Nickel

Metodo alla Dimetilgliossima in tampone tartrato 0.1 M a pH 9
Function: Differential Pulse Voltammetry (DPV/a)

Start Potential (mV)	-700
End Potential (mV)	-1300
Current range	2,048
Scan Speed (mV/s)	50
Number of cycles	3
Delay before sweep (s)	5
Purge and stir time (s)	300
Stirring speed (rpm)	300
Drop Size (a.u.)	60

Nickel concentrated standard solution (1 g/l)
Dissolve 1 g of Cobalt in a minimum volume of 8 M HNO_3. Bring to volume in a 1 l volumetric flask with 1% HNO_3.

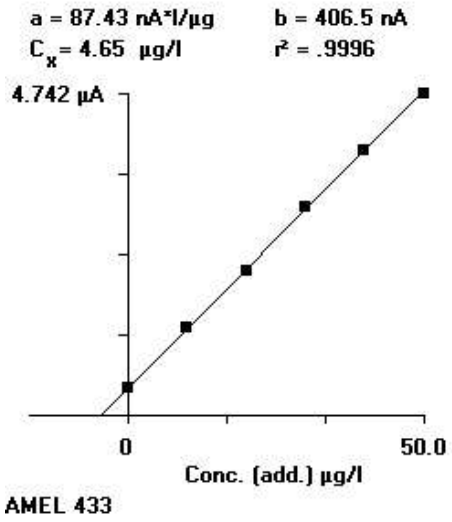
Supporting Electrolyte
1 –Tartrate buffer 1 M, pH 9
Dissolve 15 g of tartaric acid in 50 ml of distilled water. Add 26% NH_3 until pH 9.
Bring to volume with distilled water, in a 100 ml volumetric flask
2 – 1% dimetilglioxime solution
Dissolve 100 mg of dimetilglioxime in 10 ml of ethanol. Prepare the solution at the moment of analysis.
3- 5 M $NaNO_2$ solution
Dissolve 34.5 g of $NaNO_2$ in 100 ml of distilled water.

Procedure
To 10 ml of sample solution add 1 ml of tartrate buffer solution, 100 µl of dimetilglioxime solution and 500 µl of $NaNO_2$ solution.

Working standard solution (1 mg/l)
Dilute 1+999 the concentrated standard solution with distilled water. Prepare the solution at the moment of the analysis.

Warnings
Alternative buffer solution, same pH: PIPES o HEPES.
If sample concentration is below 1 µg/l it is better to make a stripping voltammetry setting a deposition time of 30 – 120 s and a deposition potential of –700 mV.

Analytical Report
Analysis: Nickel in deep water
Sample Concentration = 4.65 µg/l
Method: 5 additions



Volumes Table

Solvent Volume	0 (ml)
Supporting Sol.	1.05 (ml)
Sample Volume	10 (ml)
Standard Conc.	1000 (µg/l)

Peak Height

#	Peak Pot.	Height
0	-920.8	359.3 nA
1	-918.6	1.151 µA
2	-920.8	1.906 µA
3	-921	2.730 µA
4	-920.8	3.436 µA
5	-918.6	4.123 µA

Regression Data

#	Add Conc.	Height x dilution
0	0 µg/l	395.3 nA
1	10.0 "	1.278 µA
2	20.0 "	2.136 µA
3	30.0 "	3.085 µA
4	40.0 "	3.918 µA
5	50.0 "	4.742 µA

y = ax + b
a = 87.43 nA*l/µg
b = 406.5 nA
r^2= .9996