

Oxidation Reduction Analysis

Date: _____

Name: _____

OBJECT: To quantitatively determine the % Iron in an Unknown Iron sample.

PROCEDURE: As in the Chemistry 1210 lab manual, page 38-39.

OBSERVATIONS:

DATA:

Standardization of KMnO_4

Mass Full Vial + Sample	Mass Vial + Sample after Flask 1	Mass Vial + Sample after Flask 2	Mass Vial + Sample after Flask 3	Mass Vial + Sample after Flask 4 (if required)

	Mass $\text{Na}_2\text{C}_2\text{O}_4$	Initial Volume KMnO_4	Final Volume KMnO_4	Volume KMnO_4 Delivered	Endpoint Shade and Colour	$\frac{\text{Volume Delivered}}{\text{Mass of Sample}}$
1						
2						
3						
4						

Determination of % Iron in an unknown Iron Sample

Unknown # _____

Mass Full Vial + Iron Sample	Mass Vial + Sample after Flask 1	Mass Vial + Sample after Flask 2	Mass Vial + Sample after Flask 3	Mass Vial + Sample after Flask 4 (if required)

	Mass Unknown Iron Sample	Initial Volume KMnO ₄	Final Volume KMnO ₄	Volume KMnO ₄ Delivered	Endpoint Shade and Colour	$\frac{\text{Volume Delivered}}{\text{Mass of Sample}}$
1						
2						
3						
4						

CALCULATIONS:

Calculate the percent difference between the largest ratio and the smallest ratio for each set of titrations. If these values are greater than 1%, find a pair or set of ratios for each set of titrations which *are* within 1%.

Show a sample calculation for the molarity of the standardized KMnO_4 solution.

Trial	1	2	3	4	Average
[KMnO_4]					
Was run used to calculate average?					

Show a sample calculation for the % Iron in the unknown iron sample.

Trial	1	2	3	4	Average
% Iron					
Was run used to calculate average?					

RESULTS:

[KMnO ₄]	% Fe in Unknown # _____

DISCUSSION:

CONCLUSION:

QUESTIONS: