

Chem lab Notebook 1007 : Oxidation - Reduction Titration (Analysis of Bleach)

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Purpose: To understand how redox reactions can be used to solve calculations.

Procedure: Refer to lab Manual # 7: Oxidation - Reduction Titration (Analysis of Bleach)

Reference : Lund. K, Experiment #7 Oxidation - Reduction Titration (Analysis of Bleach), Chem 1007 Lab Manual, Nipissing University.

Materials :

Tabel.1: Part A Standardization of sodium thiosulfate

<u>Trail #</u>	<u>Initial Volume</u>	<u>End Volume</u>	<u>Volume used</u>	<u>[sodium Thiosulfate]</u>
Trail #1	0.9ml	22.6	21.7	4.15×10^{-5}
Trail #2	22.6ml	40.5	17.9	5.03×10^{-5}
Trail #3	66.4ml	44.2	22.2	4.05×10^{-5}

	<u>Average concentration</u>	<u>Standard deviation</u>
Sodium Thiosulfate	1.32×10^{-4}	-2.0×10^{-4}

Table.2: Part B Analysis of Bleach

<u>Trail #</u>	<u>Volume NaOCl Used</u>	<u>Mass of Bleach</u>	<u>Mass of Sodium Hypochlorite</u>	<u>% Mass</u>
Trail #1	6.3ml	0.4622	9.73×10^{-3}	2.1%
Trail #2	6.2	0.4666	1.16×10^{-2}	2.49%
Trail #3	6.5	0.4664	9.80×10^{-3}	2.1%

	<u>Average []</u>	<u>Standard deviation</u>
Bleach	2.78×10^{-4}	7.33×10^{-2}

Observations:

Part A: Standardization of sodium thiosulfate

<u>Trail #</u>	<u>Initial Volume</u>	<u>End Volume</u>
Trail #1	0.9ml	22.6
Trail #2	22.6ml	40.5
Trail #3	66.4ml	44.2

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Part B: Analysis of Bleach

<u>Trail #</u>	<u>Initial volume of NaOCl</u>	<u>End Volume of NaOCl</u>	<u>Mass of Bleach</u>
Trail #1	21.0ml	27.3ml	0.4622
Trail #2	27.3ml	33.5ml	0.4666
Trail #3	33.5ml	40.0ml	0.4664