Cadmium

Function: Differential Pulse Stripping Voltammetry (DPS/a)

Start Potential (mV)	-800
End Potential (mV)	-200
Current range	1,024 µA
Scan Speed (mV/s)	30
Deposition time (s)	120
Deposition Pot. (mV)	-800
Number of cycles	3
Delay before sweep (s)	5
Purge and stir time (s)	20
Stirring speed (rpm)	300
Drop Size (a.u.)	60

Cadmium concentrated standard solution (1 g/l)
Dissolve 1 g of Cadmium in a minimum volume of 6 M HCl. Bring to volume in a 1 l volumetric flask with 1% HCl.

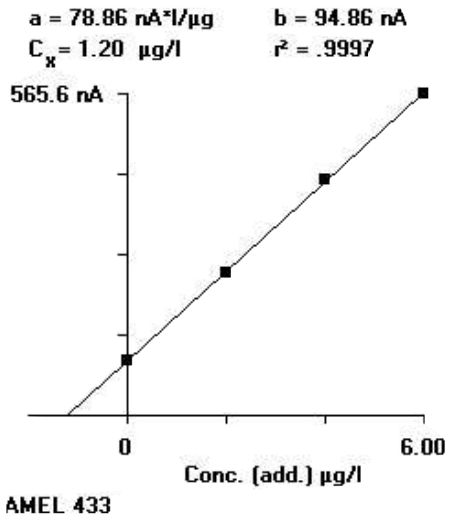
Supporting Electrolyte
A- **65% HNO_3**
B- **1 M $H_2C_2O_4$ and 2 M HCl solution**. Dissolve 90 g of $H_2C_2O_4$ (or 126 g of $H_2C_2O_4 \cdot H_2O$) and 167 ml of 37% HCl in 1 l of distilled water. Store in a polythene bottle.

Procedure
Add 10 µl of 65% HNO_3 to 10 ml of neutralised sample.
Alternatively: add 1 ml of B solution (especially if copper has to be analysed in the same solution).
Analyse sea water, high salt content sample and acidic solution (at pH between 1 and 3) avoiding the addition of the supporting electrolyte.
Samples at pH above 7 are to be neutralised before the addition of the supporting electrolyte.

Working standard solution (0.2 mg/l)
Dilute 20 µl of Cd concentrated standard solution in 100 ml of distilled water, in a volumetric flask. Add also 100 µl of 1 g/l Pb standard solution if lead has to be analysed in the same scanning.

Alternative supporting electrolytes
HCl or KCl or NaCl solution from 0.1 up to 1 M
0.1 M Acetate buffer pH 4.5 or 0.1 M citrate buffer a pH 3
0.1 M Tartrate buffer H 9 (when zinc has to be analysed in the same solution)

Analytical report
Analysis: tap water
Sample Concentration = 1.20 µg/l
Method: 3 additions



Volumes Table

Solvent Volume	0 (ml)
Supporting Sol.	0.01 (ml)
Sample Volume	10 (ml)
Standard Conc.	200 (µg/l)

Height Table

#	Peak Pot.	Height
0	-517.9	94.32 nA
1	-517.3	248.2 nA
2	-519.4	406.2 nA
3	-520.3	548.5 nA

Regression Data

#	Add.Conc.	Height x dilution
0	0 µg/l	94.42 nA
1	2.00 "	251.0 nA
2	4.00 "	414.8 nA
3	6.00 "	565.6 nA

y = ax + b
a = 78.86 nA*l/µg
b = 94.86 nA
r^2 = .9997