

Recipes for Anion Analysis on Dionex 4000i IC

(Rev. A: 03July01)

Regenerant: add 5.6 mL concentrated sulfuric acid to 4 L nanopure water in regenerant carboy. Mix well.

0.56 M Sodium Carbonate Stock Solution: dissolve 29.67g sodium carbonate (Na_2CO_3) in ~400 ml nanopure water. Q.S. to 500 mL final volume.

0.16M Sodium Bicarbonate Stock Solution: dissolve 6.72g sodium carbonate (NaHCO_3) in ~400 ml nanopure water. Q.S. to 500 mL final volume.

Eluant 1 (3.5 mM Sodium Carbonate / 1.0 mM Sodium Bicarbonate): add 25 ml each of the above stocks to 3950 mL nanopure water in eluant carboy. Mix well.

Eluant 2 (4.9 mM Sodium Carbonate / 0.6 mM Sodium Bicarbonate): add 35 mL of above sodium carbonate stock and 15 ml of above sodium bicarbonate stock to 3950 mL nanopure water in eluant carboy. Mix well.

Stock Calibration Standard Solutions

Bromide (Br^-) 1000 mg/L: Dissolve 0.1288 g sodium bromide (NaBr , - CASRN 7647-15-6) in nanopure water and dilute to 100 mL in a volumetric flask.

Chlorate (ClO_3^-) 1000 mg/L: Dissolve 0.1275 g of sodium chlorate (NaClO_3 , CASRN 7775-09-9) in nanopure water and dilute to 100 mL in a volumetric flask.

Chloride (Cl^-) 1000 mg/L: Dissolve 0.1649 g sodium chloride (NaCl , CASRN 7647-14-5) in nanopure water and dilute to 100 mL in a volumetric flask.

Fluoride (F^-) 1000 mg/L: Dissolve 0.2210 g sodium fluoride (NaF , CASRN 7681-49-4) in nanopure water and dilute to 100 mL in a volumetric flask.

Nitrate (NO_3^- -N) 1000 mg/L: Dissolve 0.6068 g sodium nitrate (NaNO_3 , CASRN 7631-99-4) in nanopure water and dilute to 100 mL in a volumetric flask.

Nitrite (NO_2^- -N) 1000 mg/L: Dissolve 0.4926 g sodium nitrite (NaNO_2 , CASRN 7632-00-0) in nanopure water and dilute to 100 mL in a volumetric flask.

Phosphate (PO_4^{3-} -P) 1000 mg/L: Dissolve 0.4394 g potassium dihydrogenphosphate (KH_2PO_4 , CASRN 7778-77-0) in nanopure water and dilute to 100 mL in a volumetric flask.

Sulfate (SO_4^{2-}) 1000 mg/L: Dissolve 0.1814 g potassium sulfate (K_2SO_4 , CASRN 7778-80-5) in nanopure water and dilute to 100 mL in a volumetric flask.

NOTE: Stability of standards: Stock standards for most anions are stable for at least 6 months when stored at 4°C. Except for the nitrite and phosphate standards which are only stable for 1 month when stored at 4°C. Dilute working standards should be prepared monthly, except those that contain nitrite or phosphate which should be prepared fresh daily.

Internal Standard Stock Solutions

Bromide (Br⁻) 5000 mg/L: Dissolve 0.6440 g sodium bromide (NaBr, - CASRN 7647-15-6) in nanopure water and dilute to 100 mL in a volumetric flask.

Chlorate (ClO₃⁻) 5000 mg/L: Dissolve 0.6375 g of sodium chlorate (NaClO₃, CASRN 7775-09-9) in nanopure water and dilute to 100 mL in a volumetric flask.

Fluoride (F⁻) 5000 mg/L: Dissolve 1.105 g sodium fluoride (NaF, CASRN 7681-49-4) in nanopure water and dilute to 100 mL in a volumetric flask.

External Source QC Check: Use VHG Labs Multi Ion Standard #3. Dilute to concentration within range of standards if necessary. If undiluted, use only in 0.5 mL vials.