

Description

Pipette out 25 cm³ of Ferrous ammonium sulphate solution in a clean beaker. Add 1 test tube of dil. sulphuric acid. Dip the electrode assembly into the solution and connect to a potentiometer. Measure the potential. Add 0.2 cm³ of Potassium dichromate from a burette, stir the solution well and measure the potential. Continue the process till the potential shows a tendency to increase rapidly. Now add dichromate in increments of 0.2 cm³ and measure the potential after each addition. Plot a graph of AE/AV against volume of dichromate added as shown in the figure and find out the end point. Calculate the normality of the ferrous solution and determine the amount of iron in the given volume.

Equivalence point unknown volume

Volume of K, Cr, O in cm

Volume of K, Cr, O required for the reaction V_{cm} (From graph) was $(NV)_{K, Cr, O}$

Amount of iron presented in 1000 cm of its solution = $\frac{\text{mass of iron}}{\text{volume of solution}} \times \text{gram equivalent weight of Iron} = \frac{B}{A} \times 55.85$

Model¹ Procedure/Flow Chart: Pette Onb 2 SG PFea0S eummap
Slphnk inaClan aales
'Acked 1 tet4be oP dilJe lphuwie a1
Filke busetlewiH Potassium diohsomato.
Tark D p te glassandelainnm eleCJA k end En e He
nding WW Om PotendiomnL
Add on3 eaog adAKV
P1 Pnd epio

Take tle_gendiry
Contine i;_{1/2}kg₄adding o2 en kC
tate He aevdngs.

Pl.tJ-ph sE agnve voome o ECA
added n nd t te ad po
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s lniond ten nd amound iaon iren valhro.

Model graph:

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valen_{ce} point(unt^{wn}n

Model Calculation:

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NFA NVKa,3 N.an
VFAS

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ivalend_{weih}f

Tabulation:

Volume of K,Cr,O added in cm	Potential (E) In mV	AE	AV	AE/AV
0.0	23			
0.2	27		o 2	25
0.4	2 D		o 2	1o
0.6	3 o 6		. 2	
0.8	39	I 3	o 2	6S
1.0	33	12	. 2	
1.2	34o		o 2	
1.4	35	I 2	o 2	
1.6	3 66		e 2	
1.8	284	8	o 2	
2.0	4 5	2	o 2	1oS
2.2	3	348	o 2	1t4
2.4		72	2	36o
	P 25		o 2	So
2.6	35		o 2	
2.8	846		o 2	SS
3.0	955		0.2	5
3.2			o : 2	35
3.4	962-			
3.6				

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poin

Volme

C

Calculation:

volume

k, Ca

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Noamal

$$FAS = 2CCm$$

$$NAmaly \quad \circ \quad FAS = \frac{CM}{V} V_{\circ}, \quad 22 \times 10^{04} 89$$

$$00f_s$$

Ame n oP IAn pepad in 08CmPFor N asvemeg
 Inference 04Sx5S.9So.4 e

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elvalenlpiaad all FQ7ton ANe Gnvad
 Relevance to Society & Environment:
 penmeJes Aedes e Pndinin
 AeSaies

S ennimelly p*AJ 4 lce Penien we JP FZ
 Report Amount of Iron present in 1000 cm of FAS solution 4 s

Evaluation of Experiment-4

Marks

Components	Max	Obtained
Model Procedure,		
Model Graph 8*		
Calculation		
Equivalence Point &		
Execution	20	
Inference & Societal		
Relevance		03
Total		
Signature of Teacher		