Vanadium

Method: Chloranilic acid in 0.1 M acetate buffer, pH 4.5
Function: Differential Pulse Stripping Voltammetry (DPS/a)

Start Potential	(mV)	-250
End Potential	(mV)	-700
Current range		2,048 µA
Scan Speed	(mV/s)	20
Deposition time	(s)	30
Deposition Pot.	(mV)	-250
Number of cycles		3
Delay before sweep	(s)	5
Purge and stir time	(s)	20
Stirring speed	(rpm)	300
Drop Size	(a.u.)	30

Vanadium concentrated standard solution (1 g/l)
Dissolve 1.7852 g of V_2O_5 in 10 ml of 65% HNO_3. Bring to volume in a 1 l volumetric flask with distilled water. (MM_{V2O5} = 181.88; MM_V = 50.94).

Supporting Electrolyte
1- Acetate buffer, pH 4.5 - 0.1 M solution
Dissolve 8.2 g of anhydrous CH_3COONa (or 13.6 g of $CH_3COONa{\cdot}3H_2O$) in 800 ml of distilled water. Add 5.75 ml of glacial CH_3COOH. Check and adjust the pH. Bring to volume with distilled water, in a 1 l volumetric flask
2- 0.2 % Chloranilic acid in ethanol

Procedure
Add 2 ml of acetate buffer and 200 µl of chloranilic acid solution to 10ml of neutralised sample.

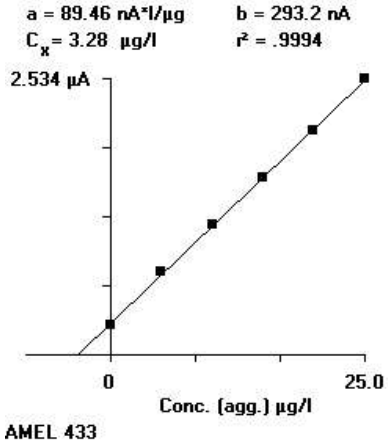
Working standard solution (1 mg/l)
Dilute the concentrated standard solution 1+999 in distilled water, at the moment of the analysis.

Determination of Vanadium in hydrocarbons

Analyse vanadium after a dry digestion according to UNI 7342 procedure. Dissolve the ashes in 10% HCl.

Treatment for oil products
Pour 50 ml of gasoline or kerosene or diesel fuel (or 50 g of oil or lubricant oil) in a crucible.
Let stand to evaporate one night in a aspirating hood.
Gently and slowly burn the residue with a flame.
Ash in a muffle at 600°C.
Cool and add 10 ml of 10% HCl to the ashes. Dissolve and pour the solution in a 50 ml volumetric flask.
Rinse the crucible with distilled water in the same volumetric flask, and, finally, bring to volume.

Analytical report
Analysis: Diesel fuel
Sample concentration = 3.28 µg/l
Method: 5 additions



Volumes Table

Solvent Volume	0 (ml)
Supporting Sol.	2.9 (ml)
Sample Volume	10 (ml)
Standard Conc.	1000 (µg/l)

Height Table

#	Peak Pot.	Height
0	-520.5	207.2 nA
1	-516.8	593.0 nA
2	-519.1	924.1 nA
3	-511.3	1.251 µA
4	-516.8	1.575 µA
5	-516.8	1.927 µA

Regression Data

#	Add.Conc.	Height x dilution
0	0 µg/l	267.4 nA
1	5.00 "	768.0 nA
2	10.0 "	1.201 µA
3	15.0 "	1.634 µA
4	20.0 "	2.064 µA
5	25.0 "	2.534 µA

y = ax + b
a = 89.46 nA*l/µg
b = 293.2 nA
r^2= .9994