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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 | Equilibrium and le Chatelier |
| *Date of assessment* | 8th December 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* |
| Cobalt II chloride is a carcinogen, reproductive toxin and sensitiser. | Technician preparing solution  Demonstrator carrying out experiment.  Both particularly by inhalation. | Avoid raising dust or droplets. Wear eye protection and gloves to prepare solution from the powder.  Avoid splashes. If any solution gets on skin wash off immediately with copious quantities of water. |  |  |  |
| Hydrochloric acid is corrosive (liquid & vapour). | Technician preparing solution by splashes | Wear nitrile gloves and goggles (BS EN166 3). |  |  |  |

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| **Description of activity:**  A heated solution of cobalt II chloride is cooled and has concentrated hydrochloric acid added.  Some of the solution is placed in a test tube in an ice bath with a polystyrene lid. The top half of the tube is heated with a hair-dryer while the ice keeps the bottom half cool. The two halves of the test tube go different colours. |

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| **Additional comments:**  A safer, though not quite as good, alternative uses copper chloride, balancing between the green chloride complex and the blue water complex. |