mg/L as P	Q-026-04	molybdate	glassware
Silicate	water	0-0.21/5.35 to 1.34/16.05 mg/L as SiO ₂	Q-098-08	molybdate	glassware
Silicate	water	0-1.5 to 0-75 mg/L as SiO ₂	Q-027-04	molybdate	glassware
Silicate	water, seawater	0 - 72 µMol/L	J-133-07	molybdate	glassware
Silicate	water, seawater	0.3 to 0 - 4.2 mg/L	Q-050-04	molybdate	glassware
Silicate	water, seawater	0-0.3 to 0-10 mg/L as SiO ₂	Q-066-06-NIOZ	molybdate	glassware
Silicate	water, seawater	0-0.3/1 to 0-4.2/12 mg/L as SiO ₂	Q-038-04	molybdate	glassware
Silicate	water, seawater	0-20/1000 µMol/L SiO ₂	Q-093-08	molybdate	glassware
Silicate	water, waste water, soil extracts	0-0.5/6.5 to 60/650 mg/L as SiO ₂	Q-005-04	molybdate	12" dialyzer (MT9)
Sugar, reducing	tobacco	0-2000 to 0-6000 mg/L as glucose	Q-086-07	ferricyanide	6" dialyzer, 93°C HB
Sugar, reducing	tobacco	0-850 to 0-3000 mg/L as glucose	Q-077-06	ferricyanide	
Sugar, reducing	wine	0-1 to 0-15 g/L as glucose or	Q-042-04	neocuproine	1" dialyzer, 93°C HB
Sugar, total	tobacco	0 - 200 to 0 - 400 mg/L	Q-083-06	invertase, PAHBAH	85° Heating bath
Sugar, total	tobacco	0-850 to 0-3000 mg/L as glucose	Q-076-06	ferricyanide	
Sulfate	water	0.1 to 10 mg/L as SO ₄	Q-055-05	cation-exchange column, BaCl ₂ , MTB	ion exchange column
Sulfate	water, seawater	0-0.25 to 0-75 mg/L SO ₄	Q-087-07	cation-exchange column, BaCl ₂ , MTB	ion exchange column
Sulfide	water, seawater	0-1.1 to 0-10.2 as S	Q-065-05-NIOZ	dimethyl-phenylene-diamine 2HCl, FeCl ₃	glassware
Sulfur dioxide, total	wine	0-25 to 0 - 100 mg/L as SO ₂	Q-079-06	alk hydrolyse, p-rosaniline	sparging, 85° heating bath
Sulfur dioxide, total and free	wine	0-40 to 0 - 400 mg/L as SO ₂	Q-028-04	alk hydrolyse, p-rosaniline	1" dialyzer
Sulfur dioxide, free	wine	0-25 to 0 - 100 mg/L as SO ₂	Q-078-06	alk hydrolyse, p-rosaniline	sparging
Surfactants, Anionic	water	0-250 / 1000 µg/L	Q-099-08	chloroform, methylene blue	extraction coils, 2 phase separators
Volatile Acidity	wine	0-0.2 to 0-1.0 g/L as acetic acid	Q-058-05	distillation, KI/KIO ₃	distillation
Volatile Acidity	wine	0-1 g/L acetic acid	Q-095-08	distillation, KI/KIO ₃	distillation