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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 | Analysis of iron in tea |
| *Date of assessment* | 21st March 2014 |
| *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* |
| Burning Tea produces irritating smoke\* | Anyone nearby by inhalation of the smoke. | If more than a very small amount, carry out in a fume cupboard. |  |  |  |
| Sulphuric acid is extremely corrosive | Technician making up dilute solution | Wear gloves and face shield (or chemical resistant goggles EN 166 3 if the quantity is not large). Always add acid to water. |  |  |  |
| 1M sulphuric acid is corrosive | Pupil/teacher by splashes during experiment | Wear gloves and chemical resistant goggles EN 166 3 |  |  |  |
| Nitric acid is highly corrosive and oxidizing | Technician making up dilute solution | Wear gloves and face shield (or chemical resistant goggles EN 166 3 if the quantity is not large). Keep away from flammables and reducing agents. |  |  |  |
| 2M Nitric acid is corrosive | Pupil/teacher by splashes during experiment | Wear gloves and chemical resistant goggles EN 166 3 |  |  |  |
| potassium manganate VII is a powerful oxidiser (and harmful if swallowed) | Technician making up dilute solution | Keep away from flammables and reducing agents. Avoid raising dust. |  |  |  |
| 0.01M potassium manganate VII has no significant hazard. |  |  |  |  |  |
| Potassium iodide is an eye irritant | Pupil (or technician) weighing out solid | Wear eye protection. Avoid raising dust. |  |  |  |
| Iodine – the concentration of iodine in the solution is low enough to be of no significant hazard |  |  |  |  |  |

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| **Description of activity:**  A – Iron tablets are ground up and dissolved in 1M sulphuric acid, This is then titrated against 0.01M potassium manganate VII.  B – Tea/cereals (or other foods) are burned and the ash boiled with 2M nitric acid to convert all the Iron to Iron III. The solution, diluted with water has potassium iodide added which reacts with Iron III to produce iodine. This is titrated with sodium thiosulphate using a starch indicator near the end point. |

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| **Additional comments:**  \* If other substances are being burned be careful of any other potentially hazardous fumes. |