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**SSERC Risk Assessment** (revised version March 2018)

(based on HSE’s INDG 163 ‘Risk assessment - A brief guide to controlling risks in the workplace’)

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| Activity assessed | Determination of an Equilibrium Constant |
| *Date of assessment* | 8th October 2019 |
| *Date of review (****Step 5****)* |  |
| *School* |  |
| *Department* |  |

| Step 1 | Step 2 | Step 3 | Step 4 | | |
| --- | --- | --- | --- | --- | --- |
| *List Significant hazards here:* | *Who might be harmed and how?* | *What are you already doing?*  *What further action is needed?* | *Actions* | | |
| *by whom?* | *Due date* | *Done* |
| Iron II sulphate is harmful if swallowed and a skin/eye irritant.  The 0.1 mol l-1 solution is of no significant hazard. | Technician while preparing solution by splashing | Wear eye protection and consider gloves. |  |  |  |
| Silver nitrate is corrosive to skin and eyes.  The 0.1 mol l-1 solution is a skin/eye irritant. | Technician while preparing solution and teacher/pupils carrying out experiment by splashes | Wear goggles (BS EN 166 3) and gloves.  Wear eye protection and consider gloves. |  |  |  |
| Potassium thiocyanate is harmful by all routes and releases toxic gases in contact with strong acids.  The 0.02 mol l-1 solution is of no significant hazard. | Technician while preparing solution by splashing | Wear eye protection and consider gloves. Keep away from acids. |  |  |  |

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| **Description of activity:**  **Description of activity:**   1. Iron II sulphate and silver nitrate solutions are mixed and left for a week for the slow reaction to proceed to equilibrium   The mixture is titrated against potassium thiocyanate solution to determine the silver concentration from which it is possible to calculate the iron concentration. |

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| **Additional comments:**  Be careful not to disturb the sediment when extracting samples to titrate.  Once equilibrated, the mixture will keep almost indefinitely in the dark. |