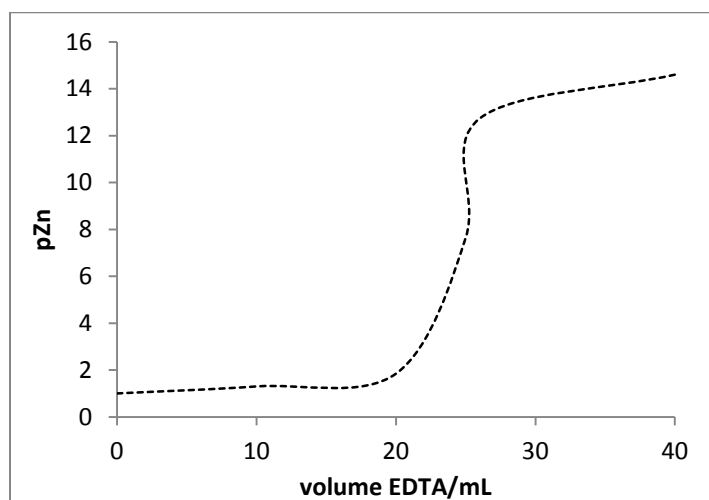


EDTA

1. Look at stability constants for the formation of the metal-EDTA complexes and see which is stronger. The bigger the constant – displacement occurs.
2. @pH 4: $\text{Pb}^{2+} = 6.03 \times 10^{-16} \text{ M}$ @pH 8: $\text{Pb}^{2+} = 5.09 \times 10^{-9} \text{ M}$
3. For 0.2 M EDTA and 0.1 M Zn:
 - a) 0 mL of EDTA solution: $\text{pZn} = 1$
 - b) 10.00 mL of EDTA solution: 1.3
 - c) 20.00 mL of EDTA solution: 1.845
 - d) 25.00 mL of EDTA solution: 7.65
 - e) 26.00 mL of EDTA solution: 12.73
 - f) 40 mL of EDTA solution: 13.9
 - g) Sketch a labelled titration curve.



4. With a lower $[\text{Zn}^{2+}]$, pZn will be larger. Higher pH starting point will be a good indicator of the lower concentration.
5.
 - a) Lecture slides
 - b) Lecture slides – error & stats
6. % Cu = 12.45%
%Fe = 21.26%
7. Ca: 0.01667 M Mg: 0.004854 M

Redox and Precipitation Titrations

1. a), b), c) – Lecture notes

d) $\text{Cl} = 11.98 \%$.

e) Lecture notes

2. $\text{NaI} = 83.58\%$

3.

a) $\text{Mass Cl} = 0.1053 \text{ g}$

b) 4.213 g L^{-1}

c) , d), e) f) – Lecture notes

4.

a) 10.00 mL of AgNO_3 solution $\text{pAg} = 8.37$

b) 24.90 mL of AgNO_3 solution $\text{pAg} = 6.04$

c) 25.00 mL of AgNO_3 solution $\text{pAg} = 4.87$

d) 25.10 mL of AgNO_3 solution $\text{pAg} = 3.69$

e) 30.00 mL of AgNO_3 solution $\text{pAg} = 2.04$

5.

a) $[\text{Ag}^+] = 1.35 \times 10^{-5} \text{ mol L}^{-1}$.

b) $[\text{CrO}_4^{2-}] = 1.96 \times 10^{-3} \text{ M}$

c) No, only just after equivalence point.

6.

a) $\% \text{KH}_2\text{PO}_4 = 66.2\%$

b) Form a stable, weighable complex. Waters of hydration problematic to weigh

7. $\% \text{w/w} = 4.17\% \text{As}_2\text{O}_3$